Ceridian HCM Holding Annual Report 2023

Form 10-K (NYSE:CDAY)

Published: March 1st, 2023

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

FORM 10-K

(Mark One)
☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 FOR THE TRANSITION PERIOD FROM TO

Commission File Number 001-38467

Ceridian HCM Holding Inc.
(Exact name of Registrant as specified in its Charter)

Delaware	**46-3231686**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**

3311 East Old Shakopee Road
Minneapolis, Minnesota 55425
(952) 853-8100
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $.01 par value	CDAY	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None
Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES ☒ NO ☐
Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES ☐ NO ☒
Indicate by check mark whether the Registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. YES ☒ NO ☐
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). YES ☒ NO ☐
Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Small reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐
Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒
If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐
Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐
Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES ☐ NO ☒
The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on the $47.08 closing price of the shares of common stock on the New York Stock Exchange on June 30, 2022, was $7,084.4 million.
The number of shares of Registrant's Common Stock outstanding as of February 20, 2023 was 154,106,560.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Definitive Proxy Statement relating to the 2023 Annual Meeting of Stockholders, scheduled to be held on April 28, 2023, are incorporated by reference into Part III of this Form 10-K.

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Unless the context requires otherwise, references in this Annual Report on Form 10-K for the fiscal year ended December 31, 2022 of Ceridian HCM Holding Inc. and subsidiaries ("Form 10-K") to "our company," the "Company," "we," "us," "our," and "Ceridian" refer to Ceridian HCM Holding Inc. and its direct and indirect subsidiaries on a consolidated basis.

We and our subsidiaries own or have the rights to various trademarks, trade names and service marks, including the following: Ceridian®, Dayforce®, Makes Work Life Better™, Powerpay® and various logos used in association with these terms. Solely for convenience, the trademarks, trade names and service marks and copyrights referred to herein are listed without the ©, ®, and ™, symbols, but such references are not intended to indicate, in any way, that Ceridian, or the applicable owner, will not assert, to the fullest extent under applicable law, Ceridian's or their, as applicable, rights to these trademarks, trade names, and service marks. Other trademarks, service marks, or trade names appearing in this Form 10-K are the property of their respective owners.

FORWARD-LOOKING STATEMENTS

This Form 10-K contains, or incorporates by reference, not only historical information, but also forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended ("Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended ("Exchange Act") and that are subject to the safe harbor created by those sections. All statements other than statements of historical fact or relating to present facts or current conditions included in this Form 10-K are forward-looking statements. Forward-looking statements give our current expectations and projections relating to our financial condition, results of operations, plans, objectives, future performance and business. You can identify forward-looking statements by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "estimate," "expect," "project," "seek," "plan," "intend," "believe," "will," "may," "could," "continue," "likely," "should," and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events but not all forward-looking statements contain these identifying words.

Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy, and other future conditions. Because forward-looking statements relate to the future, by their nature, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict. As a result, our actual results may differ materially from those contemplated by the forward-looking statements. Important factors that could cause actual results to differ materially from those in the forward-looking statements include regional, national, or global political, economic, business, competitive, market, and regulatory conditions and those risks described in Part I, Item IA, "Risk Factors" of this Form 10-K. Although we have attempted to identify important risk factors, there may be other risk factors not presently known to us or that we presently believe are not material that could cause actual results and developments to differ materially from those made in or suggested by the forward-looking statements contained in this Form 10-K. If any of these risks materialize, or if any of the above assumptions underlying forward-looking statements prove incorrect, actual results and developments may differ materially from those made in or suggested by the forward-looking statements contained in this Form 10-K. For the reasons described above, we caution against relying on any forward-looking statements. Any forward-looking statement made by us in this Form 10-K speaks only as of the date on which we make it. Factors or events that could cause our actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update or to revise any forward-looking statement, whether as a result of new information, future developments, or otherwise, except as may be required by law. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless specifically expressed as such, and should be viewed as historical data.

PART I

Item 1. Business.

Overview

Ceridian is a global human capital management ("HCM") software company. Dayforce, our flagship Cloud HCM platform, provides human resources ("HR"), payroll, benefits, workforce management, and talent intelligence functionality. In addition to Dayforce, we sell Powerpay, a Cloud HR and payroll solution for the Canadian small business market, through both direct sales and established partner channels. We also continue to support customers using our legacy North America Bureau solutions, which we generally stopped actively selling to new customers following the acquisition of Dayforce, and customers using our acquired Bureau solutions in the Asia Pacific Japan ("APJ") region. We invest in maintenance and necessary updates to support our Bureau customers and continue to migrate them to Dayforce. Revenue from our Cloud and Bureau solutions include investment income generated from holding customer funds before funds are remitted to taxing authorities, also referred to as float revenue or float.

Our five strategic growth levers drive our long-term perspectives, near-term decision making and stockholder alignment:

- Acquiring new customers in the markets where we have seen success to-date;
- Extending the Dayforce platform, thereby allowing us to deliver more value to our current and prospective customers;
- Expanding within the Enterprise segment;
- Accelerating our global expansion both by serving local customers in new geographies, and by extending our scope to service global multinational customers; and finally,
- Driving incremental value for our customers by innovating in adjacent markets around our core HCM suite, such as the Dayforce Wallet.

Products and Services

Dayforce

Dayforce, our principal Cloud HCM platform, is a single application that provides continuous real-time calculations across all modules to enable, for example, payroll administrators access to data through the entire pay period, and managers access to real-time data to optimize work schedules. Dayforce offers a comprehensive range of functionality, including global HR, payroll and tax, workforce management, benefits, and talent intelligence on web and native iOS and Android platforms. Our Dayforce mobile app enables employees not only to request and to trade schedules, but also to see the real-time impact of schedule changes on their pay. Our Dayforce platform is used by organizations, regardless of industry or size, to optimize management of the entire employee lifecycle, including attracting, engaging, paying, deploying, and developing their people. In 2022, we received several accolades for our Dayforce solution, including being named as a Leader in the 2022 Gartner Magic Quadrant™ for Cloud HCM Suites for 1,000+ Employee Enterprises for the third consecutive year; Leader in Nucleus Research's 2022 Human Capital Management Value Matrix and 2022 Workforce Management Technology Value Matrix; Leader in the Human Capital Management – Enterprise Data Quadrant by SoftwareReviews; and Canadian HR Reporter's 5-Star Software and Technology Provider for 2022.

Human Resources

Dayforce Human Resources functionality provides customers with a single, complete record for all employees. Our HR functionality is centered on a comprehensive, flexible workflow engine that streamlines and automates administrative tasks. The component maintains a record of critical forms for the employee, such as signed workplace policy agreements, Occupational Safety and Health Administration regulations, and direct deposit information.

In addition to its primary record-keeping functionality, Dayforce HR comes with an organizational management system that allows managers to view the profiles of their team members, which includes contact and time off details, as well as pay, benefits, and performance data. It is also accessible to employees, who can view the organizational chart, appropriate information about other employees in the organization, and their own pay and time details. There are several self-service options available in the product as well, such as change of address or adding a dependent, making it easy for employees to keep their profiles up to date.

Payroll and Tax

Dayforce empowers employers to manage their global payroll needs within a single system. Through our Dayforce platform, users with localized payroll functionality are able to make updates to time and pay in real-time. Dayforce supports payroll in over 160 countries around the world, whilst providing employers with a centralized global view of their payroll data. This global payroll model is powered by a combination of Ceridian-owned and partner unified payroll engines with an automated data exchange that affords users and administrators to have a consistent, intuitive single user experience. As of December 31, 2022, native payroll was available in eight countries (United States, Canada, United Kingdom, Ireland, Australia, New Zealand, Mauritius, and Singapore), where Dayforce's continuous calculation engine offers flexibility, accuracy, and efficiency in the payroll process. In these native markets, we also manage the movement and remittance of taxes to federal and local tax authorities on behalf of our customers. With a flexible rules-based configuration, and regional partnerships, Dayforce helps organizations with regulation and compliance concerns regardless of where employees work or live. We are continuing to innovate and expand into new markets to enhance the customer experience for large enterprises operating globally.

Workforce Management

Dayforce Workforce Management provides functionality to help organizations to equitably manage their workforces, improve operational efficiency, and enhance compliance by configuring the system to meet complex employment and working time rules and policies. Through Dayforce, users are offered time and attendance, absence management, scheduling, task management, and labor planning. A variety of options are available for organizations to capture time and attendance data such as physical clocks and the mobile app.

Dayforce Wallet

Dayforce Wallet is a digital payment solution for customers using Dayforce Payroll. A benefactor of Dayforce's continuous calculation engine, Dayforce Wallet offers employees on-demand access to their earned pay anytime, anywhere, in an intuitive mobile app experience. Rather than a plug-in or integration, Dayforce Wallet and Dayforce Payroll leverage the same underlying technology and system of record, providing real-time payroll accuracy. All on-demand payments are processed as regular pay runs and account for the appropriate taxes, deductions and garnishments in real-time, meaning there's minimal impact to payroll administrators and no change to the employer's cash flow.

Dayforce Wallet is designed to empower employees with greater financial flexibility and choice. The solution can be used for regular payroll, off-cycle payments, as a pay-card solution, and for on-demand pay. The Dayforce Wallet app allows employees to make any day payday by tracking their earned pay in real-time and requesting a payout of all or a portion of their earnings from the pay period. The app also allows employees to transfer funds to other financial institutions, manage and pay bills, leverage cashback rewards, and view their transaction history. As a fee-free means of bridging the gap between paydays, Dayforce Wallet offers an effective alternative to cash advances, high-interest credit cards, and payday loans, helping reduce employees' financial stress and drive employee engagement.

Dayforce Wallet was launched in the U.S. in 2020, in Canada in 2021, and in the United Kingdom in 2022. We continue to introduce new features and enhancements (which vary by country/region) to the Dayforce Wallet, such as Dayforce Wallet Rewards, referrals, and access for workers aged 14-17 years old to use the Dayforce Wallet with parental consent. We believe these features will enhance our Dayforce Wallet consumer experience and help bring greater financial flexibility and control to even more employees through Dayforce.

Benefits

Dayforce Benefits assists users from enrollment to ongoing benefits administration, including eligibility, open enrollment and Affordable Care Act ("ACA") management. Our proprietary Benefits Decision Support scoring system guides employees through a self-service experience, giving information about each of the available benefit plans and the impact of plan options, to help them choose the best option for their specific needs.

The system integrates with hundreds of benefits carriers, contains a library of qualifiers to help define eligibility rules, and leverages real-time connections to payroll and HR to inform eligibility and calculate employee deductions. In addition, we offer Benefits Intelligence, which leverages enrollment data to get visibility into elections at the plan and option levels to help administrators analyze their program.

Talent Intelligence

Dayforce Talent Intelligence, a suite of next generation talent acquisition and talent management solutions powered by Artificial Intelligence ("AI") and driven by data, helps organizations recruit, retain, and reskill their workforce. Talent Intelligence transforms talent management and recruitment strategies by using AI in conjunction with talent data from across the employee lifecycle to provide organizations insights that enable them to make more efficient, accurate, and fair talent decisions. Talent Intelligence can also objectively measure workforce demographics while identifying inequity in everything from payroll to promotion opportunities to help employers create actionable policy changes. Users can leverage Talent Intelligence tools for recruiting, onboarding, engagement, performance management, succession planning, compensation management, and employee career planning and skills development.

Powerpay

We offer Powerpay for Canadian organizations with fewer than 100 employees. Powerpay is a Cloud platform that provides scalable and straightforward payroll and HR solutions. Specifically designed for small businesses, Powerpay enables clients to pay their employees accurately and on-time.

Bureau

Our Bureau solutions offer payroll and payroll-related services using legacy technology and on-premise technology from our acquired businesses. We invest in maintenance and necessary updates to support our Bureau customers. We generally stopped selling our legacy North America Bureau payroll solutions to new customers in the United States in 2012, and in Canada in 2015, and we also intend to stop actively selling our acquired Bureau payroll solutions to new customers on a stand-alone basis. In addition to customers who use our payroll services, certain customers use our legacy Bureau tax filing services on a stand-alone basis; and in 2019 we started to sell stand-alone legacy Bureau tax services again as well as begin the process of modernizing the technology platforms used to provide those services. Beginning in 2023, with the technology migration complete, we will begin classifying recurring revenues from stand-alone tax customers as Dayforce revenue on a go-forward basis.

Customers

Dayforce is designed to serve organizations with 100 to over 100,000 employees. The Dayforce customer base has increased from 482 as of December 31, 2012 to 5,993 customers* on the platform as of December 31, 2022. For 2022, our 5,993 Dayforce customers* represented approximately 5.9 million global employees*. We define a customer as a single organization, such as a company, a non-profit association, an educational institution, or government entity. We also have approximately 38,500 Powerpay customer accounts. No single customer accounted for more than 10% of our revenues during the year ended December 31, 2022.

Sales and Marketing

We sell our Cloud solutions through a direct sales force and a variety of third-party channels, organized by customer size and geography. We market Dayforce to organizations with more than 100 employees. We market Powerpay to organizations with fewer than 100 employees in Canada. The majority of our revenue growth comes from new Cloud customers.

Services and Support

We offer a broad portfolio of services aimed to ensure customer success. We believe it's important to work closely with our customers to understand their needs and deliver technology solutions and support that address them. We continue to increase our global reach in supporting and serving our customers. As part of our international strategy, we work with partners to perform services in certain geographies where we do not currently have international operations or the particular service required by our customers.

* Excluding the 2021 acquisitions of Ascender and ADAM HCM

Implementation and Professional Services

Our internal implementation team leverages proprietary onboarding technology for new customer activation and professional services work. Our internal team is supplemented by third party services partners and system integration partners ("SI"). Our implementation services include solution configuration and activation for new customers. Professional services include add-on implementation services for existing customers, ongoing product configuration changes when the customer does not have the resources to do it themselves, product usage consulting and a variety of additional services, such as report writing, usage audits, and process improvement.

Customer Support

Our global customer support organization provides 24/7 application support from locations across North America and in the United Kingdom, Mauritius, Australia, Singapore, Philippines, and India. Our support function is organized into teams of representatives with deep domain expertise across our platform. These teams are aligned to groups of customers based on geography, product type, and client vertical to provide a combination of deep product and industry knowledge, consistent relationships, and high availability.

Technology, Hosting, and Research and Development ("R&D")

Technology and innovation are at the core of Ceridian. Our innovation and development process is customer-driven. We work directly with customers to understand their needs and to deliver solutions that address their challenges, taking into consideration the entire user experience, without being constrained by individual modules or applications. We are committed to protecting our customer information, along with our employee and contractor information and other business data.

Our R&D team is responsible for the design, development, and testing of our applications. We believe that our modern Cloud technology stack, agile design and development methodology, and efficient software deployment process enable us to innovate quickly in response to industry trends. We host Cloud-based applications and serve the majority of our customers from data centers operated by third party providers, primarily Microsoft Azure, AWS, VMWare Cloud on AWS, and Navisite. While we control and have access to our servers and all of the components of our network that are located in our external data centers, we do not control the operation of these facilities. Additionally, we host our internal systems through data centers that we operate and lease in the United States and APJ.

Intellectual Property

Our success depends, in part, on our ability to protect our proprietary technology and intellectual property. We rely on a combination of patents, copyrights, trade secrets, and trademarks, as well as confidentiality and nondisclosure agreements and other contractual protections, to establish and to safeguard our intellectual property rights.

