

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 OR 15(d) of The Securities Exchange Act of 1934

Date of Report (date of earliest event reported): **November 27, 2019**

CANNAE HOLDINGS, INC.
(Exact name of Registrant as Specified in its Charter)

Delaware
(State or other jurisdiction of
incorporation)

1-38300
(Commission File Number)

82-1273460
(IRS Employer Identification No.)

1701 Village Center Circle
Las Vegas, Nevada 89134
(Addresses of principal executive offices)

(702) 323-7330
(Registrant's telephone number, including area code)

N/A
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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

<u>Title of each class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Cannae Common Stock, \$0.0001 par value	CNNE	New York Stock Exchange

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

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

Item 8.01. Other Events

Cannae Holdings, Inc. (the “Company”) is filing this Current Report on Form 8-K (this “Current Report”) to present adjusted condensed consolidated financial statements for each of the three years in the period ended December 31, 2018 reported for Ceridian HCM Holding Inc. (“Ceridian”) in our Annual Report on Form 10-K for the year ended December 31, 2018 to reflect Ceridian’s adoption of the Financial Accounting Standard Board’s Accounting Standards Codification (“ASC”) Topic 606, “Revenue from Contracts with Customers,” as well as Accounting Standards Update (“ASU”) No. 2016-18, “Restricted Cash,” and ASU No. 2017-07, “Compensation—Retirement Benefits,” as of January 1, 2019, using the retrospective transition method for each.

The rules of the Securities and Exchange Commission (the “SEC”) require that when a registrant adopts ASC Topic 606 using the full retrospective method and then prepares a new registration, proxy or information statement (or amends a previously filed registration, proxy, or information statement) that includes or incorporates by reference financial statements for financial periods prior to the adoption date, the registrant must adjust the prior period financial statements included or incorporated by reference in the registration, proxy or information statement to reflect ASC Topic 606, as if ASC Topic 606 had been effective for such periods. Ceridian has filed Exhibit 99.1 to the [Current Report on Form 8-K on May 21, 2019](#) to reflect its adoption ASC Topic 606. Because the Company filed Ceridian’s audited financial statements with the Company’s [Annual Report on Form 10-K for the year ended December 31, 2018](#), the Company is filing this Current Report to reflect Ceridian’s adjustment of its consolidated financial statements for each of the three years in the period ended December 31, 2018, to reflect ASC Topic 606, ASU No. 2016-18 and ASU No. 2017-07, as if each had been effective for such periods.

The financial information being adjusted in this Current Report was originally filed as Exhibit 99.1 to the Company’s Annual Report on Form 10-K for the year ended December 31, 2018 (the “10-K”), which was filed with the SEC on March 18, 2019. The updated financial statements of Ceridian herein are not a restatement of previously issued financial statements. The adjustment of the information contained in Item 8 (to make necessary conforming changes in “Financial Statements and Supplementary Data”) of the 10-K is presented in Exhibit 99.1 to this Current Report.

The information included in this Current Report is provided for informational purposes only in connection with the Company’s reporting of its investment in Ceridian to reflect Ceridian’s adoption of ASC Topic 606, ASU No. 2016-18 and ASU No. 2017-07 and does not amend or restate the Company’s consolidated financial statements included in the Company’s 10-K. For developments subsequent to the filing of the 10-K, refer to the Company’s Quarterly Reports on Form 10-Q for the quarters ended March 31, 2019, June 30, 2019 and September 30, 2019, which were filed with the SEC on May 9, 2019, August 8, 2019 and November 12, 2019, and Current Reports on Form 8-K filed subsequent to the filing of the 10-K.

Item 9.01 Financial Statements and Exhibits

(d) Exhibits

Exhibit	Description
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm
99.1	Audited Financial Statements of Ceridian HCM Holding Inc. as of and for the year ended December 31, 2018
101.INS	Inline XBRL Instance Document*.
101.SCH	Inline XBRL Taxonomy Extension Schema Document
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	Extension Definition Linkbase Document
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document
101.LAB	Extension Label Linkbase Document
104	Cover Page Interactive Data File formatted as Inline XBRL and contained in Exhibit 101

* - The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.

SIGNATURE

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

Cannae Holdings, Inc.

Date: November 27, 2019

By: /s/ Michael L. Gravelle

Name: Michael L. Gravelle
Title: Executive Vice President, General Counsel,
and Corporate Secretary

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statement (No.333-221694) on Form S-8 of Cannae Holdings, Inc. of our report dated February 28, 2019, except as to Note 2 which is as of May 21, 2019, with respect to the consolidated balance sheets of Ceridian HCM Holding Inc. and its subsidiaries as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the "consolidated financial statements"), which report appears in the Form 8-K of Cannae Holdings, Inc. dated November 27, 2019.

Our report refers to changes to reflect the retrospective adoption of ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)*, as amended; ASU No. 2016-18, *Restricted Cash*; and ASU No. 2017-07, *Compensation – Retirement Benefits*.

/s/ KPMG LLP

Minneapolis, Minnesota
November 27, 2019

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Report of Independent Registered Public Accounting Firm

The Stockholders and Board of Directors
Ceridian HCM Holding Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Ceridian HCM Holding Inc. and its subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive income (loss), stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

Change in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for certain items as a result of the retrospective adoption of Accounting Standards Update ("ASU") No. 2014-09 "Revenue from Contracts with Customers (Topic 606)," as amended, ASU No. 2016-18, "Restricted Cash," and ASU No. 2017-07, "Compensation—Retirement Benefits".

Basis for Opinion

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

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

/s/ KPMG LLP

We have served as the Company's auditor since 1958.

Minneapolis, Minnesota

February 28, 2019, except as to Note 2 which is as of May 21, 2019

Ceridian HCM Holding Inc.
Consolidated Balance Sheets
(Dollars in millions, except share data)

	December 31,	
	2018	2017
	*As Adjusted	*As Adjusted
ASSETS		
Current assets:		
Cash and equivalents	\$ 217.8	\$ 94.2
Trade and other receivables, net	63.9	62.3
Assets of discontinued operations	—	156.2
Prepaid and other current assets	48.9	53.8
Total current assets before customer trust funds	330.6	366.5
Customer trust funds	2,603.5	4,099.7
Total current assets	2,934.1	4,466.2
Property, plant, and equipment, net	104.4	102.0
Goodwill	1,927.4	1,961.0
Other intangible assets, net	187.5	206.5
Other assets	94.4	82.2
Total assets	\$ 5,247.8	\$ 6,817.9
LIABILITIES AND EQUITY		
Current liabilities:		
Current portion of long-term debt	6.8	\$ —
Accounts payable	41.5	44.4
Accrued interest	0.1	15.9
Deferred revenue	23.2	16.5
Employee compensation and benefits	54.5	68.8
Liabilities of discontinued operations	0.2	19.6
Other accrued expenses	23.6	15.0
Total current liabilities before customer trust funds obligations	149.9	180.2
Customer trust funds obligations	2,619.7	4,105.5
Total current liabilities	2,769.6	4,285.7
Long-term debt, less current portion	663.5	1,119.8
Employee benefit plans	153.3	152.4
Other liabilities	45.9	49.0
Total liabilities	3,632.3	5,606.9
Commitments and contingencies (Note 16)		
Stockholders' equity:		
Senior preferred stock, \$0.01 par, 70,000,000 shares authorized, 16,802,144 shares issued and outstanding as of December 31, 2017	—	184.8
Junior preferred stock, \$0.01 par, 70,000,000 shares authorized, 58,244,308 shares issued and outstanding as of December 31, 2017	—	0.6
Common stock, \$0.01 par, 500,000,000 shares authorized, 139,453,710 shares issued and outstanding as of December 31, 2018, and 150,000,000 shares authorized, 65,285,962 shares issued and outstanding as of December 31, 2017	1.4	0.7
Additional paid in capital	2,325.6	1,565.4
Accumulated deficit	(335.6)	(267.3)
Accumulated other comprehensive loss	(375.9)	(311.0)
Total stockholders' equity	1,615.5	1,173.2
Noncontrolling interest	—	37.8
Total equity	1,615.5	1,211.0
Total liabilities and equity	\$ 5,247.8	\$ 6,817.9

*Please refer to Note 2 for a summary of adjustments

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Consolidated Statements of Operations
(Dollars in millions, except share and per share data)

	Year Ended December 31,		
	2018	2017	2016
	*As Adjusted	*As Adjusted	*As Adjusted
Revenue:			
Recurring services	\$ 625.0	\$ 573.9	\$ 537.5
Professional services and other	115.7	102.3	92.6
Total revenue	740.7	676.2	630.1
Cost of revenue:			
Recurring services	200.3	196.8	214.4
Professional services and other	132.2	135.0	115.0
Product development and management	59.0	43.6	43.3
Depreciation and amortization	34.3	31.3	23.1
Total cost of revenue	425.8	406.7	395.8
Gross profit	314.9	269.5	234.3
Selling, general, and administrative expense	258.8	214.1	215.1
Operating profit	56.1	55.4	19.2
Interest expense, net	83.2	87.1	87.4
Other (income) expense, net	(0.2)	8.8	15.9
Loss from continuing operations before income taxes	(26.9)	(40.5)	(84.1)
Income tax expense (benefit)	8.4	(48.5)	7.7
(Loss) income from continuing operations	(35.3)	8.0	(91.8)
(Loss) income from discontinued operations	(25.8)	(6.0)	12.5
Net (loss) income	(61.1)	2.0	(79.3)
Net (loss) income attributable to noncontrolling interest	(0.5)	(1.3)	0.1
Net (loss) income attributable to Ceridian	\$ (60.6)	\$ 3.3	\$ (79.4)
Net loss per share attributable to Ceridian—basic and diluted (Note 19)	\$ (0.60)	\$ (0.26)	\$ (1.44)
Weighted-average shares used to compute net loss per share attributable to Ceridian—basic and diluted (Note 19)	114,049,682	65,204,960	64,988,338

*Please refer to Note 2 for a summary of adjustments.

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Consolidated Statements of Comprehensive Income (Loss)
(Dollars in millions)

	Year Ended December 31,		
	2018	2017	2016
	*As Adjusted	*As Adjusted	*As Adjusted
Net (loss) income	\$ (61.1)	\$ 2.0	\$ (79.3)
Items of other comprehensive income (loss) before income taxes:			
Change in foreign currency translation adjustment	(48.7)	40.6	24.6
Change in unrealized gain from invested customer trust funds	(10.5)	(17.3)	(10.2)
Change in pension liability adjustment (1)	(7.6)	13.8	13.6
Other comprehensive (loss) income before income taxes	(66.8)	37.1	28.0
Income tax (benefit) expense, net	(1.2)	(3.6)	0.6
Other comprehensive (loss) income after income taxes	(65.6)	40.7	27.4
Comprehensive (loss) income	(126.7)	42.7	(51.9)
Comprehensive loss attributable to noncontrolling interest	(0.5)	(0.9)	(0.5)
Comprehensive (loss) income attributable to the Ceridian	<u>\$ (126.2)</u>	<u>\$ 43.6</u>	<u>\$ (51.4)</u>

(1) The amount of the pension liability adjustment recognized in the Consolidated Statements of Operations within Other (income) expense, net was \$11.7, \$10.1 and \$9.9 during the years ended December 31, 2018, 2017, and 2016, respectively.

*Please refer to Note 2 for a summary of adjustments.

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Consolidated Statements of Stockholders' Equity
(Dollars in millions, except share data)

	Senior Preferred Stock		Junior Preferred Stock		Common Stock		Additional Paid In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Receivable from Stockholder	Total Stockholders' Equity	Non-controlling Interest	Total Equity
	Shares	\$	Shares	\$	Shares	\$							
Balance as of December 31, 2015, *As Adjusted	—	\$ —	58,244,308	\$ 0.6	64,924,845	\$0.7	\$ 1,531.5	\$ (156.6)	\$ (379.2)	\$ —	\$ 997.0	\$ —	\$ 997.0
Net (loss) income	—	—	—	—	—	—	—	(79.4)	—	—	(79.4)	0.1	(79.3)
Issuance of Common Stock upon vesting of restricted stock units	—	—	—	—	76,192	—	—	—	—	—	—	—	—
Issuance of Senior Preferred Stock	16,802,144	150.2	—	—	—	—	—	—	—	(75.2)	75.0	—	75.0
Addition of noncontrolling interest	—	—	—	—	—	—	—	—	—	—	—	39.2	39.2
Sale of the UK Business, net of tax \$2.5	—	—	—	—	—	—	—	—	25.9	—	25.9	—	25.9
Senior preferred dividends declared	—	14.1	—	—	—	—	—	(14.1)	—	—	—	—	—
Share-based compensation	—	—	—	—	—	—	15.3	—	—	—	15.3	—	15.3
Foreign currency translation	—	—	—	—	—	—	—	—	8.2	—	8.2	(0.6)	7.6
Change in unrealized loss, net of tax of (\$2.0)	—	—	—	—	—	—	—	—	(8.2)	—	(8.2)	—	(8.2)
Change in minimum pension & postretirement liability, net of tax of \$0.1	—	—	—	—	—	—	—	—	2.0	—	2.0	—	2.0
Balance as of December 31, 2016, *As Adjusted	16,802,144	\$ 164.3	58,244,308	\$ 0.6	65,001,037	\$0.7	\$ 1,546.8	\$ (250.1)	\$ (351.3)	\$ (75.2)	\$ 1,035.8	\$ 38.7	\$ 1,074.5
Net loss	—	—	—	—	—	—	—	3.3	—	—	3.3	(1.3)	2.0
Issuance of common stock	—	—	—	—	183,425	—	3.2	—	—	—	3.2	—	3.2
Issuance of common stock upon exercise of options	—	—	—	—	653,214	—	—	—	—	—	—	—	—
Issuance of common stock upon vesting of restricted stock units	—	—	—	—	76,190	—	—	—	—	—	—	—	—
Share repurchase	—	—	—	—	(627,904)	—	(1.8)	—	—	—	(1.8)	—	(1.8)
Payment for Issuance of Senior Preferred Stock	—	—	—	—	—	—	—	—	—	75.2	75.2	—	75.2
Senior preferred dividends declared	—	20.5	—	—	—	—	—	(20.5)	—	—	—	—	—
Share-based compensation	—	—	—	—	—	—	17.2	—	—	—	17.2	—	17.2
Foreign currency translation	—	—	—	—	—	—	—	—	40.2	—	40.2	0.4	40.6
Change in unrealized loss, net of tax (\$3.6)	—	—	—	—	—	—	—	—	(13.7)	—	(13.7)	—	(13.7)
Change in minimum pension & postretirement liability, net of tax of \$0.0	—	—	—	—	—	—	—	—	13.8	—	13.8	—	13.8
Balance as of December 31, 2017, *As Adjusted	16,802,144	\$ 184.8	58,244,308	\$ 0.6	65,285,962	\$0.7	\$ 1,565.4	\$ (267.3)	\$ (311.0)	\$ —	\$ 1,173.2	\$ 37.8	\$ 1,211.0
Net loss	—	—	—	—	—	—	—	(60.6)	—	—	(60.6)	(0.5)	(61.1)
Issuance of common stock	—	—	—	—	28,695,455	0.3	594.7	—	—	—	595.0	—	595.0
Issuance of common stock upon exercise of options	—	—	—	—	3,119,653	—	45.0	—	—	—	45.0	—	45.0
Issuance of common stock upon vesting of restricted stock units	—	—	—	—	105,990	—	—	—	—	—	—	—	—
Senior preferred dividends declared	—	7.7	—	—	—	—	—	(7.7)	—	—	—	—	—
Conversion of senior and junior preferred shares	(16,802,144)	(192.5)	(58,244,308)	(0.6)	42,246,650	0.4	192.7	—	—	—	—	—	—
LifeWorks Disposition	—	—	—	—	—	—	(95.7)	—	0.7	—	(95.0)	(37.3)	(132.3)
Share-based compensation	—	—	—	—	—	—	23.5	—	—	—	23.5	—	23.5
Foreign currency translation	—	—	—	—	—	—	—	—	(48.7)	—	(48.7)	—	(48.7)
Change in unrealized loss, net of tax (\$1.2)	—	—	—	—	—	—	—	—	(9.3)	—	(9.3)	—	(9.3)
Change in minimum pension & postretirement liability, net of tax of \$0.0	—	—	—	—	—	—	—	—	(7.6)	—	(7.6)	—	(7.6)
Balance as of December 31, 2018, *As Adjusted	—	\$ —	—	\$ —	139,453,710	\$1.4	\$ 2,325.6	\$ (335.6)	\$ (375.9)	\$ —	\$ 1,615.5	\$ —	\$ 1,615.5

*Please refer to Note 2 for a summary of adjustments

See accompanying notes to consolidated financial statements.