Competition

The market for HCM technology solutions is highly competitive and subject to changing technology and shifting client needs. We compete with firms that provide both integrated and point solutions for HCM, as well as with local providers in each jurisdiction that we operate. Globally, we compete with legacy payroll service providers, as well as Cloud-enabled client-server HCM providers. We also face competition from modern HCM providers, whose solutions have been specifically built as single application platforms in the Cloud. In addition, we face competition from large, long-established enterprise application software vendors.

Competition in the global HCM market is primarily based on product and service quality, including ease of use and accessibility of technology, breadth of offerings, reputation, and price. We believe that we are competitive in each of these areas and that our single application always-on technology and product innovations, combined with our commitment to service and our geographic reach, distinguishes us from our competitors.

Seasonality

We have in the past and expect in the future to experience seasonal fluctuations in our revenues and new customer contracts with the fourth quarter historically being our strongest quarter for new customer contracts, renewals, and customer go-lives. Although the growth of our Cloud solutions and the ratable nature of our fees makes this seasonality less apparent in our overall results of operations, we expect our revenue to fluctuate quarterly and to be higher in the fourth and first quarters of each year. Fourth quarter revenue is driven by year-end processing fees and Dayforce customer go-lives; and first quarter revenue is driven by revenue earned for printing of year-end tax packages.

Environmental, Social, and Governance ("ESG") and Human Capital

At Ceridian, we believe that transparency and accountability are essential to any company's success. Our ESG and Human Capital approach is guided by five pillars: Governance and Trust; Our People; Tech for Good; Our Communities; and the Environment.

Governance and Trust

We safeguard the trust given to us by our partners, our customers, and their employees. That means upholding the highest standards of corporate governance and ethics, ensuring customer data is protected, and developing products that are reliable and effective.

Our People

As of December 31, 2022, we had 8,526 employees, including 4,436 in North America, 2,547 in APJ, and 1,543 in Europe, the Middle East, and Africa ("EMEA"). We provide a wide range of compensation and benefits to our employees which enhance the workplace experience and drive our Makes Work Life Better™ brand. In addition to salaries, these benefits (which vary by country/region) include annual bonuses, equity awards, a global employee stock purchase program, retirement savings plans, healthcare and insurance benefits, fertility and family building benefits, health savings and flexible savings spending accounts, unlimited time away from work, parental leave, flexible and remote work options, employee assistance programs, and tuition reimbursement.

Promoting diversity, equity and inclusion ("DEI") within our workforce is also a priority for Ceridian. We have a company-wide employee Global Diversity Advisory Council, and we provide funding to our nine inclusive-building employee resource YOUnity groups. In 2022, we also launched a new Achieving Corporate Equity program that empowers high-potential talent from underrepresented or underserved communities to rise within our organization. As of December 31, 2022, women represent approximately 49% of our global workforce, including approximately 44% of employees in manager-level roles and above, and approximately 38% in vice president-level roles and above. At Ceridian, in the United States, approximately 12% of our workforce is Black or African American, 15% is Asian, 6% is Hispanic or Latino, 2% is multiracial, less than 1% is Native Hawaiian or Pacific Islander, American Indian or Alaska Native, and approximately 62% is White. In the United States, people of color represent approximately 26% of employees in manager-level roles and above, and approximately 28% of employees in vice president-level roles and above.

The health, safety, and wellbeing of our employees is of paramount importance to us. In 2022, we hosted our first-ever global Mental Health Summit and offered two paid wellness days to all employees. We also expanded access to a platform that provides digital and in-person solutions that help support overall wellbeing to all employees. We developed a new emergency communications system to ensure connectivity and support for our employees both during and after natural disasters and other dangerous events. We ensure that all necessary policies and procedures are in place at our facilities to protect employee health and safety, which includes those for vaccination, testing, masking, and physical distancing that conform to COVID-19 government requirements.

We are committed to providing meaningful learning and leadership development opportunities to our workforce. In 2022, nearly 200,000 hours of in-person trainings, digital learning, and webinars related to leadership and learning development topics were completed by over 95% of our employees. We also continued the global expansion of our professional skills curriculum courses for all employees and leadership development programming.

Tech for Good

We believe that Tech for Good and responsible innovation can have a positive impact on all stakeholders. In 2022, we published our AI Ethics Principles, which will inform our management philosophy, guide our approach to product development, and provide our customers and partners with a framework that enables feedback and reflects our commitment to trust. Our Dayforce Wallet product provides individuals with on-demand access to their earned pay, which enables them to better cover both everyday expenses as well as urgent or unplanned costs. Our Dayforce Engagement product's Inclusivity Survey provides organizations with actionable inclusivity data to ensure their efforts to make progress on DEI are successful.

Our Communities

We are committed to giving back to the communities in which we live and work. Through our employee-led charity, Ceridian Cares, we provide financial support to individuals and families struggling with basic needs and quality of life. In 2022, the organization granted over $1 million to people in need across the United States and Canada, reaching the exciting milestone of over $5 million in grants given to over 3,500 people since inception. Additionally, Ceridian and our employees donated a combined total of nearly $1 million to the Ceridian Cares Foundation and hundreds of other nonprofits around the world in 2022. We supported over 700 non-profits globally and contributed more than 5,000 volunteer hours to projects on five continents.

Environment

We are actively working to reduce our Scope 1 and 2 emissions. This includes our ongoing efforts to consolidate our physical footprint globally to meet the needs of an increasingly virtual-first era.

We encourage you to review our Ceridian ESG Report for more detailed information which can be found on our website at https://www.ceridian.com/company/corporate/corporateresponsibility. In addition, past ESG reports, our Task Force on Climate-related Financial Disclosures Index, SASB Index, consolidated EEO-1 report, and ESG-related policies and principles can be found here. Our website and the information contained on, or that can be accessed through, the website is not deemed to be incorporated by reference into, and is not considered part of, this Form 10-K.

Available Information

Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy and information statements, Section 16 reports, and amendments to reports and any registration statements filed or furnished pursuant to Sections 13(a), 14 and 15(d) of the Exchange Act are available, free of charge at http://investors.ceridian.com as soon as reasonably practicable after we file such material with, or furnish it to, the Securities and Exchange Commission ("SEC"), and are also available on the SEC's website at http://www.sec.gov.

Our fourth amended and restated certificate of incorporation, our second amended and restated bylaws, charters of our Acquisition and Finance, Audit, Compensation, and Corporate Governance and Nominating Committees of our Board of Directors (our "Board"), our Corporate Governance Guidelines, and our Code of Conduct, as well as any waivers from and amendments to our Code of Conduct are available on our website at https://investors.ceridian.com/corporate-governance/governance-documents. Our website and the information contained on, or that can be accessed through, the website is not deemed to be incorporated by reference into, and is not considered part of, this Form 10-K.

Executive Officers

Our executive officers as of March 1, 2023 are as follows:

Name	Age	Position
David D. Ossip	56	Chair and Co-Chief Executive Officer
Leagh E. Turner	51	Co-Chief Executive Officer
Christopher R. Armstrong	54	Executive Vice President and Chief Operating Officer
Noémie C. Heuland	45	Executive Vice President and Chief Financial Officer
Stephen H. Holdridge	62	President, Customer and Revenue Operations
Jeffrey S. Jacobs	47	Head of Accounting and Financial Reporting
Joseph B. Korngiebel	52	Executive Vice President, Chief Product and Technology Officer
William E. McDonald	58	Executive Vice President, General Counsel and Corporate Secretary

David D. Ossip

Mr. Ossip is our Chair and Co-Chief Executive Officer. Mr. Ossip has held the position of Chair since August 2015 and Co-Chief Executive Officer since February 2022. Mr. Ossip has served as Chief Executive Officer from July 2013 until February 2022. Mr. Ossip joined the Company following the Company's acquisition of Dayforce Corporation in 2012, where he held the position of Chief Executive Officer. Mr. Ossip serves as a director of Dragoneer Growth Opportunities Corp. III, a NASDAQ listed special acquisition company. Mr. Ossip previously served as a director for Dragoneer Growth Opportunities Corp, a NYSE listed company, and Dragoneer Growth Opportunities Corp II, a NASDAQ listed company.

Leagh E. Turner

Ms. Turner is our Co-Chief Executive Officer since February 2022 and has been a member of our Board of Directors since February 2022. Ms. Turner joined Ceridian in 2018, serving as President from August 2018 until February 2022 and Chief Operating Officer from February 2020 until February 2022. Prior to joining Ceridian, Ms. Turner held the position of global Chief Operating Officer, strategic customer program of SAP, an enterprise software and programming company, from October 2016 to August 2018. Ms. Turner is a member of the board of directors for Manulife Financial Corporation, a NYSE listed company.

Christopher R. Armstrong

Mr. Armstrong is our Executive Vice President, Chief Operating Officer, a position he has held since February 2022. Mr. Armstrong joined Ceridian in 2004, and since then has held several commercial and operational leadership roles, including Executive Vice President, Chief Customer Officer from February 2020 until February 2022, Executive Vice President, Chief Operating Officer from May 2019 until February 2020, Executive Vice President, Operations from March 2018 until May 2019, and Executive Vice President, Customer Support from April 2016 until March 2018.

Noémie C. Heuland

Ms. Heuland is our Executive Vice President and Chief Financial Officer, positions she has held since October 2020. Prior to joining the Company, Ms. Heuland held the position of Senior Vice President, Chief Financial Officer of SAP Latin America and Caribbean region since April 2018. In addition, Ms. Heuland held the positions of Vice President, Chief Financial Officer of SAP Latin America and Caribbean North and South from April 2015 to March 2018. Ms. Heuland is a certified public accountant.

Stephen H. Holdridge

Mr. Holdridge is our President, Customer and Revenue Operations since February 2023. Mr. Holdridge joined Ceridian in January 2020, serving as Global Head of Services until February 2022 and Executive Vice President, Chief Customer Officer from February 2022 until February 2023. Prior to joining the Company, Mr. Holdridge held the position of Senior Executive Vice President, Worldwide Services at MicroStrategy, Inc. from November 2017 until July 2019.

Jeffrey S. Jacobs

Mr. Jacobs is our Head of Accounting and Financial Reporting and serves as the principal accounting officer, positions he has held since May 2020. Mr. Jacobs served as our Vice President, Finance from December 2016 until May 2020. Mr. Jacobs is a certified public accountant (inactive).

Joseph B. Korngiebel

Mr. Korngiebel is our Executive Vice President, Chief Product and Technology Officer, positions he has held since August 2020. Prior to joining the Company, Mr. Korngiebel held various positions at Workday, Inc. since March 2006, including Chief Technology Officer from May 2017 until July 2020.

William E. McDonald

Mr. McDonald is our Executive Vice President and General Counsel, positions he has held since July 2021, and Corporate Secretary, a position he has held since February 2016. Mr. McDonald served as Senior Vice President, Deputy General Counsel from February 2016 until July 2021.

Item 1A. Risk Factors.

Risks Related to Our Business and Industry

Our business ordinarily encounters and addresses risks, some of which can cause our future results to be different than we currently anticipate. The risk factors described below represent our current view of some of the most important risks facing our business and are important to its understanding. The following information includes a number of forward-looking statements and should be read in conjunction with information contained in this Annual Report on Form 10-K, including the Management's Discussion and Analysis of Financial Condition and Results of Operations, the Quantitative and Qualitative Disclosures About Market Risk and the consolidated financial statements and related notes.

Revenues from our Cloud solutions have grown substantially over the last few years, and we believe a significant portion of our market valuation is based upon maintaining our high Cloud solutions growth rate. Our efforts to continue increasing use of our Cloud solutions may not succeed and may reduce our revenue growth rate.

Our ability to continue to grow the revenues from our Cloud solutions through execution against our growth levers depends on the quality of our platform and solutions, and our ability to design our Cloud solutions to meet consumer demand; and our ability to increase sales from existing customers depends on our customers' satisfaction with our product and need for additional solutions. Our participation in new markets for native payroll, sales to our existing base of customers, and application expansion in various modules and features, including the Dayforce Wallet, is relatively new, and it is uncertain whether these areas will ever result in significant revenues for us. Further, the entry into new markets, sales to our existing base of customers, or the introduction of new features, functionality, or applications beyond our current markets and functionality may not be successful.

The success of our growth strategies will depend upon our ability to anticipate and to adapt to changes in technology and industry standards, and to effectively develop, to introduce, to market, and to gain broad acceptance of new product and service offerings and enhancements incorporating the latest technological advancements. We may not be able to successfully provide new or enhanced functionality and features for our existing solutions that achieve market acceptance or that keep pace with rapid technological developments.

We believe a significant portion of our market valuation is based upon our high Cloud revenue growth rate, and if we are unable to sell our Cloud solutions, including the Dayforce Wallet, into new markets or to further penetrate existing markets, or to increase sales from existing customers, or we have failures in new product functionalities, our revenue may not grow as expected, which could have a material adverse effect on our market valuation, and our business, financial condition, and results of operations.

If the movement of funds to initiate payroll-related transactions on behalf of our customers is disrupted, we may suffer significant losses which could have a material adverse effect on our business, financial condition, and results of operations.

Our payroll and tax processing services involve the movement of significant funds from the account of a customer to its employees and to relevant taxing authorities. Typically, we rely upon third party vendors to initiate payments on behalf of our customers. These payments are made in a large number of jurisdictions, in great volume and in short time windows, all of which raise the possibility of an error that disrupts the movement of funds. Further, these types of transactions are subject to an increasingly complex series of regulations and laws that we, and/or our third-party vendors must comply with. Failure to comply with these regulations and laws could result in consequences up to and including a regulator enjoining us and/or our third-party vendors from engaging in the movement of funds. In addition, as described elsewhere, the systems on which these payroll-related transactions are based are in some cases antiquated or manual or may be subject to processing and/or technological errors in communicating with third-party technology systems. Any disruption or delay to data flow in these critical time periods could lead to the disruption of fund movement. Any disruption of fund movement could have significant consequences, including defaults under our customer agreements and exposure to monetary damages, in addition to reputational harm, that could have a material adverse effect on our business, financial condition and results of operations.

Our aging software infrastructure, technology, and sophistication of these systems, and our migration to new platforms, has and will continue to lead to increased costs, vulnerability to cyber-attack, or disruptions in operations that could have a material adverse effect on our business, market brand, financial condition, and results of operations.

Our business continues to demand the use of sophisticated systems and technology, including technology infrastructure assets. These systems and technologies must be refined, updated and/or replaced with more advanced systems on a regular basis in order for us to meet both our customers' and employees' demands and expectations. Some of the crucial platforms on which we host our back office and bureau systems are aged and need to be replaced or are in the process of being replaced. Some of our customer instances have, and in the future will be, migrated to public Cloud environments. These technological changes are expensive and have and will continue to impact our profitability and demand attention from our senior leadership. If we are unable to replace our aged, crucial platforms, if some or all these platforms fail to operate due to a software error or infrastructure failure, if we fail to continue to refine and update our systems and technologies on a timely basis or within reasonable cost parameters, if we do not appropriately and timely train our employees to operate any of these new systems, if we fail to migrate to new systems in a manner free from disruption, if the new systems fail to perform as desired, or if we are unable to appropriately protect any of these systems, we could suffer the loss of data, vulnerabilities to cyber-attack, system outages or other performance problems, which could have a material adverse effect on our business, financial condition, and results of operations.

An information security breach of our systems or the loss of, or unauthorized access to, customer information or sensitive company information; the failure to comply with the U.S. Federal Trade Commission's ("FTC") ongoing consent order regarding data protection; or a system disruption could have a material adverse effect on our business, market brand, financial condition, and results of operations.