	Year Ended December 31,		
	2018	2017	2016
	*As Adjusted	*As Adjusted	*As Adjusted
Net loss	\$ (61.1)	\$ 2.0	\$ (79.3)
Loss (income) from discontinued operations	25.8	6.0	(12.5)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Deferred income tax benefit	(16.1)	(61.2)	(7.2)
Depreciation and amortization	56.6	53.8	53.2
Asset impairment	—	—	10.4
Amortization of debt issuance costs and debt discount	2.1	3.7	3.5
Loss on debt extinguishment	25.7	—	—
Net periodic pension and postretirement cost	2.7	1.5	3.0
Share-based compensation	23.2	16.1	12.5
Environmental reserve	—	—	5.9
Other	0.3	(0.5)	1.2
Changes in operating assets and liabilities excluding effects of acquisitions and divestitures:			
Trade and other receivables	(3.6)	5.7	(5.2)
Prepaid expenses and other current assets	0.6	(6.3)	(9.9)
Accounts payable and other accrued expenses	(6.4)	0.1	(4.4)
Deferred revenue	7.0	4.5	2.7
Employee compensation and benefits	(22.1)	(26.1)	(49.1)
Accrued interest	(15.7)	(4.8)	(0.2)
Accrued taxes	8.4	(6.7)	14.7
Other assets and liabilities	(16.7)	(17.2)	(12.5)
Net cash provided by (used in) operating activities—continuing operations	10.7	(29.4)	(73.2)
Net cash used in operating activities—discontinued operations	(1.2)	(10.4)	(2.3)
Net cash provided by (used in) operating activities	9.5	(39.8)	(75.5)
Cash Flows from Investing Activities			
Purchase of customer trust funds marketable securities	(855.2)	(598.5)	(699.7)
Proceeds from sale and maturity of customer trust funds marketable securities	844.3	610.2	677.6
Expenditures for property, plant, and equipment	(8.0)	(17.5)	(7.4)
Expenditures for software and technology	(32.2)	(33.1)	(25.5)
Net proceeds from divestitures	—	(0.5)	101.6
Net cash (used in) provided by investing activities—continuing operations	(51.1)	(39.4)	46.6
Net cash (used in) provided by investing activities—discontinued operations	—	(0.2)	0.4
Net cash (used in) provided by investing activities	(51.1)	(39.6)	47.0
Cash Flows from Financing Activities			
(Decrease) increase in customer trust funds obligations, net	(1,415.1)	356.1	(655.7)
Net proceeds from issuance of stock	595.0	78.4	75.0
Proceeds from issuance of common stock upon exercise of stock options	45.8	—	—
Repurchase of stock	—	(1.8)	—
Proceeds from debt issuance	680.0	—	—
Repayment of long-term debt obligations	(1,134.0)	(25.9)	(11.8)
Payment of debt refinancing costs	(23.3)	—	—
Net cash (used in) provided by financing activities—continuing operations	(1,251.6)	406.8	(592.5)
Net cash used in financing activities—discontinued operations	—	—	(38.2)
Net cash (used in) provided by financing activities	(1,251.6)	406.8	(630.7)
Effect of exchange rate changes on cash, restricted cash, and equivalents	(12.8)	11.0	15.0
Net (decrease) increase in cash, restricted cash, and equivalents	(1,306.0)	338.4	(644.2)
Elimination of cash from discontinued operations	0.5	5.2	37.7
Cash, restricted cash, and equivalents at beginning of year	2,411.8	2,068.2	2,674.7
Cash, restricted cash, and equivalents at end of year	<u>\$ 1,106.3</u>	<u>\$ 2,411.8</u>	<u>\$ 2,068.2</u>
Reconciliation of cash, restricted cash, and equivalents to the consolidated balance sheets			
Cash and equivalents	217.8	94.2	120.8
Restricted cash and equivalents included in customer trust funds	888.5	2,317.6	1,947.4
Total cash, restricted cash, and equivalents	<u>\$ 1,106.3</u>	<u>\$ 2,411.8</u>	<u>\$ 2,068.2</u>
Supplemental Cash Flow Information:			

Cash paid for interest	\$	74.5	\$	89.7	\$	84.9
Cash paid for income taxes	\$	21.1	\$	21.3	\$	14.8
Cash received from income tax refunds	\$	4.4	\$	1.9	\$	0.2

*Please refer to Note 2 for a summary of adjustments

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Notes to Consolidated Financial Statements
(Dollars in millions, except share and per share data)

1. Organization

Ceridian HCM Holding Inc. and its subsidiaries (also referred to in this report as “Ceridian,” “we,” “our,” and “us”) offer a broad range of services and software designed to help employers more effectively manage employment processes, such as payroll, payroll-related tax filing, human resource information systems, employee self-service, time and labor management, and recruitment and applicant screening. Our technology-based services are typically provided through long-term customer relationships that result in a high level of recurring revenue. Our operations are primarily located in the United States and Canada.

On April 30, 2018, we completed our initial public offering (“IPO”), in which we issued and sold 21,000,000 shares of common stock at a public offering price of \$22.00 per share. We granted the underwriters a 30-day option to purchase an additional 3,150,000 shares of common stock at the offering price, which was exercised in full. A total of 24,150,000 shares of common stock were issued in our IPO. Concurrently with our IPO, we issued an additional 4,545,455 shares of our common stock in a private placement at \$22.00 per share. We received gross proceeds of \$631.3 from the IPO and concurrent private placement before deducting underwriting discounts, commissions, and other offering related expenses.

The use of the proceeds from the IPO were as follows:

Gross proceeds	\$	631.3
Less:		
Underwriters' discount and commissions		29.2
IPO-related expenses		11.8
Redemption of 11% Senior Notes due 2021 (Note 9)		475.0
Call premium on redemption of 11% Senior Notes due 2021		13.1
Interest on redemption of 11% Senior Notes due 2021		10.9
Sponsor management fee		11.3
Debt refinancing expenses		11.4
Cash to balance sheet	\$	<u>68.6</u>

On November 16, 2018, we completed a secondary offering, in which certain of our stockholders (the “Selling Stockholders”) sold 11,000,000 shares of common stock, in an underwritten public offering at \$36.00 per share. The Selling Stockholders granted the underwriters a 30-day option to purchase an additional 1,650,000 shares of common stock at the offering price, which was exercised in full. A total of 12,650,000 shares of common stock were sold by the Selling Stockholders on November 16, 2018, with all proceeds going to the Selling Stockholders. We incurred expenses of \$1.3 during the year ended December 31, 2018, related to the secondary offering within selling, general and administrative expense.

Prior to our IPO, Ceridian HCM Holding Inc. was primarily owned by Ceridian LLC (the “Parent”) and Ceridian Holding II LLC (“Ceridian Holding II”). The Parent was 100% owned by Foundation Holding LLC, which in turn was 100% owned by Ceridian Holding LLC (“Ceridian Holding”). The owners of Ceridian Holding and Ceridian Holding II included (i) affiliates and co-investors of Thomas H. Lee Partners, L.P. (“THL Partners”) and Cannae Holdings, LLC (“Cannae”) (THL Partners and Cannae are together referred to as the “Sponsors”), who collectively owned approximately 96% of the outstanding interests of both Ceridian Holding and Ceridian Holding II, and (ii) other individuals, who collectively owned approximately 4% of the outstanding interests of each holding company.

Subsequent to the IPO and concurrent private placement, we completed an internal corporate reorganization, pursuant to which the limited liability companies that held shares in us were merged with and into Ceridian HCM Holding Inc. At the time of these transactions, these limited liability companies had no assets other than equity interests in us or the other limited liability companies. As a result of these transactions, our previous, pre-IPO stockholders now hold shares of our common stock directly, rather than through a series of limited liability companies. These transactions had no impact on our assets, liabilities, or operations.

Our History

Ceridian was acquired in 2007 by affiliates and co-investors of the Sponsors (the “2007 Merger”). In April 2012, Ceridian acquired Dayforce Corporation, which had built Dayforce, a cloud HCM solution. In the months following the acquisition, Dayforce founder, David D. Ossip, was named Chief Executive Officer of Ceridian HCM, and shortly thereafter, we generally stopped actively selling our Bureau solutions to new customers in the United States to focus our resources on expanding the Dayforce platform and growing Cloud solutions.

As part of our strategy to focus on the growth of our Cloud solutions business, we undertook the following initiatives to simplify our business model:

- (i) sold our consumer-directed benefit services business in 2013,
- (ii) merged Comdata, our payment systems business unit, with FleetCor Technologies in 2014,
- (iii) sold our benefits administration and post-employment compliance business in 2015,
- (iv) sold our United Kingdom and Ireland Bureau businesses and a portion of our operations that supported such businesses in Mauritius in 2016, and
- (v) contributed our LifeWorks employee assistance program business to a joint venture, LifeWorks, in 2016, then distributed our ownership in this joint venture to a holding company owned by our stockholders in April 2018.

As a result of these transactions, we only actively sell Dayforce and Powerpay, which we believe simplifies our business model and positions us well for continued growth. Please refer to Note 3, “Discontinued Operations,” for further discussion of these transactions.

2. Summary of Significant Accounting Policies

Recently Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2014-09, “Revenue from Contracts with Customers,” which replaced all existing revenue guidance created by Accounting Standards Codification (“ASC”) Topic 605, including prescriptive industry-specific guidance, and created ASC Topic 606 for revenue and ASC Subtopic 340-40 for incremental costs of obtaining a contract with customers. This standard’s core principle is that an entity will recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. We have adopted ASU No. 2014-09 as of January 1, 2019, using the full retrospective method for adoption. Please refer to the tables below for the retrospective impacts of the adoption of this guidance. Adoption of the new standard resulted in changes to our accounting policies for revenue recognition, as detailed below.

The adoption of the new standard resulted in changes to the classification and timing of our revenue recognition. Specifically, revenue classified as professional services and other revenue was increased, and revenue classified as recurring services revenue was reduced under the new standard, compared to ASC Topic 605. Adoption of the new standard also resulted in changes to the timing of our revenue recognition compared to ASC Topic 605 because professional services and other revenue is generally recognized earlier in the contract period than recurring services revenue. In compliance with the new standard, a contract asset is reflected on the consolidated balance sheets when revenue recognized for professional service performance obligations exceed the billings and is amortized over the contract period, which is generally three years. We also have changed the timing of certain selling, general, and administrative expenses, as the new standard required capitalizing and amortizing certain selling expenses, such as commissions and bonuses paid to the sales force. These sales expenses are now amortized over the period of benefit, which we have determined to be five years.

In November 2016, the FASB issued ASU No. 2016-18, “Restricted Cash,” which requires that the statement of cash flows explain the change during the period in the total of cash, cash equivalents, and restricted cash. We have adopted this guidance as of January 1, 2019 on a retrospective basis for all periods presented. Accordingly, the consolidated statement of cash flows has been revised to include restricted cash and restricted cash equivalents held to satisfy customer trust funds obligations, as a component of cash, cash equivalents, restricted cash and restricted cash equivalents. Please refer to the tables below for the retrospective impacts of the adoption of this guidance.

In March 2017, the FASB issued ASU No. 2017-07, “Compensation—Retirement Benefits,” which aims to improve the presentation of net periodic pension cost and net periodic postretirement benefit cost. The amendments in this update require that an employer (a) report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period, and (b) report the other components of net benefit cost in the income statement separately from the service cost component and outside a subtotal of income from operations, if one is presented. We have adopted this guidance as of January 1, 2019, on a retrospective basis for all periods presented. Please refer to the tables below for the retrospective impacts of the adoption of this guidance.

In August 2016, the FASB issued ASU No. 2016-15, “Statement of Cash Flows—Classification of Certain Cash Receipts and Cash Payments,” which addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice of certain cash receipts and cash payments. This guidance is effective for non-public companies for fiscal years beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019. We have chosen to early adopt this guidance as of January 1, 2018, and have applied this guidance to the presentation of our debt refinancing transactions that occurred during 2018.

We have adjusted our consolidated financial statements from amounts previously reported due to the adoption of ASC Topic 606, ASU No. 2017-07, and ASU 2016-18. Selected consolidated financial statement line items, which reflect the adoption of the new ASUs, are as follows:

Consolidated Balance Sheet	December 31, 2018		
	As previously reported	ASC Topic 606 Adjustments	As adjusted
ASSETS			
Trade and other receivables, net	\$ 69.9	\$ (6.0)	\$ 63.9
Prepaid expenses and other current assets	42.3	6.6	48.9
Other assets	1.6	92.8	94.4
LIABILITIES			
Deferred revenue	\$ 17.2	\$ 6.0	\$ 23.2
Other liabilities	42.0	3.9	45.9

Consolidated Balance Sheet	December 31, 2017		
	As previously reported	ASC Topic 606 Adjustments	As adjusted
ASSETS			
Trade and other receivables, net	\$ 66.6	\$ (4.3)	\$ 62.3
Prepaid expenses and other current assets	41.7	12.1	53.8
Other assets	2.0	80.2	82.2
LIABILITIES			
Deferred revenue	\$ 14.0	\$ 2.5	\$ 16.5
Other liabilities	45.5	3.5	49.0

Consolidated Statement of Operations	Year Ended December 31, 2018			
	As previously reported	ASC Topic 606 Adjustments	ASU 2017-07 Adjustments	As adjusted
Revenue:				
Recurring services	\$ 652.5	\$ (27.5)	\$ —	\$ 625.0
Professional services and other	93.9	21.8	—	115.7
Total revenue	\$ 746.4	\$ (5.7)	\$ —	\$ 740.7
Costs and expenses:				
Selling, general, and administrative expense	270.7	(9.2)	(2.7)	258.8
Operating profit	49.9	3.5	2.7	56.1
Other income, net	(2.9)	—	2.7	(0.2)
Income tax expense	7.7	0.7	—	8.4
Net loss	\$ (63.9)	\$ 2.8	\$ —	\$ (61.1)
Net loss per share attributable to Ceridian, basic and diluted	\$ (0.62)	\$ 0.02	\$ —	\$ (0.60)

Consolidated Statement of Operations	Year Ended December 31, 2017			
	As previously reported	ASC Topic 606 Adjustments	ASU 2017-07 Adjustments	As adjusted
Revenue:				
Recurring services	\$ 598.5	\$ (24.6)	\$ —	\$ 573.9
Professional services and other	72.3	30.0	—	102.3
Total revenue	\$ 670.8	\$ 5.4	\$ —	\$ 676.2
Cost of revenue:				
Professional services and other	135.8	(0.8)	—	135.0
Total cost of revenue	407.5	(0.8)	—	406.7
Gross profit	263.3	6.2	—	269.5
Costs and expenses:				
Selling, general, and administrative expense	223.0	(7.4)	(1.5)	214.1
Operating profit	40.3	13.6	1.5	55.4
Other expense, net	7.3	—	1.5	8.8
Income tax benefit	(49.6)	1.1	—	(48.5)
Net (loss) income	\$ (10.5)	\$ 12.5	\$ —	\$ 2.0
Net loss per share attributable to Ceridian, basic and diluted	\$ (0.46)	\$ 0.20	\$ —	\$ (0.26)

Consolidated Statement of Operations	Year Ended December 31, 2016			
	As previously reported	ASC Topic 606 Adjustments	ASU 2017-07 Adjustments	As adjusted
Revenue:				
Recurring services	\$ 558.5	\$ (21.0)	\$ —	\$ 537.5
Professional services and other	64.9	27.7	—	92.6
Total revenue	\$ 623.4	\$ 6.7	\$ —	\$ 630.1
Cost of revenue:				
Professional services and other	115.6	(0.6)	—	115.0
Total cost of revenue	396.4	(0.6)	—	395.8
Gross profit	227.0	7.3	—	234.3
Costs and expenses:				
Selling, general, and administrative expense	225.3	(7.2)	(3.0)	215.1
Operating profit	1.7	14.5	3.0	19.2
Other expense, net	12.9	—	3.0	15.9
Income tax expense	6.7	1.0	—	7.7
Net loss	\$ (92.8)	\$ 13.5	\$ —	\$ (79.3)
Net loss per share attributable to Ceridian, basic and diluted	\$ (1.65)	\$ 0.21	\$ —	\$ (1.44)

Consolidated Statement of Cash Flows	Year Ended December 31, 2018			
	As previously reported	ASC Topic 606 Adjustments	ASU 2016-18 Adjustments	As adjusted
Net loss	\$ (63.9)	\$ 2.8	\$ —	\$ (61.1)
Adjustments to reconcile net loss to net cash used in operating activities:				
Deferred income tax benefit	(16.8)	0.7	—	(16.1)
Changes in operating assets and liabilities excluding effects of acquisitions and divestitures:				
Trade and other receivables	(5.3)	1.7	—	(3.6)
Prepaid expenses and other current assets	(4.6)	5.2	—	0.6
Deferred revenue	3.5	3.5	—	7.0
Other assets and liabilities	(2.8)	(13.9)	—	(16.7)
Net cash provided by operating activities- continuing operations	10.7	—	—	10.7
Cash Flows from Investing Activities				
Net change in restricted cash and other restricted assets held to satisfy customer trust funds obligations	1,430.3	—	(1,430.3)	—
Net cash provided by (used in) investing activities	1,379.2	—	(1,430.3)	(51.1)
Effect of Exchange Rate Changes on Cash and Equivalents and Restricted Cash and Equivalents	(9.7)	—	(3.1)	(12.8)
Net increase (decrease) in cash and equivalents and restricted cash and equivalents	123.1	—	(1,429.1)	(1,306.0)
Elimination of cash from discontinued operations	0.5	—	—	0.5
Cash and equivalents and restricted cash and equivalents at beginning of period	94.2	—	2,317.6	2,411.8
Cash and equivalents and restricted cash and equivalents at end of period	<u>\$ 217.8</u>	<u>\$ —</u>	<u>\$ 888.5</u>	<u>\$ 1,106.3</u>

Consolidated Statement of Cash Flows	Year Ended December 31, 2017			
	As previously reported	ASC Topic 606 Adjustments	ASU 2016-18 Adjustments	As adjusted
Net (loss) income	\$ (10.5)	\$ 12.5	\$ —	\$ 2.0
Adjustments to reconcile net loss to net cash used in operating activities:				
Deferred income tax benefit	(62.3)	1.1	—	(61.2)
Changes in operating assets and liabilities excluding effects of acquisitions and divestitures:				
Trade and other receivables	5.3	0.4	—	5.7
Prepaid expenses and other current assets	(6.9)	0.6	—	(6.3)
Deferred revenue	2.6	1.9	—	4.5
Other assets and liabilities	(0.7)	(16.5)	—	(17.2)
Net cash used in operating activities- continuing operations	(29.4)	—	—	(29.4)
Cash Flows from Investing Activities				
Net change in restricted cash and other restricted assets held to satisfy customer trust funds obligations	(367.8)	—	367.8	—
Net cash used in investing activities - continuing operations	(407.2)	—	367.8	(39.4)
Effect of Exchange Rate Changes on Cash and Equivalents and Restricted Cash and Equivalents	8.6	—	2.4	11.0
Net (decrease) increase in cash and equivalents and restricted cash and equivalents	(31.8)	—	370.2	338.4
Elimination of cash from discontinued operations	5.2	—	—	5.2
Cash and equivalents and restricted cash and equivalents at beginning of period	120.8	—	1,947.4	2,068.2
Cash and equivalents and restricted cash and equivalents at end of period	<u>\$ 94.2</u>	<u>\$ —</u>	<u>\$ 2,317.6</u>	<u>\$ 2,411.8</u>

Consolidated Statement of Cash Flows	Year Ended December 31, 2016			
	As previously reported	ASC Topic 606 Adjustments	ASU 2016-18 Adjustments	As adjusted
Net loss	\$ (92.8)	\$ 13.5	\$ —	\$ (79.3)
Adjustments to reconcile net loss to net cash used in operating activities:				
Deferred income tax benefit	(8.3)	1.1	—	(7.2)
Changes in operating assets and liabilities excluding effects of acquisitions and divestitures:				
Trade and other receivables	(5.8)	0.6	—	(5.2)
Prepaid expenses and other current assets	1.1	(11.0)	—	(9.9)
Deferred revenue	(1.8)	4.5	—	2.7
Other assets and liabilities	(3.8)	(8.7)	—	(12.5)
Net cash used in operating activities- continuing operations	(73.2)	—	—	(73.2)
Cash Flows from Investing Activities				
Net change in restricted cash and other restricted assets held to satisfy customer trust funds obligations	677.8	—	(677.8)	—
Net cash provided by investing activities - continuing operations	724.4	—	(677.8)	46.6
Net cash provided by investing activities - discontinued operations	38.6	—	(38.2)	0.4
Net cash provided by investing activities	763.0	—	(716.0)	47.0
Effect of Exchange Rate Changes on Cash and Equivalents and Restricted Cash and Equivalents				
Net increase (decrease) in cash and equivalents and restricted cash and equivalents	1.3	—	13.7	15.0
Elimination of cash from discontinued operations	58.1	—	(702.3)	(644.2)
Cash and equivalents and restricted cash and equivalents at beginning of period	(0.5)	—	38.2	37.7
Cash and equivalents and restricted cash and equivalents at end of period	63.2	—	2,611.5	2,674.7
	<u>\$ 120.8</u>	<u>\$ —</u>	<u>\$ 1,947.4</u>	<u>\$ 2,068.2</u>

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States (“GAAP”). The accompanying consolidated financial statements include the operations and accounts of Ceridian and all subsidiaries, as well as any variable interest entity (“VIE”) in which we have controlling financial interest. All intercompany balances and transactions have been eliminated from our consolidated financial statements.