Our business is dependent on our payroll, transaction, financial, accounting, and other data processing systems. We rely on these systems, which are maintained both internally and externally at third parties, to process, on a daily and time sensitive basis, a large number of complicated transactions. We, both through our internal systems and systems maintained by third parties, electronically receive, process, store, and transmit data and personal information about our customers and their employees, as well as our vendors and other business partners. We keep this information confidential. However, both our internal and third-party partners' websites, networks, applications and technologies, and other information systems may be targeted by malevolent parties for sabotage, disruption, ramson, or data misappropriation. Further, as we grow by acquisition, these risks become acute in the period following the acquisition, as we set about integrating the acquisition target's systems into ours. Additionally, as we retire our legacy products like our bureau payroll services or sunset certain acquired products, we are decreasing investments in maintaining those systems which creates the potential for a potential security breach of one of those systems. The uninterrupted operation of our information systems and our ability to maintain the confidentiality of personal information and other customer and individual and company information that resides on our systems are critical to the successful operation of our business. We, and our third party providers, maintain systems and processes designed to protect this data and maintain business continuity, but notwithstanding such protective measures, there is a risk of intrusion, cyber-attacks or tampering that could compromise the integrity and privacy of this data. Any information security breach in our business processes or of our processing systems (whether they are maintained internally or externally at third parties) has the potential to impact our customer information and sensitive company information, including our financial reporting capabilities, which could result in the potential loss of business and our ability to accurately report financial results. If any of these systems fail to operate properly or become disabled even for a brief period of time, we could potentially miss a critical filing period, resulting in potential fees and penalties, or lose control of customer data, all of which could result in financial loss, a disruption of our business, liability to customers, regulatory intervention, or damage to our reputation.

We are subject to a twenty-year consent order with the FTC that became final in June 2011 stemming from a December 2009 criminal hack into our discontinued U.S. payroll application. We conceded no wrongdoing in the order and we were not subject to any monetary fines or penalties. However, in connection with the order, we are required to, among other things, maintain a comprehensive information security program that is reasonable and appropriate for our size and complexity, and for the type of personal information we collect. We are also required to have portions of our security program, which apply to certain segments of our U.S. business, reviewed by an independent third party on a biennial basis. Maintaining, updating, monitoring, and revising an information security program in an effort to ensure that it remains reasonable and appropriate in light of changes in security threats, changes in technology, and security vulnerabilities that arise from legacy systems is time-consuming and complex, and is an ongoing effort.

While we have taken and continue to take steps to ensure compliance with the consent order, if we are determined not to be in compliance with the consent order, or if any new breaches of security occur, the FTC may take enforcement actions or other parties may initiate a lawsuit. Any such resulting fines and penalties could have a material adverse effect on our liquidity and financial results, and any reputational damage therefrom could adversely affect our relationships with our existing customers and our ability to attain new customers. Insurance may be inadequate or may not be available in the future on acceptable terms, or at all. In addition, our insurance policies may not cover all claims made against us, and defending a lawsuit, regardless of its merit, could be costly, divert management's attention, or damage our reputation.

Our solutions and our business are subject to a variety of laws and regulations, including those regarding privacy, data protection, and information security. Any failure by us or our third party service providers, as well as the failure of our services, to comply with these laws could have a material adverse effect on our business, financial condition, and results of operations.

Failure to comply with privacy, data protection, and information security laws and regulations could have a material adverse effect on our business, results of operations or financial condition, or have other adverse consequences. These laws, which are not uniform, govern the collection, storage, hosting, transfer (including in some cases, the transfer outside the country of collection), use, disclosure, security, retention, and destruction of personal information; they require us to give notice to individuals of privacy practices; give individuals certain access and correction rights with respect to their personal information; and regulate the use or disclosure of personal information for secondary purposes such as marketing. Under certain circumstances, some of these laws require us to provide notification to affected individuals, clients, data protection authorities and/or other regulators in the event of a data breach. In many cases, these laws apply not only to third-party transactions, but also to transfers of information among the Company and its subsidiaries. The European Union (the "EU") General Data Protection Regulation (the "GDPR"), the California Consumer Protection Act (the "CCPA") and its successor, the California Privacy Rights Act ("CPRA"), are among the most comprehensive of these laws. The number of related laws and regulations we are subject to continue to increase as we enter new markets in Europe, Asia Pacific, and Latin America, and as we continue our entry into the consumer space through our Dayforce Wallet product. Restrictions on transfers of personal information from one geography to another continue to evolve. Complying with these laws and requirements, has resulted in significant costs to our business and may continue to require us to amend certain of our business practices. Further, enforcement actions and investigations by regulatory authorities related to data security incidents and privacy violations continue to increase. The future enactment of more restrictive laws, rules, or regulations and/or future enforcement actions or investigations could have a material adverse impact on us through increased costs or restrictions on our businesses and noncompliance could result in significant regulatory penalties and legal liability and damage our reputation. Restrictions on cross border data flows and data residency requirements may negatively impact our clients' and our own ability to transfer personal information to the United States and other countries as part of our provision of services, and in support of our own operations, potentially impacting revenues. In addition, data security events and concerns about privacy abuses by other companies are changing consumer and social expectations for enhanced privacy and data protection. As a result, even the perception of noncompliance, whether or not valid, may damage our reputation. Finally, our ability to produce data-driven insights for our customers as we begin to leverage artificial intelligence (AI) in our HCM technology may be constrained by current and future privacy and ethics regulatory requirements, thereby restricting our ability to use data in innovative ways.

Our business plan is focused on an aggressive growth strategy. If we fail to manage our growth effectively or if our strategy is not successful, we may be unable to execute our business plan, to maintain high levels of service, or to adequately address competitive challenges.

We have and we believe we will continue to experience a period of rapid growth in our operations and Cloud solutions. The growth of our operations and Cloud solutions has and may continue to place a strain on our management, administrative, operational, technological, and financial infrastructure. In order to manage our growth effectively, we will need to continuously improve our operational, financial, technological, and management systems, and our internal controls, reporting systems, and procedures to scaled global capabilities which may require investment as we grow and could result in disruption as we transform. Our attempts to develop new or enhanced functionality to our services, whether as part of our anticipated development road map or in response to enhancement requests we have committed to our customers, has been, and will continue to be expensive and impact our profitability. Failure to effectively manage growth or to achieve a profitable growth strategy could result in problems or delays in implementing customers, declines in quality or customer satisfaction, decreased profitability on new customer deals, increases in costs, complications or delays in introducing new features or fixing or updating our existing technology and infrastructure, or other operational challenges; and any of these difficulties could have a material adverse effect on our business, financial condition, and results of operations.

The markets in which we participate are highly competitive, and if we do not compete effectively, it could have a material adverse effect on our business, financial condition, and results of operations.

The markets in which we participate are highly competitive, and competition could intensify in the future. We believe the principal competitive factors in our market include: breadth and depth of product functionality, scalability and reliability of applications, robust workforce management, comprehensive tax services, modern and innovative Cloud technology platforms combined with an intuitive user experience, multi-country and jurisdiction domain expertise in payroll and HCM, quality of implementation and customer service, integration with a wide variety of third party applications and systems, total cost of ownership and return on investment, brand awareness, and reputation, pricing and distribution.

We face a variety of competitors, some of which are long-established providers of HCM solutions. Many of our current and potential competitors are larger, have greater name recognition, longer operating histories, larger marketing budgets, and significantly greater resources than we do, and are able to devote greater resources to the development, promotion, and sale of their products and services. Some of our competitors do or could offer HCM solutions bundled as part of a larger product offering. Furthermore, our current or potential competitors may be acquired by third parties with greater available resources and the ability to initiate or to withstand substantial price competition. In addition, many of our competitors have established marketing relationships, access to larger customer bases, and major distribution agreements with consultants, system integrators, and resellers. Our competitors have and may continue to establish cooperative relationships among themselves or with third parties that may further enhance their product offerings or resources. Although we have a global partnership strategy, additional investment and efforts will be necessary to fully implement and scale such a strategy.

If our competitors' products, services, or technologies become more accepted than our applications are today, if they are successful in bringing their products or services to market earlier than ours, or if their products or services are more technologically capable than ours, it could have a material adverse effect on our business, financial condition, and results of operations. In addition, some of our competitors may offer their products and services at a lower price compared to our products or their current pricing impacting our ability to achieve our target pricing. If we are unable to achieve our target pricing levels or if we experience significant pricing pressures, it could have a material adverse effect on our business, financial condition, and results of operations.

Our international growth strategy has and will continue to expose us to risks inherent in international sales and operations.

We have and will continue to expand our operations and sales into new international markets. Our expanding international operations are subject to risks that could adversely affect those operations or our business as a whole, including but not limited to the costs of establishing a market presence, localizing product and service offerings for foreign customers, difficulties in managing and staffing international operations, and increased expenses related to introducing corporate policies and controls in our international operations and increased reliance on partners to provide services in additional geographies. Further, the expansion of our product offering into new international markets has and will continue to result in an expansion of our monitoring of local laws and regulations, which increases our costs as well as the risk of the product not incorporating in a timely fashion or at all the necessary changes to enable a customer to be compliant with such laws, or in manual workarounds that are prone to errors.

Moreover, as part of our international strategy, we work with partners to perform services in certain geographies where we do not currently have international operations or the particular service required by our customers. As a result, we may experience business impact if our partners do not carry out the services as committed, or at a quality level that our customers demand, including potential for reduced margin from additional expense or impact to customer relationships.

Our international growth strategy has and may continue to include growth via acquisition. Our growth following an acquisition may also be dependent on our ability to transition acquired customers from current and legacy products to Dayforce, migrate and integrate acquired technologies or to increase sales by addressing broader HCM needs with additional modules of Dayforce.

If we are unable to provide the required services on a multinational basis, or if we are unable to effectively manage our international expansion, we could be subject to negative customer experiences, harm to our reputation or loss of customers, claims for any fines, penalties or other damages suffered by our customer, and other financial harm, including fines, penalties, or other damages suffered by us directly, which would negatively impact revenue and earnings. Although we have a multinational strategy, additional investment and efforts may be necessary to implement such strategy. Some of our business partners also have international operations and are subject to the risks described above.

Customers depend on our solutions to assist them to comply with applicable laws, which requires us and our third party providers to constantly monitor applicable laws and to make applicable changes to our solutions. If our solutions have not been updated to enable the customer to comply with applicable laws or we fail to update our solutions on a timely basis, it could have a material adverse effect on our business, financial condition, and results of operations.

Customers use our solutions to assist them to comply with payroll, HR, and other applicable laws for which the solutions are intended for use. We and our third party providers must monitor all applicable laws and as such laws expand, evolve, or are amended in any way, and when new regulations or laws are implemented, we may be required to modify our solutions to assist our customers to comply with such new regulations or laws, which requires an investment of our time and resources. We are also reliant on our third party providers to modify the solutions that they provide to our customers as part of our solutions to comply with changes to such laws and regulations. The number of laws and regulations that we are required to monitor has and will continue to increase as we expand both the geographic regions in which the solutions are offered and the types of products we offer to customers. These risks have become exacerbated as we expand by acquisition and are most acute in the period following the acquisition as we integrate the acquired business and its systems. In the event our solutions fail to assist a customer to comply with applicable laws, we are subject to negative customer experiences, harm to our reputation or loss of customers, claims for any fines, penalties or other damages suffered by our customer, and other financial harm, including fines, penalties, or other damages suffered by us directly.

If our current or future applications fail to perform properly, our reputation could be adversely affected, our market share could decline, and we could be subject to liability claims, which could have a material adverse effect on our business, financial condition, and results of operations.

Our applications are inherently complex and may contain material defects or errors that we are not yet aware of. Because of the large amount of data that we collect and manage, it is possible that failures or errors in our systems could result in data loss or corruption or cause the information that we collect to be incomplete or to contain inaccuracies that our customers regard as significant. Any defects in functionality or that cause interruptions in the availability of our applications could result in reputational, competitive, operational, or other business harm as well as financial costs and regulatory action, any of which could have a material adverse effect on our business, financial condition, and results of operations. In addition, the costs incurred in correcting any material defects or errors might be substantial. While we conduct standard due diligence during our acquisition process, these risks are heightened as we grow by acquisition and dedicate resources to integrating the acquisition target’s systems into ours and take on the vulnerabilities that may exist at the acquisition target.

If we fail to manage our technical operations infrastructure, our existing customers may experience service outages, and our new customers may experience delays in the implementation of our applications, which could have a material adverse effect on our business, financial condition, and results of operations.

We have experienced and will continue to experience significant growth in the number of users, transactions, and data that our operations infrastructure supports, including the acquisition of new systems via strategic transactions. We seek to maintain sufficient excess capacity in our operations infrastructure to meet the needs of all of our customers and to facilitate the rapid provision of new customer activations and the expansion of existing customer activations. In addition, we need to continue to properly manage our technological operations infrastructure to support version control, changes in hardware and software parameters, and the evolution of our applications. We have experienced, and may in the future experience, website disruptions, outages, and other performance problems. These problems may be caused by a variety of factors, including infrastructure changes, human or software errors, viruses, security attacks, fraud, increased resource consumption from expansion or modification to our Dayforce code, spikes in customer usage, denial of service issues and Cloud interruptions run by third party service providers and our ability to react. The risks of these problems occurring may be exacerbated by our strategic acquisitions, especially in the period following the acquisition as we integrate the acquisition target’s systems into ours, as well as our aging technology infrastructure which in some cases is supported by older platforms. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time. If we do not accurately predict our infrastructure requirements, our existing customers may experience service outages that may subject them to financial penalties, causing us to incur financial liabilities and customer losses; and our operations infrastructure may fail to keep pace with increased sales, causing new customers to experience delays as we seek to obtain additional capacity, which could have a material adverse effect on our business, financial condition, and results of operations.

Our growth depends in part on the success of our strategic relationships with third parties who provide us with services and license us software for use in or with both our applications and our internal operations.

In order to maintain and grow our business, we do, and we anticipate that we will continue to, depend on the continuation and expansion of relationships with third parties who provide us with services. These service provider partners include connected payroll partners, implementation partners, systems integrators, third party sales channel partners, the operators of data centers, and banks and other providers who execute wire transfers and other money movement services to support our customer payroll and tax services. Our agreements with these third party service providers are typically non-exclusive and do not prohibit them from working with our competitors. If any third-party service providers on which we rely to provide us with services experience a disruption, go out of business, are acquired by our competitors, experience a decline in quality, or terminate their relationship with us, we could experience a material adverse effect on our business, financial condition, and results of operation.

In addition, we license software from third parties for use in or with both our applications and our internal operations, and the inability to maintain these licenses could result in increased costs, or reduced service levels, which could have a material adverse effect on our business, financial condition, and results of operations. To the extent that our applications depend upon the successful operation of third party software in conjunction with our software, any undetected errors or defects in this third party software could prevent the deployment or impair the functionality of our applications, delay new application introductions, and result in a failure of our applications, which could have a material adverse effect on our business, financial condition, and results of operations.

Any failure to offer high-quality technical support services may adversely affect our relationships with our customers and could have a material adverse effect on our business, financial condition, and results of operations.