We consolidate the grantor trusts that hold funds provided by our payroll and tax filing customers pending remittance to employees of those customers or tax authorities in the United States and Canada, although Ceridian does not own the grantor trusts. Under consolidation accounting, the enterprise with a controlling financial interest consolidates a VIE. A controlling financial interest in an entity is determined through analysis that identifies the primary beneficiary which has (1) the power to direct the activities of a VIE that most significantly impact the entity’s economic performance and (2) the obligation to absorb losses of the entity that could potentially be significant to the VIE or the right to receive benefits from the entity that could potentially be significant to the VIE. In addition, ongoing reassessments must be performed to confirm whether an enterprise is the primary beneficiary of a VIE. The grantor trusts are VIEs, and we are deemed to have a controlling financial interest as the primary beneficiary. Please refer to Note 5, “Customer Trust Funds,” for further information on our accounting for these funds.

Reverse Stock Split

On April 10, 2018, we effected a 1-for-2 reverse stock split of our common stock. All of the common share and per share information referenced throughout the consolidated financial statements and accompanying notes thereto have been retroactively adjusted to reflect this reverse stock split.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of our financial statements and our reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Estimates that could significantly affect our results of operations or financial condition include the assignment of fair values to goodwill and other intangible assets and testing for impairment; the testing of impairment of long-lived assets; the determination of our liability for pensions and postretirement benefits; the determination of fair value of stock options granted; and the resolution of tax matters and legal contingencies. Further discussion on these estimates can be found in related disclosures elsewhere in our notes to the consolidated financial statements.

Segments

After consideration of the LifeWorks Disposition, management has concluded that we have one operating and reportable segment. This conclusion aligns with how management monitors operating performance, allocates resources, and deploys capital. Please refer to Note 3, "Discontinued Operations," for further discussion of the LifeWorks Disposition.

Cash and Equivalents

As of December 31, 2018, and 2017, cash and equivalents were comprised of cash held in bank accounts and investments with an original maturity of three months or less.

Concentrations

Cash deposits of client and corporate funds are maintained primarily in large credit-worthy financial institutions in the countries in which we operate. These deposits may exceed the amount of any deposit insurance that may be available through government agencies. All deliverable securities are held in custody with large credit-worthy financial institutions, which bear the risk of custodial loss. Non-deliverable securities, primarily money market securities, are held in custody by large, credit-worthy broker-dealers and financial institutions.

Trade and Other Receivables, Net

Trade and other receivables balances are presented on the consolidated balance sheets net of the allowance for doubtful accounts of \$1.3 and \$1.3 and the reserve for sales adjustments of \$3.8 and \$4.7 as of December 31, 2018 and 2017, respectively. We experience credit losses on accounts receivable and, accordingly, must make estimates related to the ultimate collection of the receivables. Specifically, management analyzes accounts receivable, historical bad debt experience, customer concentrations, customer creditworthiness, and current economic trends when evaluating the adequacy of the allowance for doubtful accounts. We estimate the reserve for sales adjustment based on historical sales adjustment experience. We write off accounts receivable when we determine that the accounts are uncollectible, generally upon customer bankruptcy or the customer's nonresponse to continued collection efforts.

Property, Plant, and Equipment

Our property, plant, and equipment assets are stated at cost less depreciation. Depreciation is calculated on a straight-line basis over the shorter of the remaining lease term or estimated useful life of the related assets, which are generally as follows:

Buildings	40 years
Building improvements	5 years
Machinery and equipment	4-6 years
Computer equipment	3-4 years

Repairs and maintenance costs are expensed as incurred. We capitalized interest of \$0.5 and \$0.6 in property, plant, and equipment during the years ended December 31, 2018 and 2017, respectively. Property, plant, and equipment assets are assessed for impairment as described under the heading "Impairment of Long-Lived Assets" below.

Assignment of Fair Values Upon Acquisition of Goodwill and Other Intangible Assets

In the event of a business combination where we are the acquiring party, we are required to assign fair values to all identifiable assets and liabilities acquired, including intangible assets, such as customer lists, identifiable intangible trademarks, technology and non-compete agreement. We are also required to determine the useful life for definite-lived identifiable intangible assets acquired. These determinations require significant judgments, estimates, and assumptions; and, when material amounts are involved, we generally utilize the assistance of third-party valuation consultants. The remainder of the purchase price of the acquired business not assigned to identifiable assets or liabilities is then recorded as goodwill.

In conjunction with the 2007 Merger, affiliates of the Sponsors completed the acquisition of all outstanding equity of the Ceridian entities. Although Parent continued as the same legal entity after the 2007 Merger, the application of push down accounting representing the termination of the old accounting entity and the creation of a new one resulted in the adjustment of all net assets to their respective fair values as of the 2007 Merger. Net assets of the Parent were adjusted to their respective fair values, which included goodwill, trademarks, customer lists, and other intangible assets.

Goodwill and Intangible Assets

Goodwill, which represents the excess purchase price over the fair value of net assets of businesses acquired, is assigned to reporting units based on the benefits derived from the acquisition. Goodwill and indefinite-lived intangibles are not amortized against earnings, but instead are subject to impairment review on at least an annual basis. We perform our annual assessment of goodwill and indefinite-lived intangible balances as of October 1 of each year. There was no indication of impairment at October 1, 2018.

We assess goodwill impairment risk by first performing a qualitative review of entity-specific, industry, market, and general economic factors for each reporting unit. If significant potential goodwill impairment risk exists for a specific reporting unit, we apply a quantitative test. The quantitative test compares the reporting unit's estimated fair value with its carrying amount. In estimating fair value of our reporting units, we use a combination of the income approach and the market-based approach. A number of significant assumptions and estimates are involved in determining the current fair value of the reporting units, including operating cash flows, markets and market share, sales volumes and prices, and working capital changes. We consider historical experience and all available information at the time the fair values of our reporting units are estimated. However, fair values that could be realized in an actual transaction may differ from those used to evaluate the goodwill for impairment. The evaluation of impairment involves comparing the current fair value of the reporting unit to the carrying amount. To the extent that the carrying amount of goodwill of the reporting unit exceeds the fair value of the reporting unit, an impairment loss is recognized.

Intangible assets represent amounts assigned to specifically identifiable intangible assets at the time of an acquisition. Definite-lived assets are amortized on a straight-line basis generally over the following periods:

Customer lists and relationships	5-15 years
Technology	3-4 years

Indefinite-lived intangible assets, which consist of trade names, are tested for impairment on an annual basis, or more frequently if certain events or circumstances occur that could indicate impairment. When evaluating whether the indefinite-lived intangible assets are impaired, the carrying amount is compared to its estimated fair value. The estimate of fair value is based on a relief from royalty method which calculates the cost savings associated with owning rather than licensing the trademark. An estimated royalty rate is applied to forecasted revenue and the resulting cash flows are discounted. Definite-lived assets are assessed for impairment as described under the heading "Impairment of Long-Lived Assets" below.

Internally Developed Software Costs

In accordance with Accounting Standards Codification (“ASC”) Topic 350, we capitalize costs associated with software developed or obtained for internal use when both the preliminary project stage is completed and our management has authorized further funding for the project, which it deems probable of completion. Capitalized software costs include only: (1) external direct costs of materials and services consumed in developing or obtaining the software; (2) payroll and payroll-related costs for employees who are directly associated with and who devote time to the project; and (3) interest costs incurred while developing the software. Capitalization of these costs ceases no later than the point at which the project is substantially complete and ready for its intended purpose. We do not include general and administrative costs and overhead costs in capitalizable costs. We charge research and development costs, product management, and other software maintenance costs related to software development to earnings as incurred.

We had capitalized software costs, net of accumulated amortization, of \$61.9 and \$56.4 as of December 31, 2018 and 2017, respectively, included in property, plant, and equipment in the accompanying consolidated balance sheets. We amortize software costs on a straight-line basis over the expected life of the software, generally a range of two to seven years. Amortization of software costs totaled \$26.2, \$23.6, and \$20.9 for the years ended December 31, 2018, 2017, and 2016, respectively.

Impairment of Long-Lived Assets

Long-lived assets, such as property, plant, and equipment, capitalized software, and definite-lived intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset group may not be recoverable. Recoverability of asset groups to be held and used is measured by a comparison of the carrying amount of an asset group to the estimated undiscounted future cash flows expected to be generated by the asset group. If the carrying amount of an asset group exceeds its estimated future cash flows, an impairment charge is recognized for the amount by which the carrying amount of the asset group exceeds the fair value of the asset group.

Deferred Costs

Deferred costs primarily consist of deferred sales commissions. Sales commissions paid based on the annual contract value of a signed customer contract are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions paid based on the annual contract value are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be five years.

Deferred costs included within Other assets on our consolidated balance sheets were \$83.5 and \$70.2 as of December 31, 2018 and 2017, respectively. Amortization expense for the deferred costs was \$26.2, \$21.2, and \$17.5 for the years ended December 31, 2018, 2017, and 2016, respectively.

Revenue Recognition

The core principle of ASC Topic 606 is that revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. In accordance with ASC Topic 606, we perform the following steps to determine revenue to be recognized:

- 1) Identify the contract(s) with a customer;
- 2) Identify the performance obligations in the contract;
- 3) Determine the transaction price;
- 4) Allocate the transaction price to the performance obligations in the contract; and
- 5) Recognize revenue when (or as) we satisfy a performance obligation.

The significant majority of our two major revenue sources (recurring and professional services and other) are derived from contracts with customers. Recurring revenues are primarily related to our cloud subscription performance obligations. Professional services and other revenues are primarily related to professional services for our cloud customers (including implementation services to activate new accounts, as well as post-go live professional services typically billed on a time and materials basis) and, to a much lesser extent, fees for other non-recurring services, including sales of time clocks and certain client reimbursable out-of-pocket expenses. Fees charged to cloud subscription performance obligations are generally priced either on a per-employee-per-month (“PEPM”) basis for a given month or on a per-employee-per-process basis for a given process, both based on usage; and fees charged for professional services are typically priced on a fixed fee basis for activating new accounts and on a time and materials basis for post go-live professional services.

Our recurring cloud subscription performance obligations are generally priced based on the number of active customer employees, as of the signing of the contract, at the contract PEPM rate over the initial contract term. Our professional services are generally based on a fixed fee charged to our customers for activating new accounts and on a time and materials basis for post go-live professional services. There is typically no variable consideration related to our recurring cloud subscriptions or our activation services, nor do they include a significant financing component, non-cash consideration, or consideration payable to a customer. Our recurring cloud subscriptions are typically billed one month in advance while our professional services are billed over the implementation period for activation of new accounts and as work is performed for post go-live professional services.

Our cloud services arrangements include multiple performance obligations, and transaction price allocations are based on the stand-alone selling price ("SSP") for each performance obligation. Our contract renewal rates serve as an observable input to establish SSP for our recurring cloud subscription performance obligations. The SSP for professional services performance obligations is estimated based on market conditions and observable inputs, including rates charged by third parties to perform implementation services.

For our performance obligations, the consideration allocated to cloud subscription revenues is recognized as recurring revenues, typically commencing with the date the customer processes their first live payroll using the solution (referred to as the "go-live" date). The consideration allocated to professional services to activate a new account is recognized as professional services revenues based on the proportion of total work performed, using reasonably dependable estimates (in relation to progression through the implementation phase), by solution.

Recurring Services Revenues

Revenues are presented within the consolidated statements of operations in two categories: recurring services, and professional services and other. Recurring services revenues consist of monthly fees that we charge for our Cloud and Bureau solutions. For our Dayforce solutions, we primarily charge monthly recurring fees on a per employee, per month ("PEPM") basis, generally one-month in advance of service, based on the number and type of solutions provided to the customer and the number of employees at the customer. We charge Powerpay customers monthly recurring fees on a per-employee, per-process basis. For our Bureau solutions, we typically charge monthly recurring fees on a per-process basis. The typical recurring services customer contract has an initial term of three years. The initial recurring services contracts have general acceptance criteria that consist of the completion of user acceptance testing. Any credits related to service level commitments are recognized as incurred, as service level failures are not anticipated at contract signing. Should a customer cancel the initial contract, an early termination fee may be applicable, and revenue is recognized upon collection. We also generate recurring services revenue from investment income on our Cloud and Bureau customer funds held in trust before such funds are remitted to taxing authorities, customer employees, or other third parties. We refer to this investment income as float revenue. Please refer to Note 12, "Revenue," for a full description of our sources of revenue.

Professional Services and Other Revenues

Professional services and other revenues consist primarily of charges relating to the work performed to assist customers with the planning, design, implementation, and staging of their solutions. Also included in professional services are any related training services, post-implementation professional services, and purchased time clocks. We also generate professional services and other revenues from custom professional services and consulting services that we provide and for certain third-party services that we arrange for our Bureau customers. Professional services revenue is primarily recognized as hours are incurred.

Costs and Expenses

Cost of Revenue

Cost of revenue consists of costs to deliver our revenue-producing services. Most of these costs are recognized as incurred, that is, as we become obligated to pay for them. Some costs of revenue are recognized in the period that a service is sold and delivered. Other costs of revenue are recognized over the period of use or in proportion to the related revenue.

The costs recognized as incurred consist primarily of customer service staff costs, customer technical support costs, implementation personnel costs, costs of hosting applications, consulting and purchased services, delivery services, and royalties. The costs of revenue recognized over the period of use are depreciation and amortization, rentals of facilities and equipment, and direct and incremental costs associated with deferred implementation service revenue.

Cost of recurring services revenues primarily consists of costs to provide maintenance and technical support to our customers, and the costs of hosting our applications. The cost of recurring services revenues includes compensation and other employee-related expenses for data center staff, payments to outside service providers, data center, and networking expenses.

Cost of professional services and other revenues primarily consists of costs to provide implementation consulting services and training to our customers, as well as the cost of time clocks. Costs to provide implementation consulting services include compensation and other employee-related expenses for professional services staff, costs of subcontractors, and travel.

Product development and management expense includes costs related to software development activities that do not qualify for capitalization, such as development, quality assurance, testing of new technologies, and enhancements to our existing solutions that do not result in additional functionality. Product development and management expense also includes costs related to the management of our service offerings. Research and development expense, which is included within product development and management expense, was \$29.6, \$19.0, and \$13.0 for the years ended December 31, 2018, 2017, and 2016, respectively.

Depreciation and amortization related to cost of revenue primarily consists of amortization of capitalized software.

Selling, General, and Administrative Expense

Selling expense includes costs related to maintaining a direct marketing infrastructure and sales force and other direct marketing efforts, such as marketing events, advertising, telemarketing, direct mail, and trade shows. Advertising costs are expensed as incurred. Advertising expense was \$5.8, \$5.6, and \$5.9 for the years ended December 31, 2018, 2017, and 2016, respectively.

General and administrative expense includes costs that are not directly related to delivery of services, selling efforts, or product development, primarily consisting of corporate-level costs, such as administration, finance, legal and human resources. Also included in this category are depreciation, and amortization of other intangible assets not reflected in cost of revenue, the provision for doubtful accounts receivable, and net periodic pension costs.

Other (Income) Expense, Net

Other (income) expense, net includes the results of transactions that are not appropriately classified in another category. These items are primarily net periodic benefit costs, excluding service costs, foreign currency translation gains and losses resulting mainly from intercompany receivables and payables denominated in currencies other than the subsidiary's functional currency, environmental reserve charges, and charges related to the impairment of asset values.

Income Taxes

Income taxes have been provided for using the asset and liability method. The asset and liability method requires an asset and liability based approach in accounting for income taxes. Deferred tax assets and liabilities are recorded for temporary differences between the financial reporting basis and the tax basis of assets and liabilities as adjusted for the expected benefits of utilizing net operating loss carryforwards. The impact on deferred taxes of changes in tax rates and laws, if any, applied to the years during which temporary differences are expected to be settled, is reflected in the consolidated financial statements in the period of enactment.

We classify interest and penalties related to income taxes as a component of the income tax provision.

Fair Value of Financial Instruments

The carrying amounts of cash and equivalents, trade and other receivables, net, customer trust funds, customer trust funds obligations, customer advance payments, and accounts payable approximate fair value because of the short-term nature of these items.