Once our applications are deployed, our customers depend on our support organization and the support capabilities of our partners to resolve technical issues relating to our applications, as well as our partner's applications. We have recently engaged in a rebalancing of our global workforce that particularly impacted our support organization, which may result in disruption as we fill existing positions in our APJ geographies. We or our partners may be unable to respond quickly enough to accommodate short-term increases in customer demand for support services, and we may be limited in our ability to resolve the technical issues our customers have with our technology, or our partner's technology. We or our partners also may be unable to modify the format of our or our partners' support services to compete with changes in support services provided by our competitors. Increased customer demand for these services, without corresponding revenues, could increase costs and have an adverse effect on our results of operations. Ultimately, a client could elect to terminate their agreement due to dissatisfaction with support, resulting in lost recurring revenue. In addition, our sales process is highly dependent on our applications and business reputation and on positive recommendations from our existing customers. Any failure to maintain high-quality technical support, or a market perception that we do not maintain high-quality support, could adversely affect our reputation and our ability to sell our applications to existing and prospective customers, which could have a material adverse effect on our business, financial condition, and results of operations.

If our customers are not satisfied with the implementation and professional services provided by us or our partners, it could have a material adverse effect on our business, financial condition, and results of operations.

Our business depends on the ability to implement our solutions on a timely, accurate, and cost-efficient basis and to provide professional services at the high level demanded by our customers. Implementation and other professional services may be performed by our own staff, by a third party, or by a combination of the two. If a customer is not satisfied with the timely access or the quality of work performed, then we could incur in loss of revenue or additional costs to address the situation, the customer's dissatisfaction with such services could damage our ability to expand the number of applications subscribed to by that customer or we could be liable for loss or damage suffered as a result, any of which could have a material adverse effect on our business, financial condition, and results of operations. If a new customer is dissatisfied with implementation, the customer could refuse to go-live, which could result in a delay in our collection of fees or could result in a customer seeking repayment of its implementation fees or suing us for damages or could force us to enforce the termination provisions in our customer contracts in order to collect revenue. In addition, negative publicity related to our customer relationships, regardless of its accuracy, may affect our ability to compete for new business with current and prospective customers, which could also have a material adverse effect on our business, financial condition, and results of operations.

We depend on our senior management team, and the loss of one or more key employees or an inability to attract and to retain highly skilled employees could have a material adverse effect on our business, financial condition, and results of operations.

Our success depends largely upon the continued services of our senior management team. Our executive officers, senior management or other key personnel have limited or no notice period applicable to their employment. Therefore, they could terminate their employment with us at any time. Additionally, we do not maintain key employee insurance on any of our executive officers, senior management, or key employees. The loss of one or more of our executive officers, senior management, or key employees could have a material adverse effect on our business, financial condition, and results of operations.

To execute our growth plan, we must attract and retain highly qualified personnel. Competition for talent is intense and has become more intense in recent years, including without limitation for individuals with high levels of experience in designing and developing software and Internet-related services and senior sales executives. We have, from time to time, experienced the need to increase compensation for current and prospective employees to retain and recruit employees of the desired qualifications which impacts our ability to profitably operate our business. In addition, we have and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications, the cumulative loss of which could raise the risk of failures to operate our business to the quality needed and could have a material adverse effect on our business, financial condition, and results of operations.

If our vendors or affiliates initiate payroll-related transactions on behalf of our customers and do not receive funds from the customer sufficient to cover the amounts paid on their behalf, we may suffer significant losses which could have a material adverse effect on our business, financial condition, and results of operations.

Under certain circumstances, funds may not be received from our customers to cover the transactions that our affiliates and third party vendors have initiated on our customers' behalf. Additionally, there is a risk that an erroneous payment instruction may trigger inaccurate payments. There is, therefore, a risk that the customer's funds will be insufficient to cover the amounts already paid on its behalf. Should customers default on their payment obligations in the future, should our affiliates or vendors make erroneous payments on behalf of a customer, should erroneous or defaulted payment recovery be unsuccessful, or should our affiliates or vendors suffer losses from similar issues, we may be required to advance substantial amounts of funds to cover such obligations, or to make our partners whole for any losses they suffer. In such an event, we may be required to seek additional sources of short-term liquidity, which may not be available on reasonable terms, which could have a material adverse effect on our business, financial condition, and results of operations. Further, should a customer on whose behalf our affiliate or vendor has initiated a transaction subsequently have financial difficulty or refuse to pay, collection of any funds advanced on its behalf may be difficult and we may suffer losses that could have a material adverse effect on our business, financial condition, and results of operation.

Regulatory requirements placed on our software and services could impose increased costs on us, delay or prevent our introduction of new products and services, and impair the function or value of our existing products and services.

Our products and services are subject to increasing regulatory requirements, and as these requirements proliferate, we are required to change or adapt to comply. Changing regulatory requirements might render our services obsolete or might block us from developing new products and services. This might in turn impose additional costs upon us to comply or to further develop our products and services. Changing regulatory requirements can make introduction of new services more costly or more time-consuming than we currently anticipate and could even prevent introduction by us of new services or cause the continuation of our existing services to become more costly.

Federal, state, or foreign government bodies or agencies have in the past adopted, and may in the future adopt, laws or regulations affecting the use of the Internet as a commercial medium. Future changes in these laws or regulations could require us to modify our applications in order to comply with these changes. In addition, government agencies or private organizations may begin to impose taxes, fees, or other charges for accessing the Internet or commerce conducted via the Internet. These laws or charges could limit the growth of Internet-related commerce or communications generally, resulting in reductions in the demand for Internet-based applications such as ours, any of which could have a material adverse effect on our business, financial condition, and results of operations.

For our Dayforce Wallet service, we advance earned net wages and associated tax amounts on behalf of customers in connection with the "on demand pay" payroll feature of the service in order to provide their employees access to earned wages in advance of their standard payroll cycles. A customer may fail to satisfy its obligation to repay us for those advanced monies which could have a material adverse effect on our business, financial condition, and results of operations.

In the case of our "on demand pay" service (a service that is offered as part of the Dayforce Wallet), credit is provided to our customers and funds are advanced on the customers' behalf in order to fund the customers' employees' interim earned net wage payroll demands (including associated source and other deductions) with the requirement that the customers will repay the advance on the date of their next ordinary payroll run. These advances may or may not have priority over other creditors of our customers, and our other credit protection measures, if implemented, may be inadequate to make us whole. There is, therefore, a risk that our customers do not pay back the amounts we have already paid on their behalf, and in that event, we may possess limited legal recourse to recoup those funds from our customers. In the event of a customer's failure to repay us, we may be required to seek additional sources of short-term liquidity, which may not be available on reasonable terms, or suffer credit losses, which could have a material adverse effect on our business, financial condition, and results of operations.

Customer funds and wage funds of their employees that our trustees and third-party financial institution partners hold are subject to market, interest rate, credit, and liquidity risks. The loss of these funds could have a material adverse effect on our business, financial condition, and results of operations.

Our trustees (in the case of customer funds held in our U.S. Employer Funds Trust and our Ceridian Canada Payroll Trust) and our third party financial institution partners (in the case of employee wage funds held on their behalf as part of the U.S. Dayforce Wallet program and certain of our non-U.S. operations) may invest funds in one or more high-quality bank deposits, money market mutual funds, commercial paper, collateralized short-term investments, government securities, as well as highly rated asset-backed, mortgage-backed, municipal, corporate, and bank securities. These assets are subject to varying degrees of general market, interest rate, credit, and liquidity risks. These risks may be exacerbated, individually or in unison, during periods of unusual financial market volatility. We are required to fund the payroll and wage funds of our customers and their employees regardless of any loss realized on those investments affecting the principal funds held. In the event of a global financial crisis, such as that experienced in 2008, we could be faced with a severe constriction of the availability of liquidity, which could impact our ability to fund payrolls. Any loss of principal, or inability to access customer funds could have an adverse impact on our cash position and results of operations and could require us to obtain additional sources of liquidity, and could have a material adverse effect on our business, financial condition, and results of operations.

We may acquire other companies or technologies, which could divert our management's attention, result in additional indebtedness or dilution to our stockholders, and otherwise disrupt our operations, which could have a material adverse effect on our business, financial condition, and results of operations.

We have, and we may in the future seek to acquire or to invest in businesses, applications, or technologies that we believe could complement or expand our applications, enhance our technical capabilities, or otherwise offer growth opportunities. The pursuit of potential acquisitions may divert the attention of management and cause us to incur various expenses in identifying, investigating, and pursuing suitable acquisitions, whether or not they are consummated. In addition, we have limited experience in acquiring other businesses. If we acquire additional businesses, we may incur significant costs to integrate such businesses. Further, we may not be able to integrate the acquired personnel, operations, and technologies successfully or profitably, or to effectively manage the combined business following the acquisition. If an acquired business fails to meet our expectations, it could have a material adverse effect on our business, financial condition, and results of operations. In order to fund acquisitions, we may issue dilutive equity securities or incur additional debt, resulting in an increase in our interest payments.

A significant portion of the purchase price of companies we acquire may be allocated to goodwill and other intangible assets, which must be assessed for impairment at least annually. In the future, if our acquisitions do not yield expected returns, we may be required to record charges based on this impairment assessment, which could have a material adverse effect on our financial condition and results of operations.

Failure to comply with anti-corruption laws and regulations, economic and trade sanctions, anti-money laundering laws and regulations, and similar laws could have a materially adverse effect on our reputation, results of operations or financial condition, or have other adverse consequences.

Regulators worldwide are exercising heightened scrutiny with respect to anti-corruption, economic and trade sanctions, and anti-money laundering laws and regulations. Such heightened scrutiny has resulted in more aggressive investigations and enforcement of such laws and more burdensome regulations, any of which could have a material adverse impact on our business. We are growing our business throughout the world, including in numerous developing economies where companies and government officials are more likely to engage in business practices that are prohibited by domestic and foreign laws and regulations, including the United States Foreign Corrupt Practices Act. Such laws generally prohibit improper payments or offers of payments to foreign government officials and leaders of political parties, and in some cases, to other persons, for the purpose of obtaining or retaining business. We are also subject to economic and trade sanctions programs, including those administered by the U.S. Treasury Department's Office of Foreign Assets Control, which prohibit or restrict transactions or dealings with specified countries, their governments and, in certain circumstances, their nationals, and with individuals and entities that are specially designated, including narcotics traffickers and terrorists or terrorist organizations, among others. In addition, some of our businesses and entities in the U.S. and a number of other countries in which we operate are and will continue to be subject to anti-money laundering laws and regulations. These laws require us to develop and implement risk-based anti-money laundering programs, report large cash transactions and suspicious activity, and maintain transaction records. These laws and regulations include the Bank Secrecy Act of 1970 as amended by the USA PATRIOT Act of 2000 (the "BSA"), that requires banks and money services businesses, among others, to develop and implement risk-based anti-money laundering programs, report large cash transactions and suspicious activity, and maintain transaction records

We have implemented policies and procedures to monitor and address compliance with applicable anti-corruption, economic and trade sanctions and anti-money laundering laws and regulations, and we are continuously in the process of reviewing, upgrading, and enhancing certain of our policies and procedures. However, there can be no assurance that our employees, consultants, or agents will not take actions in violation of our policies for which we may be ultimately responsible, or that our policies and procedures will be adequate or will be determined to be adequate by regulators. Any violations of applicable anti-corruption, economic and trade sanctions or anti-money laundering laws or regulations could limit certain of our business activities until they are satisfactorily remediated and could result in civil and criminal penalties, including fines, which could damage our reputation and have a material adverse effect on our results of operation or financial condition. Further, bank regulators, including the Office of Comptroller of the Currency ("OCC"), which now regulates Ceridian National Trust Bank, continue to impose additional and stricter requirements on banks to ensure they are meeting their BSA obligations, and banks are increasingly viewing money services businesses, as a class, to be higher risk customers for money laundering. As a result, our banking partners that assist in processing our money movement transactions may limit the scope of services they provide to us or may impose additional material requirements on us. Further, bank regulators, including the OCC, may increase regulatory investigations or governmental oversight to ensure we are meeting our BSA obligations. These regulatory restrictions on banks and changes to banks' internal risk-based policies and procedures may result in a decrease in the number of banks that may do business with us, may require us to materially change the manner in which we conduct some aspects of our business, may decrease our revenues and earnings and could have a material adverse effect on our results or financial condition.

We may not be able to utilize a significant portion of our net operating loss, which could have a material adverse effect on our financial condition and results of operations.

As of December 31, 2022, we had federal and state net operating loss carryforwards due to prior period losses, which, if not utilized, will begin to expire in 2031 and 2023 for federal and state purposes, respectively. These net operating loss carryforwards could expire unused and be unavailable to offset future income tax liabilities, which could have a material adverse effect on our financial condition and results of operations.

In addition, under Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), our ability to utilize net operating loss carryforwards or other tax attributes in any taxable year may be limited if we experience an "ownership change." A Section 382 "ownership change" generally occurs if one or more stockholders or groups of stockholders who own at least 5% of our stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. Future issuances of our stock could cause an "ownership change." It is possible that an ownership change could have a material effect on our ability to utilize our net operating loss carryforwards, which could have a material adverse effect on our financial condition and results of operations.

Litigation and regulatory investigations aimed at us or resulting from actions of our predecessor may result in significant financial losses and harm to our reputation.

We face risk of litigation, regulatory investigations, and similar actions in the ordinary course of our business, including the risk of lawsuits and other legal actions relating to breaches of contractual obligations, tortious claims, employment and labor law matters, securities law claims, or claims related to erroneous transactions or breach of data privacy laws from customers, stockholders, employees or other third parties which could result in fines, penalties, interest, or other damages. In particular, our clients have sought to pursue indemnification claims against us where they have been subject to wage compliance claims. Litigation might result in substantial costs and may divert management's attention and resources, which might materially harm our business, overall financial condition, and operating results. We may also be subject to various regulatory inquiries, such as information requests, subpoenas, and book and records examinations, from regulators and other authorities in the geographic markets in which we operate. A substantial liability arising from a lawsuit judgment or settlement or a significant regulatory action against us or a disruption in our business arising from adverse adjudications in proceedings against our directors, officers, or employees could have a material adverse effect on our business, financial condition, and results or operations. Insurance might not cover such claims, might not provide sufficient payments to cover all the costs to resolve one or more such claims and might not continue to be available on terms acceptable to us. A claim brought against us that is uninsured or underinsured could result in unanticipated costs, thereby harming our operating results and leading analysts or potential investors to lower their expectations of our performance, which could reduce the trading price of our stock or potentially result in a lawsuit related to the reduced trading price of our stock.

Additionally, we are subject to claims and investigations as a result of our predecessor, Control Data Corporation ("CDC"), Ceridian Corporation, and other former entities for whom we are successor-in-interest with respect to assumed liabilities. For example, in September 1989, CDC became party to an environmental matters agreement with Seagate Technology plc ("Seagate") related to groundwater contamination on a parcel of real estate in Omaha, Nebraska sold by CDC to Seagate. In February 1988, CDC entered into an arrangement with Northern Engraving Corporation and the Minnesota Pollution Control Agency in relation to groundwater contamination at a site in Spring Grove, Minnesota. In 2021 and 2022, we have been subject to asbestos related claims for former CDC employees. Although we are fully reserved for these groundwater contamination liabilities, and partially insured for the asbestos claims, we cannot be certain if additional claims, investigations, or liabilities related to such predecessor companies will surface.

Any failure to protect our intellectual property rights could impair our ability to protect our proprietary technology and our brand.

Our success and ability to compete depend in part upon our intellectual property. We primarily rely on copyright, trade secret, and trademark laws; trade secret protection; and confidentiality or license agreements with our employees, customers, partners, and others to protect our intellectual property rights. However, the steps we take to protect our intellectual property rights may be ineffective or inadequate.

In order to protect our intellectual property rights, we have and will likely be required to continue to spend significant resources to monitor and to protect these rights. Litigation brought to protect and to enforce our intellectual property rights could be costly, time-consuming, and distracting to management, with no guarantee of success, and could result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims, and countersuits attacking the validity and enforceability of our intellectual property rights. Our failure to secure, to protect, and to enforce our intellectual property rights could have a material adverse effect on our business, financial condition, and results of operations.

We may be sued by third parties for alleged infringement of their proprietary rights which could have a material adverse effect on our business.

There is considerable intellectual property development activity in our industry. Third parties, including our competitors, may own or claim to own intellectual property relating to our service offerings and may claim that we are infringing their intellectual property rights. We may be found to be infringing upon such rights, even if we are unaware of their intellectual property rights. Any claims or litigation could cause us to incur significant expenses and, if successfully asserted against us or if we decide to settle, could require that we pay substantial damages or ongoing royalty payments, obtain licenses, modify applications, prevent us from offering our services, or require that we comply with other unfavorable terms. We may also be obligated to indemnify our customers, vendors, or partners in connection with any such claim or litigation. Even if we were to prevail in such a dispute, any litigation regarding our intellectual property could be costly and time consuming.

The use of open source software in our applications may expose us to additional risks and harm our intellectual property rights.

Some of our applications include software covered by open source licenses. From time to time, there have been claims challenging the ownership of open source software against companies that incorporate such software into their products or applications. The terms of various open source licenses have not been interpreted by U.S. courts, and there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market our applications. By the terms of certain open source licenses, we could be required to release the source code of our proprietary software and to make our proprietary software available under open source licenses if we combine our proprietary software with open source software in a certain manner. In the event that portions of our proprietary software are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, to re-engineer all or a portion of our technologies, or otherwise to be limited in the licensing of our technologies, each of which could reduce or eliminate the value of our technologies and services. In addition to risks related to license requirements, usage of open source software can lead to greater risks than use of third party commercial software, as open source licensors generally do not provide warranties or controls on the origin of the software. Many of the risks associated with usage of open source software cannot be eliminated and could have a material adverse effect on our business, financial condition, and results of operations.

The implementation of new accounting systems or applications could interfere with our business and operations.

The implementation of new systems and enhancements may be disruptive to our business and can be time-consuming and divert management's attention. Any disruptions relating to our systems or any problems with implementation, particularly any disruptions impacting our operations or our ability to accurately report our financial performance on a timely basis, could materially and adversely affect our business and operations.

Risks Related to Our Indebtedness

Our outstanding indebtedness could have a material adverse effect on our financial condition and our ability to operate our business, and we may not be able to generate sufficient cash flows to meet our debt service obligations.

Our obligations under the Senior Secured Credit Facility are secured by first priority security interests in substantially all of our assets and the domestic subsidiary guarantors, subject to permitted liens and certain exceptions. Our outstanding indebtedness and any additional indebtedness we incur may have important consequences for us, including, without limitation, that:

- we may be required to use a substantial portion of our cash flow to pay the principal of and interest on our indebtedness;
- our indebtedness and leverage may increase our vulnerability to adverse changes in general economic and industry conditions, as well as to competitive pressures;
- our ability to obtain additional financing for working capital, capital expenditures, acquisitions and for general corporate and other purposes may be limited;
- our indebtedness may expose us to the risk of increased interest rates because certain of our borrowings, including and most significantly our borrowings under our Senior Secured Credit Facility, are at variable rates of interest; and
- our indebtedness may prevent us from taking advantage of business opportunities as they arise or successfully carrying out our plans to expand our business.

Under the terms of the agreements governing our debt facilities, we are required to comply with specified operating covenants and, under certain circumstances, a financial covenant applicable to the Revolving Credit Facility, which may limit our ability to operate our business as we otherwise might operate it. If not cured, an event of default under our Senior Secured Credit Facility could result in any amounts outstanding, including any accrued interest and unpaid fees, becoming immediately due and payable, which would require us, among other things, to seek additional financing in the debt or equity markets, to refinance or restructure all or a portion of our indebtedness, to sell selected assets, and/or to reduce or to delay planned capital or operating expenditures. Such measures might not be sufficient to enable us to service our debt, and any such financing or refinancing might not be available on economically favorable terms or at all. If we are not able to generate sufficient cash flows to meet our debt service obligations or are forced to take additional measures to be able to service our indebtedness, it could have a material adverse effect on our business, financial condition, and results of operations.

Aspects of the Capped Calls may not operate as planned and may affect the value of the Convertible Senior Notes and our common stock, and we are subject to counterparty credit risk with respect to the Capped Calls.

In connection with the pricing of the Convertible Senior Notes, we entered into the Capped Calls. Please refer to Note 9, "Debt" for additional information. The Capped Calls are expected generally to reduce the potential dilution to our common stock upon any conversion of the Convertible Senior Notes and/or offset any potential cash payments we are required to make in excess of the principal amount of converted Convertible Senior Notes, as the case may be, with such reduction and/or offset subject to a cap. The Capped Calls are complex transactions that are not part of the terms of the Convertible Senior Notes, and may not operate as planned. If the Capped Calls do not operate as we intend, it may have an effect on the price of the Convertible Senior Notes or our common stock.

The option counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions following any conversion of the Convertible Senior Notes, any repurchase of the Convertible Senior Notes by us on any fundamental change repurchase date, any redemption date, or any other date on which the Convertible Senior Notes are retired by us, in each case if we exercise our option to terminate the relevant portion of the Capped Calls. This activity could cause or avoid an increase or a decrease in the market price of our common stock or the Convertible Senior Notes, which could affect the ability of a noteholder to convert the Convertible Senior Notes and, to the extent the activity occurs during any observation period related to a conversion of Convertible Senior Notes, could affect the number of shares of common stock, if any, and value of the consideration that a noteholder will receive upon conversion of the Convertible Senior Notes. If any such Capped Call fails to become effective, the option counterparties or their respective affiliates may unwind their hedge positions with respect to our common stock, which could adversely affect the value of our common stock and the value of the Convertible Senior Notes. The option counterparties are financial institutions, and we are subject to the risk that they might default under the Capped Calls. Our exposure to the credit risk of the option counterparties is not secured by any collateral. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under our transactions with that option counterparty. Our exposure will depend on many factors, but, generally, the increase in our exposure will be correlated with increases in the market price or the volatility of our common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of any option counterparty.

Risks associated with the conversion of our Convertible Senior Notes issued under the Indenture may adversely affect our financial condition and results of operations.

Under certain circumstances, noteholders may convert their Convertible Senior Notes at their option prior to the scheduled maturities. Upon conversion of the Convertible Senior Notes, we will be obligated to make cash payments in an amount no less than the principal amount being converted, and any excess of the conversion value over the principal amount will be settled, at the Company’s election, in cash or shares of the Company’s common stock. In addition, noteholders will have the right to require us to repurchase their Convertible Senior Notes upon the occurrence of a fundamental change at a repurchase price equal to 100% of the principal amount of the Convertible Senior Notes to be repurchased, plus accrued and unpaid interest, if any, to, but not including, the fundamental change repurchase date (as defined in the Indenture). There is a risk that we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Convertible Senior Notes surrendered therefor or Convertible Senior Notes being converted. Our failure to repurchase Convertible Senior Notes when the Indenture requires the repurchase or to pay any cash payable on future conversions of the Convertible Senior Notes as required by the Indenture would constitute a default under the Indenture. A default under the Indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Convertible Senior Notes or make cash payments upon conversions thereof. In addition, even if noteholders do not elect to convert their Convertible Senior Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Senior Notes as a current, rather than long-term, liability, which would result in a material reduction of our net working capital.

Risks Related to Ownership of Our Common Stock

The price of our common stock may be volatile and investors may lose all or part of their investment.

The market price and volume of our common stock trading has experienced, and may continue to experience, wide fluctuations and volatility. Factors that may impact our performance and market price include those discussed elsewhere in this “Risk Factors” section of this Annual Report on Form 10-K and others such as: market factors such as economic recession or monetary policy actions by central banking authorities, announcement or filing with the SEC by us or our competitors of acquisitions, business plans or commercial relationships as well as new services; any major change in our senior management or board of director; sales, or anticipated sales, of our stock, including sales by our officers, directors, and significant stockholders; issuance of new, negative, or changed securities analysts’ reports or recommendations or estimates; investor perceptions of us and the industries in which we or our customers operate; and threatened or actual litigation and governmental investigations.

These and other factors may cause the market price and demand for shares of our common stock to fluctuate substantially, which may limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the liquidity of our common stock. In addition, securities class action litigation has often been instituted against companies following periods of volatility in the overall market and in the market price of a company’s securities. Securities litigation against us, regardless of the merits or outcome, could result in substantial costs, damage to our reputation, and divert the time and attention of our management from our business, which could have a material adverse effect on our business, financial condition, and results of operations.

The issuance of additional stock, including common stock issued upon conversion of our Convertible Senior Notes, will dilute all other stockholders.

The issuance of additional stock in connection with acquisitions, financings, our equity incentive plans, our Convertible Senior Notes, or otherwise will dilute all other stockholders. Our fourth amended and restated certificate of incorporation authorizes us to issue up to five hundred million shares of common stock and up to ten million shares of preferred stock with such rights and preferences as may be determined by our board of directors. Subject to compliance with applicable rules and regulations, we may issue all of these shares that are not already outstanding without any action or approval by our stockholders. We intend to continue to evaluate strategic acquisitions or opportunities in the future. We may pay for such acquisitions or opportunities, in part or in full, through the issuance of additional equity securities. Further, the conversion of some or all of the Convertible Senior Notes will dilute the ownership interests of existing stockholders to the extent we deliver shares of our common stock upon conversion of any of the Convertible Senior Notes.

Because we do not intend to pay cash dividends in the foreseeable future, investors may not receive any return on investment unless they are able to sell common stock for a price greater than the purchase price.

We have never declared nor paid cash dividends on our common stock. We currently intend to retain any future earnings to finance the operation and expansion of our business, and we do not expect to declare or to pay any dividends in the foreseeable future. Consequently, stockholders must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. There is no guarantee that shares of our common stock will appreciate in value or even maintain the price at which investors have purchased their shares.

Anti-takeover protections in our fourth amended and restated certificate of incorporation, our second amended and restated bylaws, or our contractual obligations may discourage or prevent a takeover of our company, even if an acquisition would be beneficial to our stockholders.

Provisions contained in our fourth amended and restated certificate of incorporation and second amended and restated bylaws, as well as provisions of Delaware law, could delay or make it more difficult to remove incumbent directors or could impede a merger, takeover or other business combination involving us or the replacement of our management, or discourage a potential investor from making a tender offer for our common stock, which, under certain circumstances, could reduce the market value of our common stock, even if it would benefit our stockholders.

In addition, under the agreements governing our credit facilities, a change of control would cause us to be in default or could trigger dilutive or additional expenses. For example, in the event of a change of control default, the administrative agent under our credit facilities would have the right (or, at the direction of lenders holding a majority of the loans and commitments under our credit facilities, the obligation) to accelerate the outstanding loans and to terminate the commitments under our credit facilities, and if so accelerated, we would be required to repay all of our outstanding obligations under our credit facilities.

Further, certain provisions in the Convertible Senior Notes and the Indenture could increase the cost of acquiring us or otherwise discourage a third party from acquiring us or removing incumbent management, including in a transaction that noteholders or holders of our common stock may view as favorable.

General Risk Factors

Our quarterly results of operations have and may continue to fluctuate significantly and may not fully reflect the underlying performance of our business.

Our quarterly results of operations, including the levels of our revenues, gross margin, profitability, cash flow, and deferred revenue, has varied and may vary significantly in the future, and period-to-period comparisons of our results of operations may not be meaningful. Accordingly, the results of any one quarter should not be relied upon as an indication of future performance. Our quarterly financial results may fluctuate as a result of a variety of factors, many of which are outside of our control, and as a result, may not fully reflect the underlying performance of our business. These factors include: our ability to attract and retain new and current Cloud customers, as well as Dayforce Wallet customers; changes to services or pricing impacting our customer contracts; seasonal variations in sales of and revenue from our applications, changes to our operating expenses related to the maintenance and expansion of our business including new acquired businesses, operations, and infrastructure; and general economic, industry, and market conditions, including the addition or loss of employees by our Cloud customers who generally pay on a “per employee per month” basis, interest rates, and accounting rules.

Catastrophic events as well as expectations related to environmental, social and governance (ESG) matters may disrupt our business and expose us to risks that could adversely affect our business, financial condition, results of operations and reputation.

Our business, financial condition, results of operations, access to capital markets and borrowing costs may be adversely affected by a major natural disaster or catastrophic event, including civil unrest, economic recession, geopolitical instability, war, terrorist attack, the effects of climate change, or pandemics or other public health emergencies such as the COVID-19 outbreak, and measures taken in response thereto. In the event of a major disaster or event impacting any of our locations or locations where our employees work virtually, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our application development, lengthy interruptions in our services, breaches of data security and loss of critical data. These catastrophic events have the potential to disrupt the business of our third-party suppliers, partners, or customers. All the potential impacts could have a material adverse effect on our business, financial condition, and results of operations.

For instance, the COVID-19 pandemic created significant global volatility, uncertainty, and economic disruption. The extent to which it will continue to adversely affect our business, operations, and financial results will depend on numerous evolving factors, including developments which are highly uncertain and cannot be predicted, such as the duration and scope of the event, and that affect our ability to sell and to provide our services to our current and future customers, and the ability of our customers to pay for our services or to make us whole for advances of earned net wages and associated tax amounts made on their behalf by us.

Our disclosures and ambitions related to ESG matters may expose us to risks that could adversely affect our reputation and performance. We publicly share certain information about our ESG initiatives and goals. Our disclosures on these matters, and goals we set for ourselves or a failure to meet these goals may harm our reputation and brand. By electing to set and share publicly these corporate ESG initiatives and goals, our business may also face increased scrutiny related to ESG activities.

We operate and are subject to tax in multiple jurisdictions. Audits, investigations, and tax proceedings could have a material adverse effect on our business, results of operations, and financial condition.

We are subject to income and non-income taxes in multiple jurisdictions. Income tax accounting often involves complex issues, and significant judgment is often required in determining our worldwide provision for income taxes. We are regularly subject to tax examinations in these jurisdictions during which the tax authorities may challenge our tax positions. We regularly assess the likely outcomes of these examinations to determine the appropriateness of our tax reserves as well as our future tax liabilities. In addition, the application of withholding tax, value added tax, goods and services tax, sales tax, and other non-income taxes is not always certain, and we may be subject to examinations relating to such withholding or non-income taxes. We believe that our tax positions are reasonable and our tax reserves are adequate to cover any potential liability. However, if any of these tax authorities successfully challenge our positions, we may be liable for additional tax, penalties, and interest in excess of any reserves established, which may have a significant impact on our results and operations and future cash flow.

Changes in generally accepted accounting principles in the United States could have a material adverse effect on our previously reported results of operations.

Generally accepted accounting principles in the United States are subject to interpretation by the Financial Accounting Standards Board (the "FASB"), the SEC, and various bodies formed to promulgate and to interpret appropriate accounting principles. A change in these principles or interpretations could have a significant effect on our previously reported results of operations and could affect the reporting of transactions completed before the announcement of a change. Please refer to Part II, Item 8, Note 2, "Summary of Significant Accounting Policies", of this report for our assessment of recently issued and adopted accounting pronouncements.

Our debt may be downgraded, which could have a material adverse effect on our business, financial condition, and results of operations.

A reduction in the ratings that rating agencies assign to our debt may negatively impact our access to the debt capital markets and increase our cost of borrowing, which could have a material adverse effect on our business, financial condition, and results of operations.