Share-Based Compensation

Our employees participate in share-based compensation plans. Under the fair value recognition provisions of share-based compensation accounting, we measure share-based compensation cost at the grant date based on the fair value of the award and recognize the compensation expense over the requisite service period, which is the period during which an employee is required to provide services in exchange for the award.

We use the Black-Scholes standard option pricing model (“Black-Scholes model”) to determine the fair value of stock options with term-based vesting conditions. The determination of the fair value of the awards on the date of grant using the Black-Scholes model is affected by the value of our common stock as well as other inputs and assumptions described below. Prior to our IPO, the value of our common stock was determined by the Board of Directors with assistance from a third-party valuation expert.

If factors change and we employ different assumptions for estimating share-based compensation expense in future periods or if we adopt a different valuation model, the future periods may differ significantly from what we have recorded in the current period and could materially affect our operating results.

To determine the fair value of both term- and performance-based stock options, the risk-free interest rate used was based on the implied yield currently available on U.S. Treasury zero coupon issues with remaining term equal to the contractual term of the performance-based options and the expected term of the term-based options. Given our limited history as a public company, the estimated volatility of our common stock is based on volatility data for selected comparable public companies over the expected term of our stock options. Because we do not anticipate paying any cash dividends in the foreseeable future, we use an expected dividend yield of zero. The amount of share-based compensation expense we recognize during a period is based on the portion of the awards that are ultimately expected to vest.

We estimate option forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. We analyze historical data to estimate pre-vesting forfeitures and record share-based compensation expense for those awards expected to vest. We recognize term-based stock compensation expense using the straight-line method.

Pension and Other Postretirement Benefits Liability

We present information about our pension and postretirement benefit plans in Note 10 to our consolidated financial statements, “Employee Benefit Plans.” Liabilities and expenses for pensions and other postretirement benefits are determined with the assistance of third-party actuaries, using actuarial methodologies and incorporating significant assumptions, including the rate used to discount the future estimated liability, the long-term rate of return on plan assets, and several assumptions relating to the employee workforce (medical costs, retirement age and mortality). The discount rate assumption utilizes a full yield curve approach by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. The impact of a change in the discount rate of 25 basis points would be approximately \$12 million on the liabilities and \$0.1 million on pre-tax earnings in the following year. The long-term rate of return is estimated by considering historical returns and expected returns on current and projected asset allocations and is generally applied to a five-year average market value of assets. A change in the assumption for the long-term rate of return on plan assets of 25 basis points would impact pre-tax earnings by approximately \$1 million. At December 31, 2017, we updated our mortality assumptions utilizing an improvement scale issued by the Society of Actuaries in October 2017, which resulted in a \$6.0 million reduction in the projected benefit obligation. At December 31, 2018, we updated our mortality assumptions utilizing an improvement scale issued by the Society of Actuaries in October 2018, which resulted in a \$1.5 million reduction in the projected benefit obligation.

Foreign Currency Translation

We have international operations whereby the local currencies serve as functional currencies. We translate foreign currency denominated assets and liabilities at the end-of-period exchange rates and foreign currency denominated statements of operations at the weighted-average exchange rates for each period. We report the effect of changes in the U.S. dollar carrying values of assets and liabilities of our international subsidiaries that are due to changes in exchange rates between the U.S. dollar and the subsidiaries' functional currency as foreign currency translation within accumulated other comprehensive income (loss) in the accompanying consolidated statements of stockholders' equity and comprehensive income (loss). Gains and losses from transactions and translation of assets and liabilities denominated in currencies other than the functional currency of the subsidiaries are recorded in the consolidated statements of operations within other (income) expense, net.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU No. 2016-02, "Leases," which created ASC Topic 842 and is intended to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and by disclosing key information about leasing arrangements. This standard requires balance sheet recognition for both finance leases and operating leases. This guidance is effective for public companies for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. An entity will, in effect, continue to account for leases that commence before the effective date in accordance with previous GAAP unless the lease is modified, except that lessees are required to recognize a right-of-use asset and a lease liability for all operating leases at each reporting date based on the present value of the remaining minimum rental payments that were tracked and disclosed under previous GAAP. Management will adopt this guidance beginning in the first quarter of 2019, and has chosen to take advantage of the additional transition method in ASU No. 2018-11 discussed below, in which a cumulative-effect adjustment will be made to the opening balance of retained earnings in the period of adoption. Currently, based on management's implementation efforts, we will recognize a right-of-use asset and a lease liability on the consolidated balance sheets as of January 1, 2019, in the range of \$35.0 to \$45.0.

In February 2018, the FASB issued ASU No. 2018-02, "Income Statement—Reporting Comprehensive Income," which is in response to a narrow-scope financial reporting issue that arose because of the Tax Cuts and Jobs Act. The amendment in this update allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act. This amendment is intended to improve the usefulness of information reported to financial statement users by requiring certain disclosures about stranded tax effects. The amendment in this update is effective for all entities for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Management will adopt this guidance beginning in the first quarter of 2019. We anticipate the adoption of this guidance will not have a significant impact on our consolidated balance sheets.

In July 2018, the FASB issued ASU No. 2018-10, "Codification Improvements to Topic 842, Leases" and 2018-11, "Leases (Topic 842): Targeted Improvements." The amendments in ASU No. 2018-10 affect narrow aspects of the guidance issued in ASU No. 2016-02. For non-early adopters, this amendment is effective under the same timelines as ASU No. 2016-02. The amendments in ASU No. 2018-11 provide entities with an additional (and optional) transition method to adopt the new lease requirements. Under the additional transition method, entities may initially apply the requirements by recognizing a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. The amendments in this update also provide lessors with a practical alternative to separate non-lease components from the associated lease component. Under this alternative, lessors may account for those components as a single component if the non-lease components otherwise would be accounted for under the new revenue guidance (Topic 606) and certain other criteria are met. For entities that have not adopted Topic 842 before the issuance of this update, the effective date and transition requirements are the same as the effective date and transition requirements in ASU No. 2016-02. As discussed above, management has chosen to take advantage of the additional transition method created by this guidance and will record a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption, which will be the first quarter of 2019.

3. Discontinued Operations

Life Works Disposition

On March 1, 2016, we entered into a strategic joint venture with WorkAngel Technology Limited (“WorkAngel”) in which we contributed our existing LifeWorks employee assistance program business to WorkAngel Organisation Limited, a newly formed English limited company. On January 20, 2017, WorkAngel Organisation Limited changed its name to LifeWorks Corporation Ltd (“LifeWorks”). We had a controlling interest in LifeWorks, including certain preferential distribution rights; therefore, LifeWorks was consolidated within our financial statements, and the other joint venture ownership interest component was presented as a noncontrolling interest. During the years ended December 31, 2018, and 2017, there were losses attributable to the noncontrolling interest of \$0.5 and \$1.3, respectively. During the year ended December 31, 2016, there was income attributable to the noncontrolling interest of \$0.1.

In the second quarter of 2018, contemporaneously with our IPO and concurrent private placement, we distributed our controlling financial interest in LifeWorks to our stockholders of record prior to the IPO on a pro rata basis in accordance with their pro rata interest in us (the “LifeWorks Disposition”).

The LifeWorks Disposition represented a strategic shift in our overall business and had a significant impact on the financial statement results. Therefore, the LifeWorks business has been presented as discontinued operations in our consolidated financial statements and accompanying notes for all periods presented. Ceridian’s net book value related to LifeWorks of \$95.7 was recorded as a distribution through additional paid in capital within our consolidated balance sheet during the second quarter of 2018.

The amounts in the table below reflect the operating results of LifeWorks reported as discontinued operations, as well as supplemental disclosures of the discontinued operations:

	Year Ended December 31,		
	2018	2017	2016
Net revenues	\$ 28.3	\$ 79.9	\$ 80.8
(Loss) income from operations before income taxes	(0.9)	(0.4)	7.1
Income tax expense	(24.9)	(4.9)	(11.1)
Loss from discontinued operations, net of income taxes	\$ (25.8)	\$ (5.3)	\$ (4.0)
Depreciation and amortization	\$ 1.4	\$ 4.1	\$ 4.1
Capital expenditures	\$ —	\$ 0.2	\$ 0.3

The amounts in the table below reflect the assets and liabilities reported as discontinued operations for LifeWorks:

	December 31, 2017
Assets:	
Cash and equivalents	\$ 5.4
Trade and other receivables, net	13.3
Prepaid expenses	1.5
Property, plant, and equipment, net	1.8
Other intangible assets, net	5.9
Goodwill	126.3
Other assets	2.0
Assets of discontinued operations	\$ 156.2
Liabilities:	
Accounts payable	\$ 4.4
Deferred revenue	2.8
Employee compensation and benefits	1.2
Other liabilities	10.9
Liabilities of discontinued operations	\$ 19.3

Sale of UK Business

On June 15, 2016, we completed the stock sale of our United Kingdom and Ireland businesses, along with the portion of our Mauritius operations that supported these businesses (the “UK Business”). We received \$93.2 in connection with this transaction. Concurrent with this transaction, we entered into a strategic partnership with the acquirer, SD Worx, a leading European provider of payroll and HCM services, to deliver cloud human capital management (“HCM”) services across Europe.

This transaction represented a strategic shift in our overall business and had a significant impact on our financial statement results. Therefore, the UK Business has been presented as discontinued operations in the consolidated financial statements and accompanying notes for all periods presented. The sale of the UK Business, which made up the International reporting unit, was considered a sale of a business, and as such, the entire goodwill balance assigned to the International reporting unit of \$23.8 was included in the carrying amount used in determining the gain on sale of the UK Business. During the year ended December 31, 2017, there was a settlement payment made to SD Worx.

The amounts in the table below reflect the operating results of the UK Business reported as discontinued operations, as well as supplemental disclosures of the discontinued operations:

	Year Ended December 31,	
	2017	2016
Net revenues	\$ —	\$ 37.0
Income from operations before income taxes	—	0.5
(Loss) gain on sale of businesses	(1.0)	5.9
Income tax benefit	—	0.2
(Loss) income from discontinued operations, net of income taxes	\$ (1.0)	\$ 6.6
Depreciation and amortization	\$ —	\$ 1.3
Capital expenditures	\$ —	\$ 0.7

Sale of Divested Benefits Continuation Businesses

In the third quarter of 2013, we entered into an agreement for the sale of certain of our customer contracts for consumer-directed benefit services, including flexible spending accounts, health reimbursement accounts, health savings accounts, commuter (parking or transit) premium-only plans, and tuition reimbursement plans (collectively, the “Consumer-Directed Benefit Services”). During the third quarter of 2015, we completed two separate transactions that resulted in the sale of our benefits administration and post-employment health insurance portability compliance businesses (the “Divested Benefits Continuation Businesses”).

These three transactions represented a strategic shift in our overall business and had a significant impact on our financial statement results. Accordingly, the Divested Benefits Continuation Businesses, as well as the Consumer-Directed Benefit Services, have been presented as discontinued operations in the consolidated financial statements and accompanying notes for all periods presented. The amounts in the table below reflect the operating results and gain on sale of the Divested Benefits Continuation Businesses reported as discontinued operations, as well as supplemental disclosures of the discontinued operations:

The purchase price of the Consumer-Directed Benefit Services was subject to adjustment, dependent upon which customers transitioned to the acquirer. Since a portion of the customer contracts were assigned to the acquirer on the sale date, that portion of the purchase price was recognized upon the sale date. For the remaining contracts that required transition, the purchase price was deferred and recognized as each contract transferred.

	Year Ended December 31,	
	2017	2016
Net revenues	\$ —	\$ 4.8
Loss from operations before income taxes	—	(0.8)
Gain on sale of businesses	0.5	21.0
Income tax expense	(0.2)	(10.3)
Income from discontinued operations, net of income taxes	\$ 0.3	\$ 9.9
Depreciation and amortization	\$ —	\$ —
Capital expenditures	\$ —	\$ —

For both sales of the Divested Benefits Continuation Businesses, consideration received was contingent upon the number and dollar value of successful customer transitions and was recorded when earned. Proceeds of \$21.0 were received and earned based on the customers transitioned during the years ended December 31, 2016. The proceeds received during the year ended December 31, 2017, were for a final purchase price true-up related to one of the transactions.

The remaining liabilities related to discontinued operations for the Divested Benefits Continuation Businesses as of December 31, 2018, and 2017, were \$0.2 and \$0.3 of other accrued expenses.

4. Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (an exit price). GAAP outlines a valuation framework and creates a fair value hierarchy intended to increase the consistency and comparability of fair value measurements and the related disclosures. Certain assets and liabilities must be measured at fair value, and disclosures are required for items measured at fair value.

We measure our financial instruments using inputs from the following three levels of the fair value hierarchy. The three levels are as follows:

- Level 1 inputs are unadjusted quoted prices in active markets for identical assets or liabilities that we have the ability to access at the measurement date.
- Level 2 inputs include quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable for the asset or liability (that is, interest rates, yield curves, etc.), and inputs that are derived principally from or corroborated by observable market data by correlation or other means (market corroborated inputs).
- Level 3 inputs include unobservable inputs that reflect our assumptions about the assumptions that market participants would use in pricing the asset or liability. These inputs are developed based on the best information available, including internal data.

Financial Assets and Liabilities Measured at Fair Value on a Recurring Basis

As of December 31, 2018, our financial assets and liabilities measured at fair value on a recurring basis were categorized as follows:

	Total	Level 1	Level 2	Level 3
Assets				
Available for sale customer trust funds assets	\$ 1,715.0	\$ —	\$ 1,715.0(a)	\$ —
Total assets measured at fair value	<u>\$ 1,715.0</u>	<u>\$ —</u>	<u>\$ 1,715.0</u>	<u>\$ —</u>

As of December 31, 2017, our financial assets and liabilities measured at fair value on a recurring basis were categorized as follows:

	Total	Level 1	Level 2	Level 3
Assets				
Available for sale customer trust funds assets	\$ 1,782.1	\$ —	\$ 1,782.1(a)	\$ —
Total assets measured at fair value	\$ 1,782.1	\$ —	\$ 1,782.1	\$ —

(a) Fair value is based on inputs that are observable for the asset or liability, other than quoted prices.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

During the years ended December 31, 2018 and 2017, we did not re-measure any financial assets or liabilities at fair value on a nonrecurring basis.

5. Customer Trust Funds

Overview

In connection with our U.S. and Canadian payroll and tax filing services, we collect funds for payment of payroll and taxes; temporarily hold such funds in trust until payment is due; remit the funds to the clients' employees and appropriate taxing authorities; file federal, state and local tax returns; and handle related regulatory correspondence and amendments. The assets held in trust are intended for the specific purpose of satisfying client fund obligations and therefore are not freely available for our general business use.

Our customer trust funds are held and invested with the primary objectives being to protect the principal balance and to ensure adequate liquidity to meet cash flow requirements. Accordingly, we maintain on average approximately 46% of customer trust funds in liquidity portfolios with maturities ranging from one to 120 days, consisting of high-quality bank deposits, money market mutual funds, commercial paper, or collateralized short-term investments; and we maintain on average approximately 54% of customer trust funds in fixed income portfolios with maturities ranging from 120 days to 10 years, consisting of U.S. Treasury and agency securities, Canada government and provincial securities, as well as highly rated asset-backed, mortgage-backed, municipal, corporate and bank securities. To maintain sufficient liquidity in the trust to meet payment obligations, we also have financing arrangements and may pledge fixed income securities for short-term financing.

Financial Statement Presentation

Investment income from invested customer trust funds constitutes a component of our compensation for providing services under agreements with our customers. Investment income from invested customer trust funds included in revenue amounted to \$67.0, \$46.5, and \$39.1 for the years ended December 31, 2018, 2017, and 2016, respectively. Investment income includes interest income, realized gains and losses from sales of customer trust funds' investments, and unrealized credit losses determined to be other-than-temporary.

The amortized cost of customer trust funds as of December 31, 2018 and 2017, is comprised of the original cost of assets acquired. The amortized cost and fair values of investments of customer trust funds available for sale at December 31, 2018 and 2017, were as follows:

Investments of Customer Trust Funds at December 31, 2018

	Amortized Cost	Gross Unrealized		Fair Value
		Gain	Loss	
Money market securities, investments carried at cost and other cash equivalents	\$ 876.9	\$ —	\$ —	\$ 876.9
Available for sale investments:				
U.S. government and agency securities	573.4	0.2	(11.4)	562.2
Canadian and provincial government securities	392.5	3.4	(1.4)	394.5
Corporate debt securities	495.0	0.5	(4.7)	490.8
Asset-backed securities	247.1	0.2	(2.7)	244.6
Mortgage-backed securities	8.5	—	(0.2)	8.3
Other securities	14.7	—	(0.1)	14.6
Total available for sale investments	<u>1,731.2</u>	<u>4.3</u>	<u>(20.5)</u>	<u>1,715.0</u>
Invested customer trust funds	2,608.1	\$ 4.3	\$ (20.5)	2,591.9
Trust receivables	11.6			11.6
Total customer trust funds	<u>\$ 2,619.7</u>			<u>\$ 2,603.5</u>

Investments of Customer Trust Funds at December 31, 2017

	Amortized Cost	Gross Unrealized		Fair Value
		Gain	Loss	
Money market securities, investments carried at cost and other cash equivalents	\$ 2,309.3	\$ —	\$ —	\$ 2,309.3
Available for sale investments:				
U.S. government and agency securities	584.6	0.1	(7.1)	577.6
Canadian and provincial government securities	418.2	6.6	(1.5)	423.3
Corporate debt securities	472.3	0.8	(2.5)	470.6
Asset-backed securities	280.8	—	(1.8)	279.0
Mortgage-backed securities	15.0	—	(0.2)	14.8
Other securities	17.0	—	(0.2)	16.8
Total available for sale investments	1,787.9	7.5	(13.3)	1,782.1
Invested customer trust funds	4,097.2	\$ 7.5	\$ (13.3)	4,091.4
Trust receivables	8.3			8.3
Total customer trust funds	\$ 4,105.5			\$ 4,099.7

The following represents the gross unrealized losses and the related fair value of the investments of customer trust funds available for sale, aggregated by investment category and length of time that individual securities have been in a continuous unrealized loss position at December 31, 2018.