Volatility and weakness in bank and capital markets may adversely affect credit availability and related financing costs for us.

Disruptions in the financial markets can also adversely affect our lenders, insurers, customers, and other counterparties. During periods of volatile credit markets, there is risk that lenders, even those with strong balance sheets and sound lending practices, could fail, no longer participate in credit offerings, or refuse to honor their existing legal commitments and obligations to us, including but not limited to, extending credit up to the maximum amount permitted by the Revolving Credit Facility. If our lenders are unable to fund borrowings under their revolving credit commitments or we are unable to borrow or refinance our debt in the financial markets, it could be difficult to obtain sufficient funding to execute our business strategy or to meet our liquidity needs, which could have a material adverse effect on our business, financial condition, and results of operations.

Our failure to maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act could have a material adverse effect on our business, financial condition, and results of operations.

As a public company, we are required to design and maintain proper and effective internal controls over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act of 2002 requires that we evaluate and determine the effectiveness of our internal controls over financial reporting and provide a management report on the internal controls over financial reporting, which must be attested to by our independent registered public accounting firm. We have previously identified and reported material weaknesses, and we may identify additional material weaknesses in internal controls in future periods. If we were to have another material weakness in our internal controls over financial reporting, we may not detect errors on a timely basis and our financial statements may be materially misstated. There could also be a negative reaction in the financial markets due to a loss of investor confidence in us and the reliability of our consolidated financial statements, which could have a material adverse effect on our business, financial condition, and results of operations.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters is located in Minneapolis, Minnesota and we also have a major office location in Toronto, Ontario, Canada, both in leased facilities. In addition, as of December 31, 2022, we lease office space in various other locations across North America, APJ, and EMEA. We believe that our current facilities meet our needs, and we are confident that we will be able to obtain additional space on commercially reasonable terms to accommodate future growth as needed. Refer to Note 15, "Leases," to our consolidated financial statements for additional discussion of our leases.

Item 3. Legal Proceedings.

From time to time, we may become involved in legal proceedings arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, if determined adversely to us, we believe would individually or taken together have a material adverse effect on our business, financial condition or liquidity. Discussion of Legal Matters is incorporated by reference from Part II, Item 8, Note 17, "Commitments and Contingencies," of this Form 10-K and should be considered an integral part of Part I, Item 3, "Legal Proceedings".

On October 21, 2021, a claim was issued by purported stockholder, Bluemoon Capital Ltd., in the Superior Court of Justice of Ontario, Canada. The claim is against the Company, together with David Ossip, Chair and Co-Chief Executive Officer of the Company, Arthur Gitajn, former EVP and Chief Financial Officer of the Company, Gnaneshwar Rao, director of the Company and Brent Bickett, director of the Company, as well as certain third parties. The action, which is a proposed class action, alleges misrepresentations and negligence in connection with the disclosure made by the Company in its April 25, 2018 Prospectuses (which were later incorporated by reference into the Company's May 24, 2018 Interim Financial Statements and MD&A) regarding matters surrounding the Company's distribution to its pre-IPO stockholders of its 50% interest in LifeWorks Corporation Ltd. On January 19, 2022, the Ontario court rejected the Norwich Application for discovery by plaintiff (equitable or discretionary remedy in Canada for disclosure of documentation to form an action), which had been filed prior to filing the class action on the basis that it did not meet the key criteria for pre-action discovery. Plaintiff has appealed this decision which was denied, with costs, by the Ontario Court of Appeal on December 14, 2022.

The action seeks unspecified monetary damages under the Ontario *Securities Act* and at common law.

A motion brought by the Company for Security for Costs regarding the class action is pending and a motion to strike the class action application is currently set for a hearing on March 31, 2023. At this stage of the proceeding, the ultimate disposition is not yet determinable, but we believe that the likelihood of a material loss arising out of this claim is remote.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information for Common Stock

Our common stock has traded on the New York Stock Exchange (“NYSE”) and the Toronto Stock Exchange under the symbol “CDAY” since April 26, 2018, the date of our initial public offering.

Dividend Policy

We do not currently intend to pay cash dividends on our common stock in the foreseeable future. However, in the future, subject to factors described below and our future liquidity and capitalization, we may change this policy and choose to pay dividends.

Stockholders

As of December 31, 2022, there were 58 stockholders of record of our common stock. The actual number of stockholders is considerably greater than this number of record holders, and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

Recent Sales of Unregistered Securities

None.

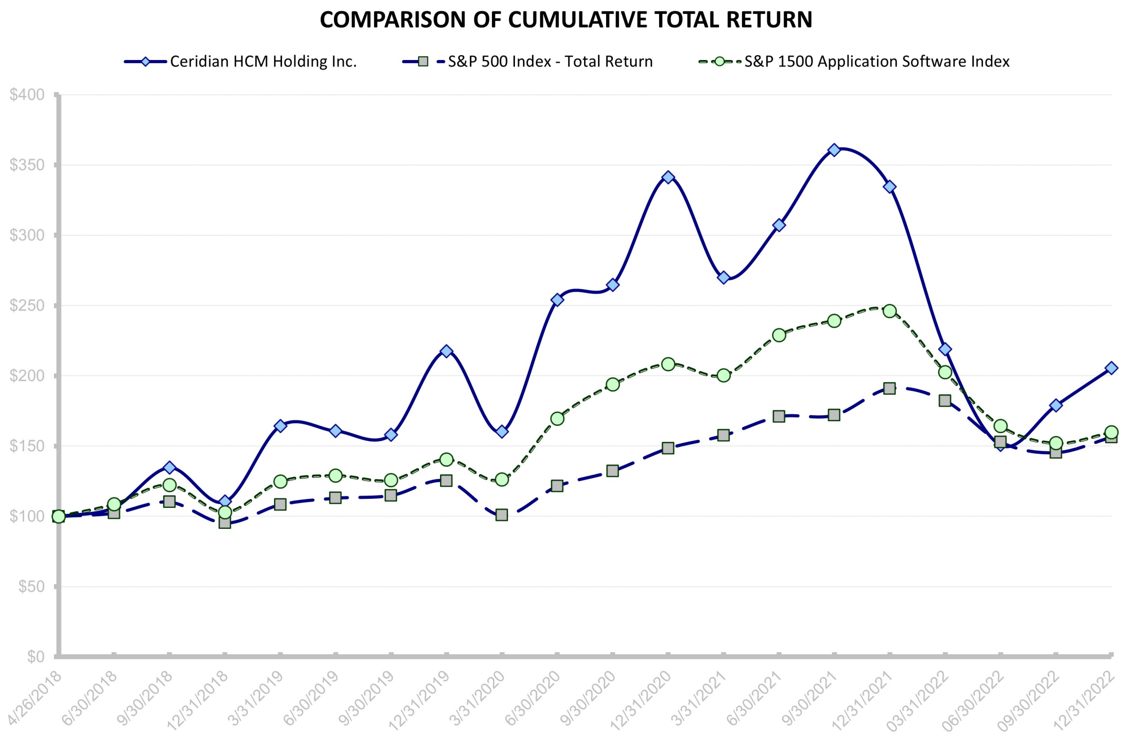
Issuer Purchases of Equity Securities

None.

Stock Performance Graph

The following shall not be deemed "filed" for purposes of Section 18 of the Exchange Act, or incorporated by reference into any of our other filings under the Exchange Act or the Securities Act, except to the extent we specifically incorporate it by reference into such filing.

The following graph compares the cumulative total shareholder returns on our common stock with the cumulative total return on the S&P 500 Index and the S&P 1500 Application Software Index. The graph assumes $100 was invested in each, based on closing prices, from our first trading day to the last trading day of each quarter for the period April 26, 2018 (the date our common stock began trading on the NYSE) through December 31, 2022. Stock price performance shown in the Stock Performance Graph for our common stock is historical and not necessarily indicative of future performance.



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Item 6. [Reserved]

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

The following is a discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and the related notes thereto included elsewhere in this report. This discussion and analysis contains forward-looking statements, including statements regarding industry outlook, our expectations for the future of our business, and our liquidity and capital resources as well as other non-historical statements. These statements are based on current expectations and are subject to numerous risks and uncertainties, including but not limited to the risks and uncertainties described in "Risk Factors" and "Forward-Looking Statements." Our actual results may differ materially from those contained in or implied by these forward-looking statements.

The following discussion and analysis of our financial condition and results of operations covers fiscal 2022 and fiscal 2021 items and year-over-year comparisons between fiscal 2022 and fiscal 2021. Discussions of fiscal 2020 items and year-over-year comparisons between fiscal 2021 and 2020 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2021, that was filed with the SEC on February 28, 2022.

Overview

Ceridian is a global HCM software company. We categorize our solutions into two categories: Cloud and Bureau solutions. Cloud revenue is primarily generated from HCM solutions that are delivered via two Cloud offerings: Dayforce, our flagship Cloud HCM platform, and Powerpay, a Cloud HR and payroll solution for the Canadian small business market. We also continue to support customers using our legacy North America Bureau solutions, which we generally stopped actively selling to new customers following the acquisition of Dayforce, and customers using our acquired Bureau solutions in APJ. We invest in maintenance and necessary updates to support our Bureau customers and continue to migrate them to Dayforce. Revenue from our Cloud and Bureau solutions includes investment income generated from holding customer funds before they are remitted to taxing authorities, also referred to as float revenue or float.

Dayforce provides HR, payroll, workforce management, benefits, and talent intelligence functionality. Our platform is used by organizations of all sizes, from small businesses to global organizations, regardless of industry, to optimize management of the entire employee lifecycle, including attracting, engaging, paying, deploying, and developing their people. Dayforce was built as a single application from the ground up that combines a modern, consumer-grade user experience with proprietary application architecture, including a single employee record and a rules engine spanning all areas of HCM. Dayforce provides continuous real-time calculations across all modules to enable, for example, payroll administrators access to data through the entire pay period, and managers access to real-time data to optimize work schedules. Our platform is designed to ease administrative work for both employees and managers, creating opportunities for companies to increase employee engagement. We sell Dayforce through our direct sales force and partner ecosystem on a subscription per-employee, per-month ("PEPM") basis. Our subscriptions are typically structured with an initial fixed term of between three and five years, with evergreen renewal thereafter.

We have rapidly grown the Dayforce platform to 5,993 live Dayforce customers, representing approximately 5.9 million global employees as of December 31, 2022.* In 2022, we added 559 net new live Dayforce customers. Our customers vary across industries, and no single customer constituted more than 10% of our revenues for the year ended December 31, 2022. Our annual Dayforce revenue retention rate continues to exceed 95% due to our focus on solving complex problems and our superior customer experience.

Dayforce Wallet is a digital payment solution for customers' employees on the Dayforce platform, which was launched in the U.S. in 2020, Canada in 2021, and the United Kingdom in 2022. The Dayforce Wallet gives our customers' employees greater control over their financial well-being by providing them with instant access to their earnings. This on-demand pay feature allows employees more choice over when they get paid by making any day payday. Dayforce Wallet enables workers to access their already-earned wages anytime during the pay period, net of taxes, withholdings and other payroll deductions. Leveraging Dayforce's continuous pay calculations, Dayforce Wallet processes a same-day payroll each time a worker requests their pay. The solution is compliant with federal, state, and local remittances and requires no changes to payroll processing including the funding, timing, and close-out of pay. The on-demand wages are loaded onto a paycard, which customers' employees can use anywhere credit or debit cards are accepted, generating interchange fee revenue. The Dayforce Wallet mobile app makes it easy for customers' employees to check their pay deposits, account balance and transaction history.

As of December 31, 2022, we had more than 1,450 customers signed onto Dayforce Wallet with over 880 customers live on the product and the average registration rate was above 45% of all eligible employees.

*Excluding the 2021 acquisitions of Ascender and ADAM HCM

Our Business Model

Our business model focuses on supporting the rapid growth of Dayforce and maximizing the lifetime value of our Dayforce customer relationships. Due to our subscription model, where we recognize subscription revenues ratably over the term of the subscription period, and our high customer retention rates, we have a high level of visibility into our future revenues. The profitability of a customer depends, in large part, on how long they have been a customer. We estimate that it takes approximately two years before we are able to recover our implementation, customer acquisition, and other direct costs on a new Dayforce customer contract.

Over the lifetime of the customer relationship, we have the opportunity to realize additional PEPM revenue, both as the customer grows or rolls out the Dayforce solution to additional employees, and also by selling additional functionality to existing customers that do not currently utilize our full suite of capabilities. We also incur costs to manage the account, to retain customers, and to sell additional functionality. These costs, however, are significantly less than the costs initially incurred to acquire and to take customers live.

Revenues

We generate recurring revenues primarily from recurring fees charged for the use of our Cloud solutions, Dayforce and Powerpay, as well as from our Bureau solutions. We also generate professional services and other revenue associated primarily with the work performed to assist customers with the planning, design, and implementation of their Cloud-based solution. Our solutions are typically provided through long-term customer relationships that result in a high level of recurring revenue. We also generate recurring revenue from investment income on our Cloud and Bureau customer funds before such funds are remitted to taxing authorities, customer employees, or other third parties. We refer to this investment income as float revenue.

For Dayforce, we primarily charge monthly recurring fees on a 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 and other users at the customer. Our standard Dayforce contracts are generally for a three to five-year period. The average time it takes to implement Dayforce typically ranges from three months for smaller customers to twelve months for larger customers. We begin to generate recurring revenue when we provide a production instance to the customer. We also provide outsourced human resource solutions to certain of our Dayforce customers, which are tailored to meet their individual needs, and entail performing the duties of a customer’s human resources department, including payroll processing, time and labor management, performance management, and recruiting, as needed.

The Powerpay offering serves our 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. Powerpay can typically be implemented on a remote basis within one to three days, at which point we start receiving recurring fees.

For our Bureau solutions, we typically charge recurring fees 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 ACA management.

Global Events

In March 2020, the World Health Organization declared the outbreak of COVID-19 to be a pandemic. The global spread of the COVID-19 pandemic created significant global volatility, uncertainty, and economic disruption. We experienced curtailed customer demand, primarily as a result of declining employment levels at our customers in certain sectors, such as retail and hospitality, as well as lower customer utilization of professional services, due to the effects of the COVID-19 pandemic. While we experienced adverse impacts on our revenue in 2021 and 2020, we ended 2021 with employment levels at our customers in-line with pre-pandemic levels. Additionally, the federal funds rate cuts by the U.S. Federal Reserve and the overnight rate target by the Bank of Canada had negative effects on our float revenue in 2021 and 2020. Conversely, the federal funds rate hikes by the U.S. Federal Reserve and the overnight rate target by the Bank of Canada in 2022 has had positive effects on our float revenue in 2022. The continued, broader implications of the pandemic on our results of operations and overall financial performance will depend on numerous evolving factors. Consequently, the extent of any potential future impacts of COVID-19 remain uncertain and cannot be reasonably estimated. Please refer to Part II, Item 1A "Risk Factors" for further discussion of the potential impact of the pandemic on our business.

In February 2022, the Russian Federation ("Russia") and Belarus commenced a military action with the country of Ukraine. We are closely monitoring the unfolding events due to the Russia-Ukraine conflict and its regional and global ramifications. We do not have operations in Russia, Ukraine or Belarus. We are monitoring any broader economic impact from the current crisis, including increased cybersecurity risks. The specific impact on our financial condition, results of operations, and cash flows is not material as of the date of these financial statements. However, to the extent that such military action spreads to other countries, intensifies, or otherwise remains active, such action could adversely affect our business, financial condition, and results of operations.