	Less than 12 months		12 months or more		Total	
	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value
U.S. government and agency securities	\$ (1.0)	\$ 100.1	\$ (10.4)	\$ 419.1	\$ (11.4)	\$ 519.2
Canadian and provincial government securities	(0.1)	14.5	(1.3)	130.5	(1.4)	145.0
Corporate debt securities	(1.1)	136.6	(3.6)	204.6	(4.7)	341.2
Asset-backed securities	(0.2)	40.7	(2.5)	169.1	(2.7)	209.8
Mortgage-backed securities	—	—	(0.2)	8.2	(0.2)	8.2
Other securities	(a)	1.7	(0.1)	12.8	(0.1)	14.5
Total available for sale investments	\$ (2.4)	\$ 293.6	\$ (18.1)	\$ 944.3	\$ (20.5)	\$ 1,237.9

(a) These investments have been in an unrealized loss position; however, the amount of unrealized loss is less than \$0.05.

Management does not believe that any individual unrealized loss as of December 31, 2018, represents an other-than-temporary impairment. The unrealized losses are primarily attributable to changes in interest rates and not to credit deterioration. We currently do not intend to sell or expect to be required to sell the securities before the time required to recover the amortized cost.

The amortized cost and fair value of investment securities available for sale at December 31, 2018, by contractual maturity are shown below. Expected maturities will differ from contractual maturities because borrowers may have the right to call or to prepay obligations with or without call or prepayment penalties.

	December 31, 2018	
	Cost	Fair Value
Due in one year or less	\$ 1,139.4	\$ 1,139.4
Due in one to three years	599.9	593.8
Due in three to five years	651.3	646.9
Due after five years	217.5	211.8
Invested customer trust funds	\$ 2,608.1	\$ 2,591.9

6. Trade and Other Receivables, Net

The balance in trade and other receivables, net, is comprised of the following:

	December 31,	
	2018	2017
Trade receivables from customers	\$ 62.6	\$ 62.9
Interest receivable from invested customer trust funds	0.9	1.7
Other	5.5	3.7
Total gross receivables	69.0	68.3
Less: reserve for sales adjustments	(3.8)	(4.7)
Less: allowance for doubtful accounts	(1.3)	(1.3)
Trade and other receivables, net	\$ 63.9	\$ 62.3

The activity related to the allowance for doubtful accounts is as follows for each of the periods:

	Year Ended December 31,		
	2018	2017	2016
Balance at beginning of year	\$ 1.3	\$ 1.8	\$ 1.1
Provision for doubtful accounts	0.7	0.2	1.1
Charge-offs, net of recoveries	(0.7)	(0.7)	(0.4)
Balance at end of year	\$ 1.3	\$ 1.3	\$ 1.8

7. Property, Plant, and Equipment

Property, plant, and equipment consist of the following:

	December 31,	
	2018	2017
Land	\$ 7.5	\$ 7.5
Software	225.0	197.4
Machinery and equipment	117.5	120.3
Buildings and improvements	40.5	36.3
Total property, plant and equipment	390.5	361.5
Accumulated depreciation	(286.1)	(259.5)
Property, plant and equipment, net	\$ 104.4	\$ 102.0

Depreciation expense of property, plant, and equipment totaled \$38.1, \$35.3, and \$34.8 for the years ended December 31, 2018, 2017, and 2016, respectively.

8. Goodwill and Intangible Assets

Goodwill

Goodwill and changes therein were as follows for the years ended December 31, 2018, and 2017:

Balance at December 31, 2016	\$ 1,933.1
Translation	27.9
Balance at December 31, 2017	1,961.0
Translation	(33.6)
Balance at December 31, 2018	\$ 1,927.4
Tax-deductible goodwill at December 31, 2018	\$ 10.6

We perform an impairment assessment of our goodwill balances as of October 1 of each year. Goodwill impairment testing is performed at the reporting unit level, which is the operating segment level or one level below. After consideration of the LifeWorks Disposition, management has concluded that we have one reporting unit. Please refer to Note 3, "Discontinued Operations," for further discussion of the LifeWorks Disposition.

We performed a qualitative impairment test as of October 1, 2018, and concluded that it is not more likely than not that the fair value of our reporting unit is less than its carrying amount.

Intangible Assets

Other intangible assets consist of the following as of December 31, 2018:

	Gross Carrying Amount	Accumulated Amortization	Net	Estimated Life Range (Years)
Customer lists and relationships	\$ 205.4	\$ (190.2)	\$ 15.2	5-15
Tradename	173.5	(1.9)	171.6	—
Technology	152.2	(151.5)	0.7	3-4
Total other intangible assets	<u>\$ 531.1</u>	<u>\$ (343.6)</u>	<u>\$ 187.5</u>	

We perform an impairment assessment of our trade name intangible assets as of October 1 of each year. We performed the relief from royalty method impairment test as of October 1, 2018, and concluded that the fair value of our trade name intangible assets exceeded their respective carrying amount. We continue to evaluate the use of our trade names and branding in our sales and marketing efforts. If there is a fundamental shift in the method of our branding in the future, we will assess the impact on the carrying amount of our trade name intangible assets and to determine whether an impairment exists. If it is determined that an impairment has occurred, a non-cash expense would be recognized during the period in which the decision was made to make the fundamental shift.

Other intangible assets consist of the following as of December 31, 2017:

	Gross Carrying Amount	Accumulated Amortization	Net	Estimated Life Range (Years)
Customer lists and relationships	\$ 210.1	\$ (177.0)	\$ 33.1	5-15
Tradename	174.1	(2.1)	172.0	—
Technology	155.6	(154.2)	1.4	2-7
Total other intangible assets	<u>\$ 539.8</u>	<u>\$ (333.3)</u>	<u>\$ 206.5</u>	

Amortization expense related to definite-lived intangible assets was \$18.5, \$18.5, and \$18.4 for the years ended December 31, 2018, 2017, and 2016, respectively. We estimate the future amortization of other intangible assets held at December 31, 2018, will be:

Years Ending December 31,	Amount
2019	\$ 15.2
2020	0.2
2021	0.2
2022	0.2
2023	\$ 0.1

Long-Lived Assets by Geographic Area

Long-lived assets by country is as follows. Long-lived assets are comprised of property, plant and equipment, net, goodwill and other intangible assets, net.

	December 31,	
	2018	2017
United States	\$ 1,778.7	\$ 1,786.1
Canada	438.1	480.6
Other	2.5	2.8
Total long-lived assets	\$ 2,219.3	\$ 2,269.5

9. Debt

Overview

Set forth below is a description of certain debt facilities for which Ceridian was obligated during the periods covered by these consolidated financial statements. Our debt obligations consist of the following:

	December 31,	
	2018	2017
Term Debt, interest rate of 5.8% and 5.1% as of December 31, 2018 and 2017, respectively	\$ 678.3	\$ 657.3
Senior Notes, interest rate of 11.0% as of December 31, 2017	—	475.0
Revolving Credit Facility (\$300.0 available capacity less amounts reserved for letters of credit, which were \$2.7 as of December 31, 2018, and \$130.0 available capacity less amounts reserved for letters of credit, which were \$2.9 as of December 31, 2017)	—	—
Canada Line of Credit (CDN \$7.0 available capacity as of December 31, 2018 and 2017; USD \$5.1 as of December 31, 2018 and USD \$5.6 as of December 31, 2017)	—	—
Total debt	678.3	1,132.3
Less unamortized discount on Term Debt	1.7	0.9
Less unamortized debt issuance costs on Senior Notes and Term Debt	6.3	11.6
Less current portion of long-term debt	6.8	—
Long-term debt, less current portion	\$ 663.5	\$ 1,119.8

Senior Secured Credit Facilities

Principal Amounts and Maturity Dates

On November 14, 2014, the 2014 Senior Secured Credit Facility was put into place, consisting of (i) a \$702.0 term loan debt facility (the “2014 Term Debt”) and (ii) a \$130.0 revolving credit facility (the “2014 Revolving Credit Facility”). As of December 31, 2017, the 2014 Term Debt had a maturity date of September 2020, and the 2014 Revolving Credit Facility had a maturity date of September 2019. The 2014 Term Debt required quarterly principal payments of 0.25% of the original principal amount. Ceridian made mandatory pre-payments towards the principal balance of the 2014 Term Debt with the proceeds received from the sale of the UK Business during the years ended December 31, 2018, and 2017, of \$0.3 and \$25.9, respectively. These pre-payments were applied against the scheduled quarterly principal payments.

On April 30, 2018, Ceridian completed the refinancing of the remaining debt under the 2014 Senior Secured Credit Facility by entering into a new credit agreement. Pursuant to the terms of the new credit agreement, Ceridian became borrower of (i) a \$680.0 term loan debt facility (the “2018 Term Debt”) and (ii) a \$300.0 revolving credit facility (the “2018 Revolving Credit Facility”) (collectively, the “2018 Senior Secured Credit Facility”). The 2018 Senior Secured Credit Facility is secured by all assets of Ceridian.

In connection with the refinancing of the 2014 Senior Secured Credit Facility, we recognized a loss on debt extinguishment of \$7.1 within interest expense, net on our consolidated statement of operations during the year ended December 31, 2018.

Interest

The effective interest rate on the 2014 Term Debt at December 31, 2017 was 5.1%. The 2014 Term Debt had an interest rate of LIBOR plus 3.5%, subject to a 1.0% LIBOR floor.

The effective interest rate on the 2018 Term Debt at December 31, 2018 was 5.8%. The 2018 Term Debt is currently subject to an interest rate of LIBOR plus 3.25%. In the event our corporate rating from Moody's Investors Service, Inc. is B2 or better, the interest rate is reduced to LIBOR plus 3.00%, so long as the rating is maintained.

Financing Costs and Issuance Discounts

The 2014 Term Debt had associated unamortized deferred financing costs of \$5.4 at December 31, 2017 which were being amortized at the effective interest rate of 4.8%.

In connection with the refinancing of the 2014 Senior Secured Credit Facility, we capitalized \$3.6 of additional financing costs and wrote off \$0.5 of existing unamortized deferred financing costs, which was included in the loss on extinguishment of debt. The 2018 Term Debt had associated unamortized deferred financing costs of \$8.0 at December 31, 2018, which are being amortized at an effective interest rate of 5.3%.

Collateral and Guarantees

The 2018 Senior Secured Credit Facility names Ceridian as the sole borrower and is unconditionally guaranteed by Ceridian's domestic, wholly-owned financially material restricted subsidiaries, subject to certain customary exceptions. The 2018 Senior Secured Credit Facility is secured by a perfected first priority security interest, subject to certain exceptions (including customer trust funds), in substantially all of Ceridian's and the subsidiary guarantors' tangible and intangible assets. The security interest includes a pledge of the capital stock of certain of Ceridian's direct and indirect material restricted subsidiaries.

Representations, Warranties and Covenants

The documents governing the 2018 Senior Secured Credit Facility contain certain customary representations and warranties. In addition, those documents contain customary covenants restricting Ceridian's ability and certain of its subsidiaries' ability to, among other things: incur additional indebtedness, issue disqualified stock and preferred stock; create liens; declare dividends; redeem capital stock; make investments; engage in a materially different line of business; engage in certain mergers, consolidations, acquisitions, asset sales or other fundamental changes; engage in certain transactions with affiliates; enter into certain restrictive agreements; make prepayments on any subordinated indebtedness; modify junior financing documentation; and make changes to our fiscal year.

The 2018 Senior Secured Credit Facility documents contain a requirement that Ceridian maintain a ratio of adjusted first lien debt to Credit Facility EBITDA below specified levels on a quarterly basis; however, such requirement is applicable only if more than 35% of the 2018 Revolving Credit Facility is drawn. As of December 31, 2018, no portion of the 2018 Revolving Credit Facility was drawn.

Events of Default

Events of default under the 2018 Senior Secured Credit Facility documents include, but are not limited to: failure to pay interest, principal and fees or other amounts when due; material breach of any representation or warranty; covenant defaults; cross defaults to other material indebtedness; events of bankruptcy, invalidity of security interests; a change of control; material judgments for payment of money; involuntary acceleration of any debt; and other customary events of default. There were no events of default as of December 31, 2018.

Senior Notes

General Description

On October 1, 2013, Ceridian issued the Senior Notes due 2021 in the principal amount of \$475.0.

Using the net proceeds received from the IPO and concurrent private placement, we satisfied and discharged the indenture governing the Senior Notes on April 30, 2018, and the Senior Notes were redeemed on May 30, 2018. In connection with the redemption of the Senior Notes, we recognized a loss on extinguishment of debt of \$18.6 within interest expense, net on our consolidated statement of operations during the year ended December 31, 2018.

Interest

The interest rate on the Senior Notes was fixed at 11.0% as of December 31, 2017.

Financing Costs and Issuance Discounts

The Senior Notes had unamortized deferred financing costs of \$6.2 at December 31, 2017, which were being amortized at an effective interest rate of 11.45%. On May 30, 2018, the redemption date, the Senior Notes had unamortized deferred financing costs of \$5.5, which were written off and included in the loss on extinguishment of debt.

Other Information Relating to Indebtedness

Future Payments and Maturities of Debt

The future principal payments and maturities of our indebtedness are as follows:

Years Ending December 31,	Amount
2019	\$ 6.8
2020	6.8
2021	6.8
2022	6.8
2023	6.8
Thereafter	644.3
	<u>\$ 678.3</u>

Ceridian may be required to make additional payments on the 2018 Term Debt from various sources, including proceeds of certain indebtedness which may be incurred from time to time, certain asset sales and a certain percentage of cash flow. There is an excess cash flow calculation associated with the 2018 Term Debt commencing with the year ending December 31, 2019.

Fair Value of Debt

Our debt does not trade in active markets. Based on the borrowing rates currently available to us for bank loans with similar terms and average maturities and the limited trades of our debt, the fair value of our indebtedness was estimated to be \$649.5 and \$1,154.1 as of December 31, 2018, and 2017, respectively.

Other Debt Financing

Ceridian Canada had available at December 31, 2018, and 2017, a committed bank credit facility that provides up to CDN \$7.0, for issuance of letters of credit, and it is a discretionary line at the option of the bank. The amounts of letters of credit outstanding under this facility were CDN \$7.0 (USD \$5.1) and CDN \$7.0 (USD \$5.6) at December 31, 2018, and 2017, respectively.

10. Employee Benefit Plans

Ceridian maintains numerous benefit plans for current and former employees. As of December 31, 2018, our current active benefit plans include defined contributions plans for substantially all employees. All defined benefit plans have been frozen.

Defined Contribution Plans

Ceridian maintains defined contribution plans that provide retirement benefits to substantially all of our employees. Contributions are based upon the contractual obligations of each respective plan. We recognized expense of \$8.4, \$7.5, and \$7.0 for the years ended December 31, 2018, 2017, and 2016, respectively, with regard to employer contributions to these plans.

Defined Benefit Plans

Ceridian maintains defined benefit pension plans covering certain of our current and former U.S. employees (the U.S. defined benefit plan and nonqualified defined benefit plan, collectively referred to as our “defined benefit plans”), as well as other postretirement benefit plans for certain U.S. retired employees that include health care and life insurance benefits.

Pension Benefits

The largest defined benefit pension plan (the “U.S. defined benefit plan”) is a defined benefit plan for certain current and former U.S. employees that closed to new participants on January 2, 1995. In 2007, the U.S. defined benefit plan was amended (1) to exclude from further participation any participant or former participant who was not employed by the Parent or another participating employer on January 1, 2008, (2) to discontinue participant contributions, and (3) to freeze the accrual of additional benefits as of December 31, 2007. The measurement date for pension benefit plans is December 31.

Assets of the U.S. defined benefit plan are held in an irrevocable trust and do not include any Ceridian securities. Benefits under this plan are generally calculated on final or career average earnings and years of participation in the plan. Most participating employees were required to permit salary reduction contributions to the plan on their behalf by the employer as a condition of active participation. Retirees and other former employees are inactive participants in this plan and constitute approximately 99% of the plan participants. This plan is funded in accordance with funding requirements under the Employee Retirement Income Security Act of 1974, based on determinations of a third-party consulting actuary. Investment of the U.S. defined benefit plan assets in Ceridian securities is prohibited by the investment policy. We made contributions amounting to \$18.5 in 2018 to the U.S. defined benefit plan. The required minimum contributions to the U.S. benefit plan are expected to be \$6.4 during 2019.

Ceridian also sponsors a nonqualified supplemental defined benefit plan (the “nonqualified defined benefit plan”), which is unfunded and provides benefits to selected U.S. employees in addition to the U.S. defined benefit plan. We made contributions to the nonqualified defined benefit plan amounting to \$1.9 in 2018 and expect to make contributions of \$1.7 during 2019.

We account for our defined benefit plans using actuarial models. These models use an attribution approach that generally spreads the effect of individual events over the estimated life expectancy of the employees in such plans. These events include plan amendments and changes in actuarial assumptions such as the expected long-term rate of return on plan assets, discount rate related to the benefit obligation, and mortality rates.

One of the principal components of the net periodic pension calculation is the expected long-term rate of return on plan assets. The required use of expected long-term rate of return on plan assets may result in recognized pension income that is greater or less than the actual returns of those plan assets in any given year. Over time, however, the expected long-term returns are designed to approximate the actual long-term returns that contribute to the settlement of the liability. Differences between actual and expected returns are recognized in the net periodic pension calculation over three years. We use long-term historical actual return information, the mix of investments that comprise plan assets, and future estimates of long-term investment returns by reference to external sources to develop our expected return on plan assets.

The discount rate assumption is used to determine the benefit obligation and the interest portion of the net periodic pension cost (credit) for the following year. We utilize a full yield curve approach for our discount rate assumption by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. As of December 31, 2018, a 25 basis point decrease in the discount rate would result in a \$0.1 decrease to expense for all pension plans.

At December 31, 2017, we updated our mortality assumptions utilizing an improvement scale issued by the Society of Actuaries in October 2017, which resulted in a \$6.0 reduction in the projected benefit obligation. At December 31, 2018, we updated our mortality assumptions utilizing an improvement scale issued by the Society of Actuaries in October 2018, which resulted in a \$1.5 reduction in the projected benefit obligation.

The funded status of defined benefit plans represents the difference between the projected benefit obligation and the plan assets at fair value. The projected benefit obligation of defined benefit plans exceeded the fair value of plan assets by \$145.8 and \$154.4 at December 31, 2018 and 2017, respectively. We are required to record the unfunded status as a liability in our consolidated balance sheets and recognize the change in the funded status in comprehensive income, net of deferred income taxes.

The projected future payments to participants from defined benefit plans are included in the table below.

Years Ending December 31,	Amount
2019	\$ 46.0
2020	45.0
2021	44.0
2022	42.7
2023	41.5
Next five years	\$ 183.5

The accompanying tables reflect the combined funded status and net periodic pension cost and combined supporting assumptions for the defined benefit elements of our defined benefit plans.

	Year Ended December 31,	
	2018	2017
Funded Status of Defined Benefit Retirement Plans at Measurement Date		
Change in Projected Benefit Obligation During the Year:		
Projected benefit obligation at beginning of year	\$ 593.0	\$ 605.9
Service cost	—	—
Interest cost	16.3	17.2
Actuarial (gain) loss	(31.6)	20.3
Benefits paid and plan expenses	(50.3)	(50.4)
Projected benefit obligation at end of year	\$ 527.4	\$ 593.0
Change in Fair Value of Plan Assets During the Year:		
Plan assets at fair value at beginning of year	438.6	416.4
Actual return on plan assets	(27.1)	49.6
Employer contributions	20.4	23.0
Benefits paid and plan expenses	(50.3)	(50.4)
Plan assets at fair value at end of year	381.6	438.6
Funded status of plans	\$ (145.8)	\$ (154.4)
	December 31,	
	2018	2017
Amounts recognized in Consolidated Balance Sheets		
Current liability	\$ 8.1	\$ 20.3
Noncurrent liability	137.7	134.1
Amounts recognized in Accumulated Other Comprehensive Loss		
Accumulated other comprehensive loss, net of tax of \$91.5 and \$91.5, respectively	\$ 158.6	\$ 151.4

The other comprehensive (income) loss related to pension benefit plans is as follows:

	Year Ended December 31,		
	2018	2017	2016
Net actuarial loss (gain)	\$ 21.4	\$ (3.0)	\$ 9.5
Amortization of net actuarial loss	(14.2)	(12.8)	(12.5)
Tax expense	—	—	0.1
Other comprehensive income, net of tax	<u>\$ 7.2</u>	<u>\$ (15.8)</u>	<u>\$ (2.9)</u>

	Year Ended December 31,		
	2018	2017	2016
Assumptions Used in Calculations			
Discount rate used to determine net benefit cost	3.25%	3.63%	3.76%
Expected return on plan assets	6.30%	6.30%	6.30%
Discount rate used to determine benefit obligations%	3.92%	3.25%	3.63%

	Year Ended December 31,		
	2018	2017	2016
Net Periodic Pension Cost			
Interest cost	\$ 16.3	\$ 17.2	\$ 18.2
Actuarial loss amortization	14.2	12.8	12.5
Less: Expected return on plan assets	(25.8)	(26.3)	(25.7)
Net periodic pension cost	<u>\$ 4.7</u>	<u>\$ 3.7</u>	<u>\$ 5.0</u>

The accumulated benefit obligation of defined benefit plans was \$527.4 and \$593.0 as of December 31, 2018 and 2017, respectively.

The amount in accumulated other comprehensive loss that is expected to be recognized as a component of net periodic pension cost during 2019 is a net actuarial loss of \$12.7.

Our overall investment strategy for the U.S. defined benefit plan is to achieve a mix of approximately 70% of investments for long term growth, 28% for liability hedging purposes and 2% for near-term benefit payments. Target asset allocations are based upon actuarial and capital market studies performed by experienced outside consultants. The target allocations for the growth assets are 41% fixed income, 26% international equities, 23% domestic equities and 10% hedge funds. Specifically, the target allocation is managed through investments in fixed income securities, equity funds, collective investment funds, partnerships and other investment types. The underlying domestic equity securities include exposure to large/mid-cap companies and small-cap companies. Fixed income securities include corporate debt, mortgage-backed securities, U.S. Treasury and U.S. agency debt, emerging market debt and high yield debt securities. The alternative investment strategy is allocated to investments in hedge funds. The liability hedging portfolio fair value is intended to move in a direction that partially offsets the increase or decrease in the liabilities resulting from changes in interest rates. To achieve this objective, the portfolio will invest in U.S. Treasury strips and various interest rate derivatives contracts. We hire outside managers to manage all assets of the U.S. defined benefit plan.

In determining the fair values of the defined benefit plan's assets, we calculate the fair value of certain investments using net asset value ("NAV") per share. Collective investment funds are valued at the NAV, which is based on the readily determinable fair value of the underlying securities owned by the fund. The NAV unit price is quoted on a private market or one that is not active. Partnerships consist primarily of a bond fund partnership valued at the NAV as reported by the fund manager and an investment in a venture capital fund valued by an independent appraisal. The NAV represents the value at which the defined benefit plan initiates a transaction. These investments do not have any significant unfunded commitments, conditions or restrictions on redemption, or any other significant restriction on their sale. The hedge fund of funds investment has a quarterly redemption restriction with a 65 day notice period. Plan investments with estimated fair value using NAV were \$212.6 and \$280.6 as of December 31, 2018 and 2017, respectively.

The fair values of the defined benefit plan's assets at December 31, 2018, by asset category are as follows:

	Total	Level 1	Level 2	Level 3
Investments, at fair value:				
Short-term investments	\$ 57.9	\$ 57.9	\$ —	\$ —
Derivatives (a)	—	—	—	—
Government securities	92.4	—	92.4	—
Corporate debt securities	18.7	—	18.7	—
Collective investment funds:				
Domestic equity (b)	80.1	—	80.1	—
Foreign equity (b)	48.5	—	48.5	—
Foreign bond (c)	23.8	—	23.8	—
Partnerships (d)	32.1	—	32.1	—
Hedge fund of funds (e)	28.1	—	28.1	—
Total investments, at fair value	<u>\$ 381.6</u>	<u>\$ 57.9</u>	<u>\$ 323.7</u>	<u>\$ —</u>

The fair values of our defined benefit plan's assets at December 31, 2017, by asset category are as follows:

	Total	Level 1	Level 2	Level 3
Investments, at fair value:				
Short-term investments	\$ 36.8	\$ 36.8	\$ —	\$ —
Derivatives (a)	14.8	—	14.8	—
Government securities	88.1	—	88.1	—
Corporate debt securities	18.3	—	18.3	—
Collective investment funds:				
Domestic equity (b)	144.4	—	144.4	—
Foreign equity (b)	57.5	—	57.5	—
Foreign bond (c)	41.8	—	41.8	—
Partnerships (d)	35.3	—	35.3	—
Hedge fund of funds (e)	1.6	—	1.6	—
Total investments, at fair value	<u>\$ 438.6</u>	<u>\$ 36.8</u>	<u>\$ 401.8</u>	<u>\$ —</u>

- (a) Funds in this category invest in futures (2018) and interest rate swaps (2017) to reduce exposure to long-term interest rate risk and to achieve overall investment portfolio objectives. The future derivatives are marked to market and settled in cash on a daily basis.
- (b) Funds in this category invest in a diversified portfolio of domestic and/or foreign stocks to achieve a long-term rate of return.
- (c) Funds in this category invest in various types of domestic and/or foreign debt securities to achieve a long-term rate of return while preserving capital.
- (d) Funds within this category invest in a bond fund partnership which holds various types of domestic debt securities to achieve a long-term rate of return while preserving capital.
- (e) Funds within this category invest in various underlying hedge funds and are designed to provide superior risk adjusted returns as well as portfolio diversification relative to traditional asset classes.

Postretirement Benefits

Ceridian provides health care and life insurance benefits for eligible retired employees, including individuals who retired from operations we subsequently sold or discontinued. Ceridian sponsors several health care plans in the United States for both pre- and post-age 65 retirees. The contributions to these plans differ for various groups of retirees and future retirees. Most retirees outside of the United States are covered by governmental health care programs, and our cost is not significant. The measurement date for postretirement benefit plans is December 31.

The discount rate assumption is used to determine the benefit obligation and the interest portion of the net periodic postretirement cost (credit) for the following year. We utilize a full yield curve approach for our discount rate assumption by applying the specific spot rates along the yield curve used in the determination of the benefit obligation to the relevant projected cash flows. As of December 31, 2018, a 25 basis point decrease in the discount rate would result in an immaterial impact on expense for the postretirement plan.

The accompanying tables present the amounts and changes in the aggregate benefit obligation and the components of net periodic postretirement benefit cost for U.S. plans. We fund these costs as they become due.

	Year Ended December 31,	
	2018	2017
Funded Status of Postretirement Health Care and Life Insurance Plans		
Change in Benefit Obligation:		
At beginning of year	\$ 19.6	\$ 21.0
Interest cost	0.5	0.5
Participant contributions	0.5	1.1
Actuarial gain	(2.1)	(0.7)
Benefits paid	(1.7)	(2.3)
At end of year	<u>\$ 16.8</u>	<u>\$ 19.6</u>
Change in Plan Assets:		
At beginning of year	\$ —	\$ —
Company contributions	1.2	1.2
Participant contributions	0.5	1.1
Benefits paid	(1.7)	(2.3)
At end of year	<u>—</u>	<u>—</u>
Funded Status	<u>\$ (16.8)</u>	<u>\$ (19.6)</u>
	December 31,	
	2018	2017
Amounts recognized in Consolidated Balance Sheets		
Current liability	\$ 2.2	\$ 2.4
Noncurrent liability	14.6	17.2
Amounts recognized in Accumulated Other Comprehensive Loss		
Accumulated other comprehensive income, net of tax of \$(9.9) and \$(9.9), respectively	\$ (8.5)	\$ (8.9)

The other comprehensive (income) loss related to postretirement benefits is as follows:

	Year Ended December 31,		
	2018	2017	2016
Net actuarial gain	\$ (2.1)	\$ (0.7)	\$ (1.4)
Amortization of net actuarial gain	2.5	2.7	2.6
Tax expense	—	—	—
Other comprehensive loss (income), net of tax	<u>\$ 0.4</u>	<u>\$ 2.0</u>	<u>\$ 1.2</u>

	Year Ended December 31,		
	2018	2017	2016
Net Periodic Postretirement Benefit			
Service cost	\$ —	\$ —	\$ —
Interest cost	0.5	0.5	0.6
Actuarial gain amortization	(2.2)	(2.4)	(2.3)
Prior service credit amortization	(0.3)	(0.3)	(0.3)
Net periodic postretirement benefit gain	<u>\$ (2.0)</u>	<u>\$ (2.2)</u>	<u>\$ (2.0)</u>

The amount in accumulated other comprehensive loss that is expected to be recognized as a component of net periodic postretirement benefit cost during 2019 is a \$2.6 gain, comprised of \$2.3 of actuarial gain and \$0.3 of prior service credit.

The assumed health care cost trend rate represents the rate at which health care costs are assumed to increase. The assumed health care cost trend rate used in measuring the benefit obligation in 2018 is 6.90% for pre-age 65 retirees and 7.70% for post-age 65 retirees. These rates are assumed to decrease gradually to the ultimate health care cost trend rate of 4.5% in 2028 for both groups. A one percent increase in this rate would increase the benefit obligation at December 31, 2018, by \$0.7 and would have an immaterial impact on the interest cost for 2018. A one percent decrease in this rate would decrease the benefit obligation at December 31, 2018, by \$0.6 and would have an immaterial impact on the interest cost for 2018.

	Year Ended December 31,		
	2018	2017	2016
Assumptions Used in Calculations			
Weighted average discount rate used to determine net periodic postretirement cost (credit)	3.01%	3.26%	3.38%
Weighted average discount rate used to determine benefit obligation at measurement date	3.70%	3.01%	3.26%

The projected future postretirement benefit payments and future receipts from the federal subsidy for each of the next five years and the five-year period following are included in the table below.

Years Ending December 31,	Payments		Receipts	
2019	\$	2.2	\$	0.1
2020		1.9		0.1
2021		1.9		—
2022		1.8		—
2023		1.6		0.1
Next five years	\$	6.2	\$	0.1

11. Share-Based Compensation

Prior to November 1, 2013, Ceridian employees participated in a share-based compensation plan of the ultimate parent of Ceridian. The 2007 Stock Incentive Plan (“2007 SIP”) authorized the issuance of up to 10,540,540 shares of common stock of Parent to eligible participants through stock options and stock awards. Eligible participants in the 2007 SIP included the Parent’s directors, employees and consultants.

Effective November 1, 2013, most participants who held stock options under the 2007 SIP converted their options to a newly created option plan, the 2013 Ceridian HCM Holding Inc. Stock Incentive Plan (“2013 SIP”). A small number of participants maintained their stock options in the 2007 SIP. As of December 31, 2018, there were 5,000 stock options outstanding under the 2007 SIP.

The 2013 SIP authorized the issuance of up to 12,500,000 shares of common stock of Ceridian to eligible participants through stock options and other stock awards, which was increased to 15,000,000 on March 20, 2017, by the Board of Directors. Eligible participants in the 2013 HCM SIP include Ceridian’s directors, employees, and consultants.

As part of the 2013 SIP, the Board of Directors approved a stock appreciation rights program that authorized the issuance of up to 600,000 stock appreciation rights. The performance criteria for all stock appreciation rights was met on April 30, 2018, resulting in the vesting and cash settlement of all outstanding stock appreciation rights. We recognized \$1.5 of share-based compensation expense related to the vesting of these stock appreciation rights during the year ended December 31, 2018. As of December 31, 2018, there were no remaining outstanding stock appreciation rights.

Stock options awarded under the 2013 SIP vest either annually on a pro rata basis over a four- or five-year period or on a specific date if certain performance criteria are satisfied and certain equity values are attained. In addition, upon termination of service, all vested options must be exercised generally within 90 days after termination, or these awards will be forfeited. The stock option awards have a 10-year contractual term and have an exercise price that is not less than the fair market value of the underlying stock on the date of grant. As of December 31, 2018, there were 9,356,904 stock options and restricted stock units outstanding under the 2013 SIP. We do not intend to grant any additional awards under the 2007 SIP or the 2013 SIP following our IPO.

On April 24, 2018, in connection with the IPO, the Board of Directors approved the Ceridian HCM Holding Inc. 2018 Equity Incentive Plan (“2018 EIP”), which authorizes the issuance of up to 13,500,000 shares of common stock to eligible participants through equity awards. Equity awards under the 2018 EIP vest annually on a pro rata basis, generally over a four-year period. In addition, upon termination of service, all vested awards must be exercised within 90 days after termination, or these awards will be forfeited. The equity awards have a 10-year contractual term and have an exercise price that is not less than the fair market value of the underlying stock on the date of the grant. As of December 31, 2018, there were 5,218,315 stock options and restricted stock units outstanding and 8,281,685 shares available for future grants of equity awards under the 2018 EIP.

On November 9, 2018, the Compensation Committee of the Board of Directors approved the Ceridian HCM Holding Inc. Global Employee Stock Purchase Plan (the “GESPP”), which authorizes the issuance of up to 2,500,000 shares of common stock to eligible participants through purchases via payroll deductions at a discount to the fair market value of our common stock. The GESPP has a 10-year contractual term, and purchases will commence in 2019, subject to approval by the Company’s stockholders.

Share-based compensation expense was \$24.7, \$16.1, and \$12.5 for the years ended December 31, 2018, 2017, and 2016, respectively.

Performance-Based Stock Options

Performance-based option activity under the 2007 SIP and the 2013 SIP for the periods presented was as follows:

	Shares	Weighted Average Exercise Price (per share)	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Options outstanding at December 31, 2015	1,283,368	\$ 13.46	5.2	\$ —
Granted	—	—	—	—
Exercised	—	—	—	—
Forfeited or expired	(52,942)	(13.46)	—	—
Options outstanding at December 31, 2016	1,230,426	\$ 13.46	4.2	\$ —
Granted	—	—	—	—
Exercised	(167,202)(a)	(13.46)	—	—
Forfeited or expired	(25,077)	(13.46)	—	—
Options outstanding at December 31, 2017	1,038,147	\$ 13.46	3.5	\$ —
Granted	—	—	—	—
Exercised	(663,412)	(13.46)	—	—
Forfeited or expired	(8,358)	(13.46)	—	—
Options outstanding at December 31, 2018	366,377	\$ 13.50	3.1	\$ 7.7
Options exercisable at December 31, 2018	366,377	\$ 13.50	3.1	\$ 7.7

(a) During the year ended December 31, 2017, certain performance-based options were modified and exercised.

The performance criteria for all outstanding performance-based stock options was met on June 7, 2018, resulting in the vesting of all outstanding performance-based stock options on this date. We recognized \$4.8 of share-based compensation expense related to the vesting of these performance-based stock options during the year ended December 31, 2018. As of December 31, 2018, there was no share-based compensation expense related to unvested performance-based stock options not yet recognized.

Term-Based Stock Options

Term-based option activity, including stock options under the 2007 SIP, the 2013 SIP and the 2018 EIP, for the periods presented was as follows:

	Shares	Weighted Average Exercise Price (per share)	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Options outstanding at December 31, 2015	7,609,658	\$ 16.02	7.3	\$ 14.1
Granted	2,339,238	16.80	—	—
Exercised	—	—	—	—
Forfeited or expired	(176,626)	(16.54)	—	—
Options outstanding at December 31, 2016	9,772,270	\$ 16.20	7.1	\$ 9.9
Granted	2,285,981	17.46	—	—
Exercised	(595,464)	(15.14)	—	—
Forfeited or expired	(468,606)	(16.10)	—	—
Options outstanding at December 31, 2017	10,994,181	\$ 16.52	6.9	\$ 48.8
Granted	5,236,037	23.07	—	—
Exercised	(2,501,983)	(15.26)	—	—
Forfeited or expired	(178,466)	(17.30)	—	—
Options outstanding at December 31, 2018	13,549,769	\$ 19.28	7.5	\$ 206.8
Options exercisable at December 31, 2018	5,731,295	\$ 16.75	5.7	\$ 101.7

Other information pertaining to term-based options is as follows:

	Year Ended December 31,		
	2018	2017	2016
Weighted average grant date fair value per share	\$ 7.80	\$ 5.88	\$ 5.74

The fair value of the term-based stock options was estimated at the date of grant using the Black-Scholes option pricing model with the following weighted-average assumptions:

	Year Ended December 31,		
	2018	2017	2016
Expected volatility	25.0%	30.0%	30.0%
Expected dividend rate	—	—	—
Risk-free interest rate	2.9%	2.3%	1.9%

For stock options granted under the 2007 SIP, we used the simplified method to estimate the expected term of the stock options. For stock options granted under the 2013 SIP and 2018 EIP, we estimated an expected term of 7.0 years, based on the vesting period and contractual life. As of December 31, 2018, there was \$46.6 of share-based compensation expense related to unvested term-based awards not yet recognized, which is expected to be recognized over a weighted average period of 1.8 years. As of December 31, 2018, there were 5,731,295 vested term-based stock options.