How We Assess Our Performance

In assessing our performance, we consider a variety of performance indicators in addition to revenue and net income (loss). Set forth below is a description of our key performance measures.

	Year Ended December 31,		
	2022	2021	2020
Live Dayforce customers (a)	5,993	5,434	4,906
Cloud annualized recurring revenue (ARR) (a,b,d) (in millions)	$ 1,041.3	$ 779.8	$ 617.9
Annual Dayforce revenue retention rate (a,b,d)	97.1 %	97.1 %	96.0 %
Dayforce recurring revenue per customer (c,d)	$ 121,425	$ 108,631	$ 98,655
Adjusted EBITDA (d) (in millions)	$ 250.4	$ 162.5	$ 159.0
Adjusted EBITDA margin (d)	20.1 %	15.9 %	18.9 %

(a)Excluding the 2021 acquisitions of Ascender and ADAM HCM.

(b)Annual Dayforce revenue retention rate and Cloud ARR are calculated on an annual basis, and the disclosure reflects data as of the most recent fiscal year end. Please see below for further explanation.

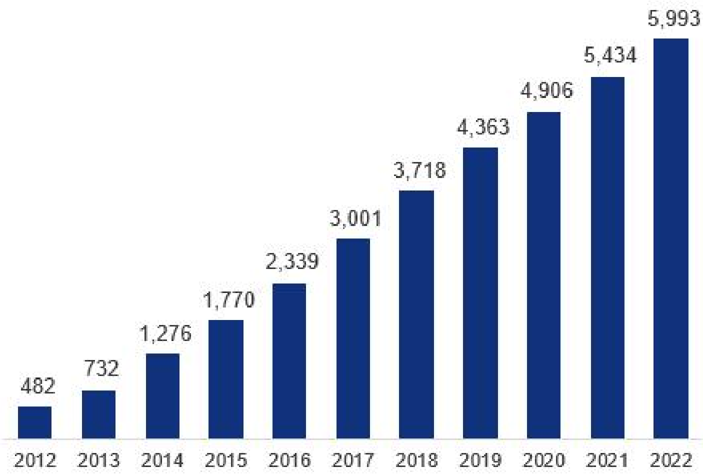
(c)Excluding float revenue, the impact of lower employment levels in 2021 and 2020 due to the COVID-19 pandemic, Ascender and ADAM HCM revenue, and on a constant currency basis.

(d) Please refer to the "Non-GAAP Measures" and "Results of Operations" sections below for further description and definition of this performance indicator which is considered a non-GAAP financial measure.

Live Dayforce Customers

We use the number of live Dayforce customers as an indicator of future revenue and the overall performance of the business and to assess the performance of our implementation services. We market Dayforce to customers of all sizes, including small (under 500 employees), major (500 to 5,999 employees), and enterprise (6,000 or more employees).

The following table sets forth the number of live Dayforce customers* at the end of the years presented:



Cloud Annualized Recurring Revenue ("ARR")

We use Cloud annualized recurring revenue ("ARR"), a non-GAAP financial measure, to measure the size and growth of our recurring Cloud business, which we believe is useful to management and investors. We derive the majority of our Cloud revenues from recurring fees, primarily PEPM subscription charges. We also derive recurring revenue from fees related to the rental and maintenance of clocks, charges for once-a-year services, such as year-end tax statements, and float revenue on our customer funds before such funds are remitted to taxing authorities, customer employees, or other third parties. We set annual targets for Cloud ARR and monitor progress toward those targets on a quarterly basis.

Annual Dayforce Revenue Retention Rate

We use annual Dayforce revenue retention rate, a non-GAAP financial measure, to measure the percentage of revenues that we retain from our existing Dayforce customers, which we believe is useful to management and investors as an indicator of customer satisfaction and future revenues. Our annual Dayforce revenue retention rate has been above 97% for the years ended December 31, 2022 and 2021, and above 95% for the year ended December 31, 2020. We set annual targets for Dayforce revenue retention rate and monitor progress toward those targets on a quarterly basis by reviewing known and anticipated customer losses. Our Dayforce revenue retention rate may fluctuate as a result of a number of factors, including the mix of Dayforce solutions used by customers, the level of customer satisfaction, and changes in the number of users live on our Dayforce solutions.

Dayforce Recurring Revenue Per Customer

We use Dayforce recurring revenue per customer, a non-GAAP financial measure, as an indicator of the average size of our Dayforce customer, which we believe is also useful to management and investors. We calculate and monitor Dayforce recurring revenue per customer on a quarterly basis. Our Dayforce recurring revenue per customer may fluctuate as a result of a number of factors, including the number of live Dayforce customers and the number of customers purchasing the full HCM suite.

*Excluding the 2021 acquisitions of Ascender and ADAM HCM.

Constant Currency Revenue

We present revenue on a constant currency basis to assess how our underlying business performed, excluding the effect of foreign currency rate fluctuations. We believe this non-GAAP financial measure is useful to management and investors. We have calculated revenue on a constant currency basis by applying the average foreign exchange rate in effect during the comparable prior period. The average U.S. dollar to Canadian dollar foreign exchange rate was $1.30, with a daily range of $1.25 to $1.39 for the twelve months ended December 31, 2022, compared to $1.25, with a daily range of $1.20 to $1.29 for the twelve months ended December 31, 2021. As of December 31, 2022, the U.S. dollar to Canadian dollar foreign exchange rate was $1.36.

EBITDA, Adjusted EBITDA and Adjusted EBITDA margin

We believe that EBITDA, Adjusted EBITDA, and Adjusted EBITDA margin, non-GAAP financial measures, are useful to management and investors as supplemental measures to evaluate our overall operating performance. Adjusted EBITDA and Adjusted EBITDA margin are components of our management incentive plan and are used by management to assess performance and to compare our operating performance to our competitors. Management believes that EBITDA, Adjusted EBITDA, and Adjusted EBITDA margin are helpful in highlighting management performance trends because EBITDA, Adjusted EBITDA and Adjusted EBITDA margin exclude the results of decisions that are outside the normal course of our business operations.

Recent Events

Acquisitions

On May 29, 2020, we completed the purchase of 100% of the outstanding shares of Excelity Global Solutions Pte. Ltd. (“Excelity”) for $77.2 million. Excelity is a human capital management service provider in the APJ region.

On March 1, 2021, we completed the purchase of 100% of the outstanding shares of Ascender HCM Pty Limited (“Ascender”) for $359.6 million. Ascender is a payroll and HR solutions provider in the APJ region.

On April 30, 2021, we acquired 100% of the outstanding shares of O5 Systems, Inc. dba Ideal (“Ideal”) for $41.4 million. Ideal is a talent intelligence software provider based in Toronto, Ontario, Canada.

On October 4, 2021, we completed the acquisition of certain assets and liabilities of DataFuzion HCM, Inc. (“DataFuzion”), for $12.5 million in cash consideration and future contingent consideration payments. DataFuzion designs, implements, and supports customer specific data solutions that integrate HCM and ERP systems on their FUZE platform.

On December 3, 2021, we completed the acquisition of 100% of the outstanding interests in ATI ROW, LLC and ADAM HCM MEXICO, S. de R.L. de C.V. (collectively, "ADAM HCM") for $34.5 million. ADAM HCM is a payroll and HCM company in Latin America.

Financing and Other

In March 2021, we issued $575.0 million in aggregate principal amount of 0.25% Convertible Senior Notes due 2026. In connection with the pricing of the Convertible Senior Notes, we entered into capped call transactions with the option counterparties.

On December 15, 2021, we sold our St. Petersburg, Florida facility for $40 million, resulting in a gain on the sale of $19.1 million, which was recognized in the consolidated statements of operations within selling, general, and administrative expense.

The OCC authorized the Ceridian National Trust Bank to open on January 3, 2023. Effective on this day, the Ceridian National Trust Bank commenced banking operations, acting as trustee for our U.S. payroll trust.

Historically, certain aspects of our U.S. client money movement activity have been subject to regulation at both the federal and individual state levels with resulting inherent complexity across multiple jurisdictions. With the establishment of the Ceridian National Trust Bank, regulatory oversight will now be under the OCC, a single federal government agency.

Our payroll trust structure will continue to benefit our customers by providing bankruptcy-remoteness protection for client funds pending remittance to employees of our clients, tax authorities, and other payees.

Results of Operations

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

The following table sets forth our results of operations for the periods presented:

	Year Ended December 31, 2022	Year Ended December 31, 2021	Increase/ (Decrease) Amount	Increase/ (Decrease) %	% of Revenue 2022	% of Revenue 2021
	(Dollars in millions)					
Revenue:						
Recurring						
Cloud	$ 908.4	$ 712.9	$ 195.5	27.4%	72.9%	69.6%
Bureau	139.2	137.8	1.4	1.0%	11.2%	13.5%
Total recurring	1,047.6	850.7	196.9	23.1%	84.1%	83.1%
Professional services and other	198.6	173.5	25.1	14.5%	15.9%	16.9%
Total revenue	1,246.2	1,024.2	222.0	21.7%	100.0%	100.0%
Cost of revenue:						
Recurring						
Cloud	254.4	197.7	56.7	28.7%	20.4%	19.3%
Bureau	55.0	64.7	(9.7)	(15.0)%	4.4%	6.3%
Total recurring	309.4	262.4	47.0	17.9%	24.8%	25.6%
Professional services and other	238.7	194.6	44.1	22.7%	19.2%	19.0%
Product development and management	169.9	134.0	35.9	26.8%	13.6%	13.1%
Depreciation and amortization	55.0	50.9	4.1	8.1%	4.4%	5.0%
Total cost of revenue	773.0	641.9	131.1	20.4%	62.0%	62.7%
Gross profit	473.2	382.3	90.9	23.8%	38.0%	37.3%
Selling, general, and administrative	499.0	417.8	81.2	19.4%	40.0%	40.8%
Operating loss	(25.8)	(35.5)	9.7	27.3%	(2.1)%	(3.5)%
Interest expense, net	28.6	35.9	(7.3)	(20.3)%	2.3%	3.5%
Other expense, net	8.5	18.9	(10.4)	(55.0)%	0.7%	1.8%
Loss before income taxes	(62.9)	(90.3)	27.4	30.3%	(5.0)%	(8.8)%
Income tax expense (benefit)	10.5	(14.9)	25.4	170.5%	0.8%	(1.4)%
Net loss	(73.4)	(75.4)	2.0	2.7%	(5.9)%	(7.4)%
Net profit margin (a)	(5.9)%	(7.4)%	1.5%	20.0%		
Adjusted EBITDA (b)	$ 250.4	$ 162.5	$ 87.9	54.1%	20.1%	15.9%
Adjusted EBITDA margin (b)	20.1%	15.9%	4.2%	26.6%		

(a)Net profit margin is determined by calculating the percentage that net income (loss) is of total revenue.

(b) Please refer to the "Non-GAAP Measures" section for a discussion and reconciliation of Adjusted EBITDA and Adjusted EBITDA margin, non-GAAP financial measures.

Revenue. The following table sets forth certain information regarding our consolidated revenues for periods presented:

	Year Ended December 31, 2022	Year Ended December 31, 2021	Percentage change in revenue as reported 2022 vs. 2021	Impact of changes in foreign currency (a)	Percentage change in revenue on a constant currency basis (a) 2022 vs. 2021
	(Dollars in millions)				
Revenue:					
Dayforce recurring, excluding float	$ 752.8	$ 596.9	26.1 %	(1.6)%	27.7 %
Dayforce float	62.4	29.7	110.1 %	(3.0)%	113.1 %
Total Dayforce recurring	815.2	626.6	30.1 %	(1.6)%	31.7 %
Powerpay recurring, excluding float	80.7	78.2	3.2 %	(4.0)%	7.2 %
Powerpay float	12.5	8.1	54.3 %	(7.4)%	61.7 %
Total Powerpay recurring	93.2	86.3	8.0 %	(4.3)%	12.3 %
Total Cloud recurring	908.4	712.9	27.4 %	(2.0)%	29.4 %
Dayforce professional services and other	181.7	159.3	14.1 %	(2.5)%	16.6 %
Powerpay professional services and other	0.7	0.9	(22.2)%	(—)%	(22.2)%
Total Cloud professional services and other	182.4	160.2	13.9 %	(2.5)%	16.4 %
Total Cloud revenue	1,090.8	873.1	24.9 %	(2.1)%	27.0 %
Bureau recurring, excluding float	133.9	134.5	(0.4)%	(3.6)%	3.2 %
Bureau float	5.3	3.3	60.6 %	(3.0)%	63.6 %
Total Bureau recurring	139.2	137.8	1.0 %	(3.6)%	4.6 %
Bureau professional services and other	16.2	13.3	21.8 %	(6.8)%	28.6 %
Total Bureau revenue	155.4	151.1	2.8 %	(4.0)%	6.8 %
Total revenue	$ 1,246.2	$ 1,024.2	21.7 %	(2.3)%	24.0 %
Dayforce	$ 996.9	$ 785.9	26.8 %	(1.9)%	28.7 %
Powerpay	93.9	87.2	7.7 %	(4.2)%	11.9 %
Total Cloud revenue	$ 1,090.8	$ 873.1	24.9 %	(2.1)%	27.0 %
Dayforce, excluding float	$ 934.5	$ 756.2	23.6 %	(1.7)%	25.3 %
Powerpay, excluding float	81.4	79.1	2.9 %	(3.9)%	6.8 %
Cloud revenue, excluding float	1,015.9	835.3	21.6 %	(2.0)%	23.6 %
Cloud float	74.9	37.8	98.1 %	(4.0)%	102.1 %
Total Cloud revenue	$ 1,090.8	$ 873.1	24.9 %	(2.1)%	27.0 %
Cloud recurring, excluding float	$ 833.5	$ 675.1	23.5 %	(1.8)%	25.3 %
Bureau recurring, excluding float	133.9	134.5	(0.4)%	(3.6)%	3.2 %
Total recurring, excluding float	967.4	809.6	19.5 %	(2.1)%	21.6 %
Total revenue, excluding float	$ 1,166.0	$ 983.1	18.6 %	(2.3)%	20.9 %

(a)We have calculated revenue on a constant currency by applying the average foreign exchange rate in effect during the comparable prior period.

Total revenue increased $222.0 million, or 21.7%, to $1,246.2 million for the year ended December 31, 2022, compared to $1,024.2 million for the year ended December 31, 2021. This increase was primarily driven by an increase in live Dayforce customers, the increase in Dayforce recurring revenue per customer, revenue in 2022 from businesses acquired during 2021, and the increase in float revenue. The number of live Dayforce customers increased 10.3% to 5,993 at December 31, 2022 from 5,434 at December 31, 2021. At the end of 2022, our 5,993 live Dayforce customers represented approximately 5.9 million global employees*. Additionally for the trailing twelve months ended December 31, 2022, Dayforce recurring revenue per customer grew to $121,425 compared to $108,631 for the comparable period in 2021.

*Excluding the 2021 acquisitions of Ascender and ADAM HCM.

The increase in Dayforce recurring revenue per customer is driven by our growing global customer base and the growing average size of our customers, as we have been expanding within the enterprise segment. At the end of 2022, enterprise businesses accounted for 51% of the total number of global employees, major businesses accounted for 41% of the total number of global employees, and small businesses accounted for 8% of the total number of global employees.*

The increase in float revenue is driven by the 12.4% increase in average float balance for our customer funds for the year ended December 31, 2022, which increased to $4,370.7 million, compared to $3,889.5 million for the year ended December 31, 2021, in addition to an increase in average yield of 76 basis points compared to the year ended December 31, 2021.