Restricted Stock Units

Restricted stock units (“RSUs”) activity, including RSUs under the 2013 SIP and the 2018 EIP, for the periods presented was as follows:

	<u>Shares</u>
RSUs outstanding at December 31, 2015	228,572
Granted	29,800
Shares issued upon vesting of RSUs	(76,192)
Forfeited or canceled	—
RSUs outstanding at December 31, 2016	182,180
Granted	500,000
Shares issued upon vesting of RSUs	(76,190)
Forfeited or canceled	—
RSUs outstanding at December 31, 2017	605,990
Granted	164,073
Shares issued upon vesting of RSUs	(105,990)
Forfeited or canceled	—
RSUs outstanding at December 31, 2018	664,073
RSUs releasable at December 31, 2018	125,000

Other information pertaining to restricted stock units is as follows:

	<u>Year Ended December 31,</u>		
	<u>2018</u>	<u>2017</u>	<u>2016</u>
Weighted average grant date fair value per share	\$ 35.55	\$ 17.26	\$ 17.40

During the year ended December 31, 2018, 230,990 RSUs vested, of which 105,990 shares of common stock were issued, and 125,000 RSUs remained vested and releasable. Restricted stock units generally vest annually over a three- or four-year period. As of December 31, 2018, there was \$9.9 of share-based compensation expense related to unvested restricted stock units not yet recognized, which is expected to be recognized over a weighted average period of 2.9 years.

12. Revenue

Our Solutions

We categorize our solutions into two categories: Cloud and Bureau offerings.

- Cloud revenue is generated from solutions that are delivered via two cloud offerings, Dayforce and Powerpay. The Dayforce offering is differentiated from our market competition as being a single application with continuous calculation that offers a comprehensive range of functionality, including global HR, payroll, benefits, workforce management, and talent management on web and native iOS and Android platforms. Dayforce revenue is primarily generated from monthly recurring fees charged on a per-employee, per-month (“PEPM”) basis, generally one-month in advance of service. Also included within Dayforce revenue are implementation, staging, and other professional services revenue; revenues from the sale, rental, and maintenance of time clocks for Dayforce customers; and billable travel expenses associated with professional services for Dayforce customers. The Powerpay offering is our solution designed primarily for small market Canadian customers. The typical Powerpay customer has fewer than 20 employees, and the majority of the revenue is generated from recurring fees charged on a per-employee, per-process basis. Typical processes include the customer’s payroll runs, year-end tax packages, and delivery of customers’ remittance advices or checks. In addition to the direct revenue earned from the Dayforce and Powerpay offerings, Cloud revenue also includes investment income generated from holding Cloud customer funds in trust before funds are remitted to taxing authorities, Cloud customer employees, or other third parties; and revenue from the sale of third party services.

- Bureau revenue is generated primarily from solutions delivered via a service-bureau model. These solutions are delivered via three primary service lines: payroll, payroll-related tax filing services, and outsourced human resource solutions. Revenue from payroll services is generated from recurring fees charged on a per-process basis. Typical processes include the customer's payroll runs, year-end tax packages, and delivery of customers' remittance advices or checks. In addition to customers who use our payroll services, certain customers use our tax filing services on a stand-alone basis. Our outsourced human resource solutions are tailored to meet the needs of individual customers, and entail our contracting to perform many of the duties of a customer's human resources department, including payroll processing, time and labor management, performance management, and recruiting. We also perform individual services for customers, such as check printing, wage attachment and disbursement, and Affordable Care Act ("ACA") management. Additional items included in Bureau revenue are fees for custom professional services to Bureau customers; investment income generated from holding Bureau customer funds in trust before funds are remitted to taxing authorities, Bureau customer employees, or other third parties; consulting services related to Bureau offerings; and revenue from the sale of third party services to Bureau customers.

Customer Information

No single customer accounts for 1% or more of our consolidated revenue for any of the periods presented.

Disaggregation of Revenue

Revenue by solution and category is as follows:

	Year Ended December 31,		
	2018	2017	2016
Cloud recurring services revenue	\$ 415.7	\$ 311.6	\$ 219.6
Cloud professional services revenue	113.1	98.3	86.9
Total Cloud revenue	528.8	409.9	306.5
Bureau recurring services revenue	209.3	262.3	317.9
Bureau professional services revenue	2.6	4.0	5.7
Total Bureau revenue	211.9	266.3	323.6
Total revenue	\$ 740.7	\$ 676.2	\$ 630.1

Cloud revenue by offering is as follows:

	Year Ended December 31,		
	2018	2017	2016
Dayforce	\$ 437.5	\$ 325.5	\$ 227.7
Powerpay	91.3	84.4	78.8
Total Cloud	\$ 528.8	\$ 409.9	\$ 306.5

Revenue by Geographic Area

Revenue by country is as follows. The country in which the revenue is recorded is determined by the legal entity with which the customer has contracted.

	Year Ended December 31,		
	2018	2017	2016
United States	\$ 513.8	\$ 469.0	\$ 437.3
Canada	224.0	205.2	191.0
Other	2.9	2.0	1.8
Total revenue	\$ 740.7	\$ 676.2	\$ 630.1

Contract Balances

The Company records a contract asset when revenue recognized for professional service performance obligations exceed the billings. Contract assets were \$40.0 and \$41.1 as of December 31, 2018, and 2017, respectively. Contract assets expected to be recognized in revenue within twelve months are included within Prepaid expenses and other current assets, with the remaining contract assets included within Other assets on our condensed consolidated balance sheets.

Deferred Revenue

Deferred revenue primarily consists of billings or payments received in advance of revenue recognition. The changes in deferred revenue were as follows:

	December 31,	
	2018	2017
Deferred revenue, beginning of period	\$ 16.5	\$ 11.8
New billings	259.1	208.8
Revenue recognized	(252.0)	(204.3)
Effect of exchange rate	(0.4)	0.2
Deferred revenue, end of period	\$ 23.2	\$ 16.5

Transaction Price for Remaining Performance Obligations

In accordance with ASC Topic 606, the following represents the aggregate amount of transaction price allocated to the remaining performance obligations that are unsatisfied as of the end of the reporting period. As of December 31, 2018, approximately \$793.9 of revenue is expected to be recognized over the next three years from remaining performance obligations, which represents contracted revenue for recurring services and fixed price professional services, primarily implementation services, that has not yet been recognized, including deferred revenue and unbilled amounts that will be recognized as revenue in future periods. In accordance with the practical expedient provided in ASC Topic 606, performance obligations that are billed and recognized as they are delivered, primarily professional services contracts that are on a time and materials basis, are excluded from the transaction price for remaining performance obligations disclosed above.

13. Supplementary Data to Statements of Operations

	Year Ended December 31,		
	2018	2017	2016
Other (Income) Expense, Net			
Asset impairment	\$ —	\$ —	\$ 10.4
Environmental reserve	—	—	5.9
Foreign currency translation (income) expense	(2.9)	7.3	(3.4)
Net periodic benefit plan expense, excluding service costs	2.7	1.5	3.0
Total other (income) expense, net	\$ (0.2)	\$ 8.8	\$ 15.9

Asset Impairment

The sale of the UK Business in 2016 was considered a triggering event to test the trade name intangible asset for impairment. Given the reduction in future revenues of the UK Business previously included in the relief from royalty models used to support the trade name value, we recorded an impairment charge during the year ended December 31, 2016, of \$10.2 to the trade name intangible asset. The remaining impairment amount is related to immaterial asset write-offs.

Environmental Reserve

In September 1989, Parent's predecessor entered into an Environmental Matters Agreement ("EMA") with Seagate Technology plc ("Seagate") related to groundwater contamination on a parcel of real estate sold by Parent's predecessor to Seagate. Ceridian is now responsible for the EMA. The EMA requires expense sharing between Ceridian and Seagate for the remediation of groundwater contamination up to a certain limit. Based on additional information obtained with respect to more stringent remediation requirements, we updated our estimate of the potential liability related to the EMA, resulting in an increase to the environmental reserve of \$5.9 during the year ended December 31, 2016, which represented the limit under the EMA. Please refer to Note 16, "Commitments and Contingencies," for further discussion of our environmental liabilities.

Foreign Currency Translation (Income) Expense

We had foreign currency translation income of \$2.9 for the year ended December 31, 2018. The foreign currency translation income for the year ended December 31, 2018, was primarily related to foreign currency remeasurement gains resulting from an intercompany payable of a U.S. operating subsidiary which is repaid in Canadian dollars. This intercompany payable was repaid in the second quarter of 2018.

We incurred foreign currency translation expense of \$7.3 for the year ended December 31, 2017. The foreign currency translation expense for the year ended December 31, 2017, was primarily related to foreign currency remeasurement losses resulting from an intercompany payable of a U.S. operating subsidiary which is repaid in Canadian dollars.

We had foreign currency translation income of \$3.4 for the year ended December 31, 2016. The foreign currency translation income for the year ended December 31, 2016, was primarily related to foreign currency remeasurement gains on intercompany receivables and payables between international subsidiaries that were settled in early 2017.

Net Periodic Benefit Plan Expense, Excluding Service Costs

Net periodic benefit plan expense, excluding service cost for the years ended December 31, 2018, 2017, and 2016, is related to our pension and postretirement benefit plans. Please refer to Note 10, "Employee Benefit Plans," for further discussion regarding our pension and postretirement benefit plans.

14. Accumulated Other Comprehensive Income (Loss)

The components of accumulated other comprehensive income (loss) were as follows:

	Foreign Currency Translation Adjustment	Unrealized Gain (Loss) from Invested Customer Trust Funds	Pension Liability Adjustment	Total
Balance as of December 31, 2016	\$ (199.7)	\$ 4.7	\$ (156.3)	\$ (351.3)
Other comprehensive income (loss) before income taxes and reclassifications	40.2	(17.3)	3.7	26.6
Income tax benefit	—	3.6	—	3.6
Reclassifications to earnings	—	—	10.1	10.1
Other comprehensive income (loss) attributable to Ceridian	40.2	(13.7)	13.8	40.3
Balance as of December 31, 2017	(159.5)	(9.0)	(142.5)	(311.0)
Other comprehensive loss before income taxes and reclassifications	(48.7)	(10.5)	(19.3)	(78.5)
Income tax benefit	—	1.2	—	1.2
Reclassifications to earnings	—	—	11.7	11.7
Other comprehensive (loss) income attributable to Ceridian	(48.7)	(9.3)	(7.6)	(65.6)
LifeWorks Disposition	0.7	—	—	0.7
Balance as of December 31, 2018	<u>\$ (207.5)</u>	<u>\$ (18.3)</u>	<u>\$ (150.1)</u>	<u>\$ (375.9)</u>

15. Income Taxes

	Year Ended December 31,		
	2018	2017	2016
Components of Earnings and Taxes from Operations			
(Loss) Income Before Income Taxes:			
U.S.	\$ (71.4)	\$ (73.9)	\$ (153.1)
International	44.5	33.4	69.0
Total	<u>\$ (26.9)</u>	<u>\$ (40.5)</u>	<u>\$ (84.1)</u>
Income Tax Expense (Benefit):			
Current:			
U.S.	\$ 3.8	\$ (0.3)	\$ (0.4)
State and local	0.3	0.1	0.2
International	20.4	12.9	15.1
Total current income tax expense	<u>24.5</u>	<u>12.7</u>	<u>14.9</u>
Deferred:			
U.S.	(14.1)	(60.3)	(15.7)
State and local	(2.2)	0.8	(0.1)
International	0.2	(1.7)	8.6
Total deferred income tax (benefit) expense	<u>(16.1)</u>	<u>(61.2)</u>	<u>(7.2)</u>
Total income tax expense (benefit)	<u>\$ 8.4</u>	<u>\$ (48.5)</u>	<u>\$ 7.7</u>

	Year Ended December 31,		
	2018	2017	2016
Effective Rate Reconciliation			
U.S. statutory rate%	(21.0)%	(35.0)%	(35.0)%
Change in valuation allowance	10.8	(154.6)	(11.2)
State income taxes, net of federal benefit	(31.2)	(5.9)	(1.0)
Share-based compensation	(10.0)	11.1	3.1
International tax rate differential	13.4	(9.6)	(8.0)
Foreign dividend income	20.1	64.2	1.2
Foreign capital gain income	7.1	—	—
Unremitted foreign earnings	4.1	(47.7)	25.8
Global intangible low-taxed income	23.0	—	—
Base erosion tax	14.1	—	—
Reserve for tax contingencies	0.4	—	(0.2)
Expiration of un-utilized tax credits	—	2.0	—
Unrealized gain on investments	—	—	36.1
Change in tax rate	(5.9)	59.5	—
Other	6.3	(3.8)	(1.7)
Income tax provision%	<u>31.2%</u>	<u>(119.8)%</u>	<u>9.1%</u>

Our income tax provision represents federal, state, and international taxes on our income recognized for financial statement purposes and includes the effects of temporary differences between financial statement income and income recognized for tax return purposes. Deferred tax assets and liabilities are recorded for temporary differences between the financial reporting basis and the tax basis of assets and liabilities as adjusted for the expected benefits of utilizing net operating loss carryforwards. We record a valuation allowance to reduce our deferred tax assets to reflect the net deferred tax assets that we believe will be realized. In assessing the likelihood that we will be able to recover our deferred tax assets and the need for a valuation allowance, we consider all available evidence, both positive and negative, including historical levels of pre-tax book income, expiration of net operating losses, expectations and risks associated with estimates of future taxable income and ongoing prudent and feasible tax planning strategies, as well as current tax laws. As of December 31, 2018, and December 31, 2017, we continue to record a full valuation allowance against our domestic deferred tax assets that are not offset by the reversal of deferred tax liabilities. In the future, if it is determined that we no longer have a requirement to record a valuation allowance against all or a portion of our deferred tax assets, the release of the valuation allowance would have a positive impact on our income tax provision.

On December 22, 2017, the Tax Cut and Jobs Act legislation (the “Tax Act”) was signed into law. The Tax Act made broad and complex changes to the U.S. tax code including: (a) lower U.S. federal corporate income tax rate from 35% to 21% effective January 1, 2018, (b) accelerated expensing of qualified capital investments for a specific period, and (c) a transition from a worldwide tax system to a territorial tax system.

ASC 740, Income Taxes, requires a company to record the effects of a tax law change in the period of enactment; however, shortly after enactment of the Tax Act, the SEC staff issued Staff Accounting Bulletin (“SAB”) 118, which allows a company to record a provisional amount when it does not have the necessary information available to complete its accounting for the change in the tax law. The FASB subsequently issued ASU No. 2018-05 to codify SAB 118 by amending ASC 740. ASU No. 2018-05 continues to allow a company to record a provisional amount when it does not have the necessary information available, prepared, or analyzed in reasonable detail to complete its accounting for the change in the tax law. The measurement period ends when the company has obtained, prepared, and analyzed the information necessary to finalize its accounting, but cannot extend beyond one year.

We have completed our analysis of the income tax effects of the Tax Act. In January and April of 2018, the Internal Revenue Service (the “IRS”) issued guidance that provided additional clarification on certain aspects of the transition tax calculation. The application of the additional IRS guidance resulted in a \$16.2 increase in includible untaxed foreign earnings, which resulted in a \$5.7 increase in tax expense. This increase was offset by the tax benefit of the utilization of \$16.2 of net operating loss carryover. The overall impact to tax expense in the year ended December 31, 2018, was zero.

Other provisions introduced by the Tax Act that had a significant impact on our current year tax provision were the provisions introducing the Global Intangible Low-Taxed Income (“GILTI”) and the Base Erosion and Anti-Abuse Tax (“BEAT”). The GILTI resulted in an increase of \$29.7 in taxable income, which resulted in a \$6.6 increase in tax expense. This tax increase was offset by the tax benefit of the utilization of \$29.7 of net operating loss carryover. The BEAT resulted in an increase of \$3.8 in tax expense in the year ended December 31, 2018.

	December 31,	
	2018	2017
Tax Effect of Items That Comprise a Significant Portion of the Net Deferred Tax Asset and Deferred Tax Liability		
Deferred Tax Asset:		
Employment related accruals	\$ 51.2	\$ 51.0
Foreign tax credit carryover and other credit carryovers	0.3	0.2
Net operating loss carryforwards	78.2	100.3
Total gross deferred tax asset	129.7	151.5
Valuation allowance	(83.8)	(81.8)
Total deferred tax asset	\$ 45.9	\$ 69.7
Deferred Tax Liability:		
Intangibles	\$ (62.1)	\$ (65.7)
Unremitted foreign earnings	—	—
Unrealized gain on investment	—	(22.2)
Other	(19.5)	(17.2)
Total deferred tax liability	(81.6)	(105.1)
Net deferred tax liability	\$ (35.7)	\$ (35.4)

	December 31,	
	2018	2017
Net Deferred Tax by Geography		
U.S.	\$ (20.1)	\$ (18.4)
International	(15.6)	(17.0)
Total	<u>\$ (35.7)</u>	<u>\$ (35.4)</u>

As of December 31, 2018, we had federal, state, and foreign net operating loss carryovers, which will reduce future taxable income when utilized. Approximately \$47.2 in net federal tax benefit is available from the loss carryovers and an additional \$0.3 is available in federal tax credit carryovers. The state loss carryovers will result in state tax benefit of approximately \$31.0 when utilized. The federal net operating loss tax benefit will begin to expire in 2031, and state net operating loss carryovers will begin to expire in 2019. The federal credit carryovers are composed of foreign tax credits, which will begin to expire in 2019; research credits, which will begin to expire in 2027; and alternative minimum tax credits, which have no expiration date.

As of December 31, 2018, we carried a full valuation allowance against our domestic net deferred tax asset (“DTA”) position after excluding a portion of the deferred tax liability for long-lived, non-amortizable taxable temporary differences. We periodically re-assess the likelihood that DTA reported in the accompanying consolidated financial statements will be recovered from future taxable income.

We have re-evaluated the likelihood of recovering our net DTA, and we have determined that it is still more likely than not that the tax benefit associated with a portion of the DTA will not be realized. We assessed the available positive and negative evidence to estimate if sufficient future taxable income will be generated to use the existing net DTAs not already identified as requiring a valuation allowance. The cumulative loss incurred over the three-year period ended December 31, 2018, is a significant piece of objective negative evidence. Such objective evidence limits the ability to consider other subjective evidence, such as our projections for positive future growth. As of December 31, 2018, we had a total valuation allowance of \$83.8. The amount of the DTA considered realizable could be adjusted in the future if objective negative evidence in the form of cumulative losses is no longer present, and additional weight may be given to subjective evidence, such as our projections for growth.

We file income tax returns in the U.S. federal jurisdiction, and various states and foreign jurisdictions. With a few exceptions, we are no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations by tax authorities for years before 2014.

The following table summarizes the activity for unrecognized tax benefits:

	Year Ended December 31,	
	2018	2017
Federal, State and Foreign Tax		
Beginning unrecognized tax balance	\$ 1.5	\$ 1.4
Increase prior period positions	0.1	0.2
Increase current period positions	0.2	0.1
Decrease prior period positions	(0.1)	—
Decrease current period positions	(0.3)	—
Statutes expiring	(0.1)	(0.2)
Ending unrecognized tax benefits	<u>\$ 1.3</u>	<u>\$ 1.5</u>

The total amount of unrecognized tax benefits as of December 31, 2018, was \$1.3 including \$0.2 of accrued interest and penalty. Of the total amount of unrecognized tax benefits, \$1.3 represents the amount that, if recognized, would impact our effective income tax rate as of December 31, 2018. It is expected that the amount of unrecognized tax benefits will change in the next 12 months; however, we cannot reasonably estimate the amount of the change. We do not expect the change to have a significant impact on our results of operations or financial condition.

The Tax Act imposed a mandatory transition tax on the unremitted earnings of our international subsidiaries and generally eliminated US taxes on foreign subsidiary distributions for years beginning after December 31, 2017. As of December 31, 2018, we have \$298.5 of unremitted foreign earnings. We consider \$174.6 of the unremitted earnings to be indefinitely reinvested. For the portion of the unremitted earnings not considered indefinitely reinvested, \$123.9, we have provided a deferred tax liability of \$6.2, which represents the expected withholding tax cost of repatriating such earnings. In the event the portion of the unremitted earnings considered to be indefinitely reinvested were repatriated, we would incur a withholding tax expense of approximately \$8.7.

16. Commitments and Contingencies

Leasing

We conduct substantially all of our operations in leased facilities. Most of our leases contain renewal options and require payments for taxes, insurance and maintenance. We recognize rent holidays, including the time period during which we have access to the property for construction of improvements, construction allowances and escalating rent provisions on a straight-line basis over the term of the lease.

Substantially all of our leasing arrangements for equipment and facilities are operating leases and the rental payments under these leases are charged to operations as incurred. The amounts in the accompanying tables do not include capital lease obligations recorded as liabilities.

Our rental expense and sublease income were as follows:

	Year Ended December 31,		
	2018	2017	2016
Rental Expense, Net			
Rental expense	\$ 17.6	\$ 17.0	\$ 16.8
Sublease rental income	(4.9)	(4.2)	(3.5)
Net rental expense	<u>\$ 12.7</u>	<u>\$ 12.8</u>	<u>\$ 13.3</u>

Our future minimum noncancellable lease payments on existing operating leases at December 31, 2018, which have an initial term of more than one year, are as follows:

Years Ending December 31,	Amount
2019	\$ 13.6
2020	11.8
2021	7.7
2022	7.4
2023	6.2
Thereafter	9.4
Total (a)	<u>\$ 56.1</u>

(a) Minimum payments have not been reduced by minimum sublease rentals of \$13.1 due in the future under noncancellable subleases.

Environmental Matters

We accrue for losses associated with environmental remediation obligations when such losses are probable and reasonably estimable. Accruals for estimated losses from environmental remediation obligations generally are recognized no later than completion of the remedial feasibility study. Such accruals are adjusted as further information develops or circumstances change. Costs of future expenditures for environmental remediation obligations are not discounted to their present value.

In February 1988, Parent's predecessor entered into an arrangement with Northern Engraving Corporation ("NEC") and the Minnesota Pollution Control Agency ("MPCA") in relation to groundwater contamination on a parcel of real estate sold by Parent's predecessor to NEC. Ceridian is now responsible for the arrangement with NEC and the MPCA. The arrangement requires expense sharing between Ceridian and NEC for the remediation of groundwater contamination.

In September 1989, Parent's predecessor entered into an EMA with Seagate related to groundwater contamination on a parcel of real estate sold by Parent's predecessor to Seagate. Ceridian is now responsible for the EMA. The EMA requires expense sharing between Ceridian and Seagate for the remediation of groundwater contamination up to a certain limit. Based on additional information obtained with respect to more stringent remediation requirements, we updated our estimate of the potential liability related to the EMA, resulting in an increase to the environmental reserve of \$5.9 for the year ended December 31, 2016, which represented the limit under the EMA.

We have recognized an undiscounted liability of approximately \$5.2 and \$5.4 as of December 31, 2018 and 2017, respectively, in our consolidated balance sheets to comply with the NEC arrangement and EMA described above. The ultimate cost, however, will depend on the extent of continued monitoring activities as these projects progress. Please refer to Note 13, "Supplementary Data to Statements of Operations," for further discussion of changes in the liability during the year ended December 31, 2016.

Legal Matters

We are subject to claims and a number of judicial and administrative proceedings considered normal in the course of our current and past operations, including employment-related disputes, contract disputes, disputes with our competitors, intellectual property disputes, government audits and proceedings, customer disputes, and tort claims. In some proceedings, the claimant seeks damages as well as other relief, which, if granted, would require substantial expenditures on our part.

Our general terms and conditions in customer contracts frequently include a provision indicating we will indemnify and hold our customers harmless from and against any and all claims alleging that the services and materials furnished by us violate any third party's patent, trade secret, copyright or other intellectual property right. We are not aware of any material pending litigation concerning these indemnifications.

Some of these matters raise difficult and complex factual and legal issues and are subject to many uncertainties, including the facts and circumstances of each particular action, and the jurisdiction, forum, and law under which each action is proceeding. Because of these complexities, final disposition of some of these proceedings may not occur for several years. As such, we are not always able to estimate the amount of our possible future liabilities, if any.

There can be no certainty that we may not ultimately incur charges in excess of presently established or future financial accruals or insurance coverage. Although occasional adverse decisions or settlements may occur, it is management's opinion that the final disposition of these proceedings will not, considering the merits of the claims and available resources or reserves and insurance, and based upon the facts and circumstances currently known, have a material adverse effect on our financial position or results of operations.

17. Related Party Transactions

Management Agreements

Prior to our IPO, Ceridian was party to management agreements with affiliates of our Sponsors, Fidelity National Financial, Inc. ("FNF") and THL Managers VI, LLC ("THLM"). FNF assigned its management agreement to Cannae in November 2017. Pursuant to these management agreements, Cannae and THLM each, respectively, agreed to provide the Company with financial advisory, strategic, and general oversight services. These management agreements provided that we pay annual management fees to each of Cannae and THLM in an amount equal to the greater of (a) \$0.9, or (b) 0.5 percent of Adjusted EBITDA. Adjusted EBITDA, for purposes of the management agreements, is EBITDA as defined in the 2014 Senior Secured Credit Facility, further adjusted to exclude the payments made pursuant to the management agreements and certain stock options or other equity compensation.

In April 2018, the management agreements terminated upon consummation of our IPO. Upon termination, the management agreements provided that we pay a termination fee equal to the net present value of the management fee for a seven-year period, which was \$11.3.

We recorded a management fee expense in selling, general, and administrative expense of \$12.0, \$1.9, and \$5.0 for the years ended December 31, 2018, 2017, and 2016, respectively, related to these management agreements. The expense for the year ended December 31, 2016, included transaction advisory fees of \$3.0 related to the issuance of the senior convertible participating preferred stock. Please refer to Note 18, "Capital Stock," for further discussion of this transaction.

Indebtedness

Prior to its split-off from FNF, Cannae was an affiliate of FNF. FNF and its subsidiaries owned \$24.0 of the Senior Notes as of December 31, 2017, and 2016, respectively. Based on this ownership, \$1.3, \$3.2, and \$3.2 in interest payments were made to affiliates of Cannae during the years ended December 31, 2018, 2017, and 2016, respectively. The affiliates of Cannae conducted the debt transactions through third parties in the ordinary course of their business and not directly with us. Following Cannae's split-off from FNF, FNF retained ownership of the Senior Notes.

Service and Vendor Related Agreements

Ceridian is a party to a service agreement with CompuCom Systems, Inc. ("CompuCom"), an investment portfolio company of THL Partners. Pursuant to the service agreement, CompuCom agrees to provide us with service desk and desk side support services. Pursuant to this arrangement, we made payments to CompuCom totaling \$1.8, \$3.1, and \$5.0 during the years ended December 31, 2018, 2017, and 2016, respectively.

Other Transactions

On July 23, 2018, Ronald F. Clarke was appointed to our Board of Directors. Mr. Clarke has been the chief executive officer of FleetCor Technologies Inc. ("FleetCor Technologies") since August 2000 and its chairman of the board of directors since March 2003. We provide services to FleetCor Technologies or one of its wholly owned affiliates through certain commercial arrangements entered into in the ordinary course of business, which include provision of Dayforce HCM services, reseller or referral arrangements whereby we resell or refer FleetCor Technologies services to its customers, and other administrative services. For these services, we have recorded revenue of \$2.3 and \$2.9 for the years ended December 31, 2018, and 2017, respectively. We are also a corporate charge card customer of FleetCor Technologies. FleetCor Technologies receives a fee from the merchants from whom purchases are made on the FleetCor Technologies corporate charge card by us. In connection with charge card purchases made by us, FleetCor Technologies has provided us with rebates of approximately \$0.2 for year ended December 31, 2017.

We provide Dayforce and related services to The Stronach Group, for which we recorded revenue of \$0.3 and \$0.2 for the years ended December 31, 2018, and 2016, respectively. Alon Ossip, the brother of David Ossip, was the chief executive officer, and is currently a minority shareholder, of The Stronach Group.

We provide payroll-related tax filing services to FNF for which we recorded revenue of \$0.4, \$0.5, and \$0.3 for the years ended December 31, 2018, 2017, and 2016, respectively.

We provide Dayforce and related services to certain investment portfolio companies of THLM and Cannae. We recorded revenue of \$1.8 million from American Blue Ribbon Holdings, LLC; \$0.5 million from Essex Bargain Hunt Superstores; \$0.5 million from Guaranteed Rate; \$0.3 million from Phillips Feed Services; and \$0.3 million from System One Holdings LLC for the year ended December 31, 2018.

18. Capital Stock

As of October 1, 2013, Ceridian was authorized to issue 100,000,000 shares of common stock with a par value of \$0.01 per share and 70,000,000 shares of junior convertible participating preferred stock ("Junior Preferred Stock") with a par value of \$0.01 per share. On March 30, 2016, the Board of Directors increased the number of authorized shares of common stock to 150,000,000 and authorized 70,000,000 shares of senior convertible participating preferred stock ("Senior Preferred Stock") with a par value of \$0.01 per share. In April 2018, the Board of Directors increased the number of authorized shares of common stock to 500,000,000 and decreased the number of authorized shares of preferred stock to 10,000,000.

On March 30, 2016, we entered into an equity financing transaction with Ceridian Holding II. Ceridian Holding II raised \$150.2 from our Sponsors, certain of their co-investors, and certain other existing stockholders of Ceridian Holding. Of such amount, \$75.0 was contributed by Ceridian Holding II to Ceridian on March 30, 2016. The remaining \$75.2 was committed to be funded to Ceridian HCM Holding Inc. within the following three years, and was recorded within equity as a receivable from stockholder. During the second quarter of 2017, the board of directors of Ceridian Holding II approved the funding of the remaining \$75.2, which was transferred to Ceridian HCM Holding Inc. on June 28, 2017.

In connection therewith, Ceridian issued \$150.2 of the Senior Preferred Stock to Ceridian Holding II. The Senior Preferred Stock was senior in priority to all outstanding equity securities of Ceridian and had the rights to be converted to common stock at the option of the stockholder for a number of shares based on the conversion price. The initial conversion price was equal to the original issuance price and was subject to adjustment for certain events of dilution, including common stock dividends, stock splits, mergers and reorganizations, and the initial public offering price upon such event. In the event of an initial public offering, the Senior Preferred Stock would be automatically converted to common stock. The Senior Preferred Stock received a 12.5% annual dividend (not cash paying). In the event of liquidation, the Senior Preferred Stock had a liquidation preference equal to 1.5 times the initial face amount plus any accrued but unpaid dividends.

The Junior Preferred Stock provided holders with the equivalent number of votes on an “as converted” basis. The Junior Preferred Stock had the rights to be converted to common stock at the option of the holder for a number of shares based on the conversion price. The initial conversion price was equal to the original issuance price adjusted for certain events of dilution other than shares issued to employees and directors pursuant to the 2013 SIP and certain other instances of issuances of shares of common stock. In the event of an initial public offering, the Junior Preferred Stock would be automatically converted to common stock. In the event of liquidation, Junior Preferred Stock received the greater of up to \$13.50 per share of preferred stock (adjusted for dividend, stock split, combination or other similar recapitalization with respect to the convertible participating preferred stock) or a pro rata price per share of all common stock if converted in a liquidation event, subject to the total amount of net assets available in liquidation.

On April 30, 2018, we completed our IPO, in which we issued a total of 24,150,000 shares of common stock at a public offering price of \$22.00. Concurrently with our IPO, we issued an additional 4,545,455 shares of our common stock in a private placement at \$22.00 per share. Concurrent with the IPO and private placement, all outstanding Junior and Senior Preferred Stock were automatically converted into common shares pursuant to their terms.

As of December 31, 2018, there were 139,453,710 shares of common stock issued and outstanding. As of December 31, 2017, there were 65,285,962 shares of common stock issued and outstanding, 16,802,144 shares of Senior Preferred Stock issued and outstanding, and 58,244,308 shares of Junior Preferred Stock issued and outstanding.

Holders of our common stock are entitled to the rights set forth as follows. Directors are elected by a plurality of the votes entitled to be cast except as set forth below with respect to directors to be elected by the holders of common stock. Our stockholders do not have cumulative voting rights. Except as otherwise provided in our third amended and restated certificate of incorporation or as required by law, all matters to be voted on by our stockholders other than matters relating to the elections and removal of directors must be approved by a majority of the shares present in person or by proxy at the meeting and entitled to vote on the subject matter or by a written resolution of the stockholders representing the number of affirmative votes required for such matter at a meeting.

Our stockholders have no preemptive or other rights to subscribe for additional shares. All holders of our common stock are entitled to share equally on a share-for-share basis in any assets available for distribution to common stockholders upon our liquidation, dissolution or winding up. All outstanding shares are validly issued, fully paid and nonassessable.

19. Net Loss per Share

We compute net loss per share of common stock using the treasury stock method.

Basic net loss per share is computed by dividing net loss attributable to Ceridian available to common stockholders by the weighted-average number of shares of common stock outstanding during the period.

For the calculation of diluted net loss per share, net loss per share is adjusted by the effect of dilutive securities, including awards under our share-based compensation plans. Diluted net loss per share is computed by dividing the resulting net loss attributable to Ceridian available to common stockholders by the weighted-average number of fully diluted common shares outstanding. In the years ended December 31, 2018, 2017, and 2016, our potential dilutive shares, such as stock options, RSUs, and shares of senior and junior convertible preferred stock were not included in the computation of diluted net loss per share as the effect of including these shares in the calculation would have been anti-dilutive.

The numerators and denominators of the basic and diluted net loss per share computations are calculated as follows:

	Year Ended December 31,		
	2018	2017	2016
Numerator:			
Net loss attributable to Ceridian	\$ (60.6)	\$ 3.3	\$ (79.4)
Less: (Loss) income from discontinued operations	(25.8)	(6.0)	12.5
Net loss from continuing operations attributable to Ceridian	(34.8)	9.3	(91.9)
Less: Senior Preferred Stock dividends declared	7.7	20.5	14.1
Net loss from continuing operations attributable to Ceridian available to common stockholders	<u>\$ (42.5)</u>	<u>\$ (11.2)</u>	<u>\$ (106.0)</u>
Denominator:			
Weighted-average shares outstanding—basic	114,049,682	65,204,960	64,988,338
Weighted-average shares outstanding—diluted	114,049,682	65,204,960	64,988,338
Net loss per share from continuing operations attributable to Ceridian—basic and diluted	\$ (0.37)	\$ (0.17)	\$ (1.63)
Net (loss) income per share from discontinued operations—basic and diluted	\$ (0.23)	\$ (0.09)	\$ 0.19
Net loss per share attributable to Ceridian—basic and diluted	<u>\$ (0.60)</u>	<u>\$ (0.26)</u>	<u>\$ (1.44)</u>

The following potentially dilutive shares were excluded from the calculation of diluted net loss per share because their effect would have been anti-dilutive:

	Year Ended December 31,		
	2018	2017	2016
Senior convertible preferred stock	5,523,993	16,802,144	12,601,608
Junior convertible preferred stock	19,148,814	58,244,308	58,244,308
Stock options	14,227,487	10,201,105	8,423,124
RSUs	587,283	451,190	155,692