Cost of revenue. Total cost of revenue for the year ended December 31, 2022, was $773.0 million, an increase of $131.1 million, or 20.4%, compared to the year ended December 31, 2021. Recurring cost of revenue increased by $47.0 million for the year ended December 31, 2022, compared to the year ended December 31, 2021, primarily due to the integration of our APJ acquisitions, specifically $21.0 million of severance and restructuring costs associated with re-balancing our global footprint. Further, the increase in recurring cost of revenue is due to additional costs related to global expansion and costs to support the growing Dayforce customer base. The increase in cost of revenue for professional services and other of $44.1 million for the year ended December 31, 2022, compared to the year ended December 31, 2021, was primarily due to costs incurred to take new customers live.

Product development and management expense increased $35.9 million for the year ended December 31, 2022, compared to the year ended December 31, 2021. The increase reflects additional personnel costs, including share-based compensation and severance. For the years ended December 31, 2022, and 2021, our investment in software development was $162.2 million and $131.7 million, respectively, consisting of $92.3 million and $81.1 million of research and development expense, and $69.9 million and $50.6 million of capitalized software development, respectively. Please refer to Note 2, “Summary of Significant Accounting Policies,” for further discussion of our accounting policy for capitalizing internally developed software costs.

Depreciation and amortization expense associated with cost of revenue increased by $4.1 million for the year ended December 31, 2022, compared to the year ended December 31, 2021, as we continue to capitalize Dayforce related and other development costs and subsequently amortize those costs.

Gross profit and gross margin. Total gross profit for the year ended December 31, 2022, increased by $90.9 million, or 23.8%, compared to the year ended December 31, 2021. The increase in gross profit was primarily attributable to the $39.1 million increase in float revenue and total gross margin expansion for the year ended December 31, 2022, compared to the year ended December 31, 2021.

The following table presents total gross margin and solution gross margins for the periods presented:

	Year Ended December 31,	
	2022	**2021**
Total gross margin	38.0%	37.3%
Gross margin by solution:		
Cloud recurring	72.0%	72.3%
Bureau recurring	60.5%	53.0%
Professional services and other	(20.2)%	(12.2)%

Total gross margin is defined as total gross profit as a percentage of total revenue, which is inclusive of product development and management costs, as well as depreciation and amortization associated with cost of revenue. Gross margin for each solution in the table above is defined as total revenue less cost of revenue for the applicable solution as a percentage of total revenue for that related solution, which is exclusive of any product development and management or depreciation and amortization cost allocations.

*Excluding the 2021 acquisitions of Ascender and ADAM HCM.

Cloud recurring gross margin was 72.0% for the year ended December 31, 2022, compared to 72.3% for the year ended December 31, 2021. The decrease in Cloud recurring gross margin is primarily due to the integration of our APJ acquisitions, specifically a re-balancing of our resources across our global footprint resulting in severance and restructuring costs, partially offset by the increase in float revenue and an increase in the proportion of Dayforce customers live for more than two years, which increased from 80% as of December 31, 2021 to 82% as of December 31, 2022. Bureau recurring gross margin increased from 53.0% for the year ended December 31, 2021, to 60.5% for the year ended December 31, 2022 reflecting higher associated float revenue. Professional services and other gross margin was (20.2)% for the year ended December 31, 2022, declining from (12.2)% for the year ended December 31, 2021, reflecting additional costs incurred to take new customers live, expansion of our capabilities to serve international customers, and increased share-based compensation.

Selling, general, and administrative expense. Selling, general, and administrative expense increased $81.2 million for the year ended December 31, 2022, compared to the year ended December 31, 2021. Excluding the impact of share-based compensation and related employer taxes, severance expense, amortization of acquisition-related intangible assets, and certain other non-recurring items, selling, general, and administrative expenses would have increased $43.6 million. This adjusted increase of $43.6 million was due to increases of $23.5 in general and administrative expense and $20.1 million in sales and marketing expenses, both of which are primarily driven by employee-related costs. The increase in sales and marketing expense represents investment in our sales force in order to support our growth initiatives. Please refer to the "Non-GAAP Measures" section for additional information on the excluded items.

Operating loss. Operating loss for the year ended December 31, 2022, was $25.8 million, compared to $35.5 million for the year ended December 31, 2021. The $9.7 million change was primarily due to the increase in float revenue and gross margin expansion, partially offset by the increase in selling, general, and administrative expense.

Interest expense, net. Interest expense, net for the year ended December 31, 2022, was $28.6 million, compared to $35.9 million for the year ended December 31, 2021. The $7.3 million decrease in interest expense, net was primarily due to the adoption of ASU 2020-06 in 2022 which eliminated the non-cash interest expense related to the amortization of the debt discount on our Convertible Senior Notes, partially offset by an increase in interest expense on our Term Debt due to the increase in LIBOR rates.

Other expense, net. For the years ended December 31, 2022 and 2021, other expense, net of $8.5 million and $18.9 million, respectively, was comprised of net periodic pension expense and foreign currency translation loss.

Income tax expense (benefit). For the years ended December 31, 2022 and 2021, we had income tax expense of $10.5 million and income tax benefit of $14.9 million, respectively. The $25.4 million increase in tax expense was primarily due to increases of $12.9 million attributed to share-based compensation, $7.1 million attributed to U.S. Global Intangible Low Tax Income regime, and $5.8 million attributed to current operations. We record a valuation allowance to reduce our deferred tax assets to reflect the net deferred tax assets that we believe will be realized. As of December 31, 2022, we will continue to record a valuation allowance against certain deferred tax assets including state net operating loss carryovers and tax basis intangibles.

Net loss. Net loss was $73.4 million for the year ended December 31, 2022, compared to $75.4 million for the year ended December 31, 2021. The slight decrease in net loss is primarily due to an increase in revenue, including float revenue, as well as the reduction in interest expense and other expense, partially offset by higher investments in product development and selling capabilities, share-based compensation, further integration of the APJ acquisitions, specifically a re-balancing of our resources across our global footprint, and the non-recurring gain of $19.1 million on the sale of our St. Petersburg, Florida facility in 2021. For the years ended December 31, 2022 and 2021, net profit margin was (5.9)% and (7.4)%, respectively.

Adjusted EBITDA. Adjusted EBITDA increased by $87.9 million to $250.4 million, for the year ended December 31, 2022, compared to the year ended December 31, 2021, primarily due to the increase in float revenue and gross margin expansion, partially offset by the increase in sales and marketing and product development and management expense. Adjusted EBITDA margin increased to 20.1% in 2022 from 15.9% in 2021. Adjusted EBITDA, excluding float revenue, increased $48.8 million to $170.2 million, for the year ended December 31, 2022, compared to the year ended December 31, 2021. Please refer to the "Non-GAAP Measures" section for a discussion and reconciliation of Adjusted EBITDA and Adjusted EBITDA margin and additional information on the excluded items.

Liquidity and Capital Resources

Our primary sources of liquidity are our existing cash and equivalents, cash provided by operating activities, availability under our Revolving Credit Facility, and proceeds from debt issuance and equity offerings. As of December 31, 2022, we had cash and equivalents of $431.9 million and there was no amount drawn on our Revolving Credit Facility of $300 million.

Our primary liquidity needs are related to funding of general business requirements, including the payment of interest and principal on our debt, capital expenditures, product development, and funding Dayforce Wallet on demand pay requests on behalf of our customers. From time to time, we have made investments in businesses or acquisitions of companies. Our total debt balance was $1,234.5 million as of December 31, 2022. Please refer to Note 9, "Debt," to our consolidated financial statements and "Our Indebtedness" section below for further information on our debt.

As of December 31, 2022 and 2021, we held $0.8 million and $1.9 million, respectively, of restricted cash as collateral for bank guarantees. The bank guarantees provide financial assurance that we will fulfill certain lease obligations. The cash is restricted as to withdrawal or use while the related bank guarantee is outstanding.

On February 26, 2021, we elected to borrow $295.0 million under the Revolving Credit Facility to fund our acquisition of Ascender on March 1, 2021. We repaid the $295.0 million draw on March 5, 2021 with proceeds from the issuance of our Convertible Senior Notes.

In March 2021, we issued $575.0 million in aggregate principal amount of 0.25% Convertible Senior Notes due 2026. The total net proceeds from the offering, after deducting initial purchase discounts and issuance costs, were $561.8 million. In connection with the Convertible Senior Notes, we entered into capped call transactions which are expected to reduce the potential dilution of our common stock upon any conversion of the Convertible Senior Notes and/or offset any cash payments we could be required to make in excess of the principal amount of converted Convertible Senior Notes. We used an aggregate amount of $45.0 million of the net proceeds of the Convertible Senior Notes to purchase the Capped Calls. We used the remainder of the net proceeds from the offering (i) to repay $295.0 million principal amount under the Revolving Credit Facility and pay related accrued interest and (ii) for general corporate purposes.

On December 15, 2021, we completed the second amendment to the Senior Secured Credit Facility, in which the maturity date of the Revolving Credit Facility was extended from April 30, 2023 to January 29, 2025.

We believe that our cash flow from operations, availability under our Revolving Credit Facility, and available cash and equivalents will be sufficient to meet our liquidity needs for the foreseeable future. Dayforce Wallet on demand pay requests are currently funded from our operating cash balances, until it is reimbursed by the customers through their normal payroll funding cycles. We evaluate the creditworthiness of each customer for the Dayforce Wallet feature. We anticipate that to the extent that we require additional liquidity, it will be funded through the issuance of equity, the incurrence of additional indebtedness, or a combination thereof. We cannot provide assurance that we will be able to obtain this additional liquidity on reasonable terms, or at all. Additionally, our liquidity and our ability to meet our obligations and to fund our capital requirements and Dayforce Wallet on demand pay requests are also dependent on our future financial performance, which is subject to general economic, financial, and other factors that are beyond our control. Accordingly, we cannot provide assurance that our business will generate sufficient cash flow from operations or that future borrowings will be available from additional indebtedness or otherwise to meet our liquidity needs. If we decide to pursue one or more significant acquisitions, we may incur additional debt or sell additional equity to finance such acquisitions, which would result in additional expenses or dilution.

Our customer 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. The customer assets are held in segregated accounts intended for the specific purpose of satisfying customer funding obligations and therefore are not freely available for our general business use. Please refer to Note 5, "Customer Funds," for further discussion of these funds.

Statements of Cash Flows

Changes in cash flows due to purchases of customer fund marketable securities and proceeds from the sale or maturity of customer fund marketable securities, as well as the carrying value of customer fund accounts as of period end dates can vary significantly due to several factors, including the specific day of the week the period ends, which impacts the timing of funds collected from customers and payments made to satisfy customer obligations to employees, taxing authorities, and others. The customer funds are fully segregated from our operating cash accounts and are evaluated and tracked separately by management. The table below summarizes the activity within the consolidated statements of cash flows:

	Year Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Net cash provided by (used in) operating activities	$ 132.6	$ 48.8	$ (30.2)
Net cash (used in) provided by investing activities	(342.5)	(711.1)	38.8
Net cash provided by financing activities	870.1	407.5	565.3
Effect of exchange rate on cash and equivalents	(8.1)	(20.9)	(4.0)
Net increase (decrease) in cash, restricted cash, and equivalents	652.1	(275.7)	569.9
Cash, restricted cash, and equivalents at beginning of period	1,952.8	2,228.5	1,658.6
Cash, restricted cash, and equivalents at end of period	2,604.9	1,952.8	2,228.5
Cash and equivalents	$ 431.9	$ 367.5	$ 188.2
Restricted cash and equivalents	2,173.0	1,585.3	2,040.3
Total cash, restricted cash, and equivalents	$ 2,604.9	$ 1,952.8	$ 2,228.5

Operating Activities

Net cash provided by operating activities was $132.6 million during the year ended December 31, 2022, compared to $48.8 during the year ended December 31, 2021. For both periods, cash inflows from operating activities are primarily generated from the subscriptions of our solutions. Cash outflows from operating activities for both periods are primarily comprised of personnel-related expenditures that are integral to our business operations. The net positive cash inflow in both periods is primarily due to our growing revenue and collections of such revenue, partially offset by our operating costs, mainly, investment in our sales force to support our growth initiatives and our product development and management costs which are not eligible for capitalization.

Investing Activities

During the year ended December 31, 2022, net cash used in investing activities was $342.5 million, related to net purchases of customer funds marketable securities of $248.0 million, and capital expenditures of $94.5 million. Our capital expenditures included $74.3 million for software and technology and $20.2 million for property and equipment.

During the year ended December 31, 2021, net cash used in investing activities was $711.1 million, related to acquisition costs, net of cash acquired, of $409.5 million, net purchase of customer funds marketable securities of $275.8 million, and capital expenditures of $63.7 million. Our capital expenditures included $52.2 million for software and technology and $11.5 million for property and equipment.

Financing Activities

Net cash provided by financing activities was $870.1 million during the year ended December 31, 2022. This cash inflow was primarily attributable to the net increase in our customer funds obligations of $840.1 million and proceeds from the issuance of common stock under share-based compensation plans of $38.4 million, partially offset by payments on our long-term debt obligations of $8.4 million.

Net cash provided by financing activities was $407.5 million during the year ended December 31, 2021. This cash inflow was primarily attributable to proceeds from the issuance of our Convertible Senior Notes of $561.8 million, and proceeds from the issuance of common stock under share-based compensation plans of $95.4 million, partially offset by the net decrease in our customer funds obligations of $195.7 million, purchase of the Capped Calls related to the Convertible Senior Notes of $45.0 million, and payments on our long-term debt obligations of $7.8 million.

Backlog and Seasonality

Backlog is equivalent to our remaining performance obligations, which represents contracted revenue for recurring 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. As of December 31, 2022, approximately $1,143.6 million of revenue is expected to be recognized over the next three years from remaining performance obligations.

For a discussion of seasonality, please refer to Part 1, Item I, "Business" of this Form 10-K.

Our Indebtedness

Our primary liquidity needs are related to funding of general business requirements, including the payment of interest and principal on our debt, capital expenditures, product development, and funding Dayforce Wallet on demand pay requests on behalf of our customers. From time to time, we have made investments in businesses or acquisitions of companies, which are also liquidity needs. We believe our current sources of liquidity will be sufficient to meet our liquidity needs for the foreseeable future. We anticipate that to the extent that we require additional liquidity, it will be funded through the issuance of equity, the incurrence of additional indebtedness, or a combination thereof. During 2021 and 2020, we incurred additional debt in the form of draws on our Revolving Credit Facility, which was subsequently repaid, and issuance of our Convertible Senior Notes for purposes of either (i) conserving our liquidity position during the uncertainty created by the COVID-19 pandemic, and (ii) general corporate purposes, including acquisitions of companies.

Senior Secured Credit Facility

On April 30, 2018, we entered into a credit agreement pursuant to which the lenders agreed to provide Senior Secured Credit Facility, consisting of the Term Debt in the original principal amount of $680.0 million and a $300.0 million Revolving Credit Facility. The Revolving Credit Facility may, at our option, be made available in United States Dollars, Canadian Dollars, Euros and/or Pounds Sterling; up to $70.0 million may, at our option, be made available for letters of credit and $100.0 million may, at our option, be made available for swingline loans (denominated in Canadian Dollars and/or United States Dollars).

The Term Debt will mature on April 30, 2025. We are required to make annual amortization payments in respect of the Term Debt in an amount equal to 1.00% of the original principal amount thereof, payable in equal quarterly installments of 0.25% of the original principal amount of the first lien term debt. On December 15, 2021, we completed the second amendment to our Senior Secured Credit Facility, which extended the maturity of the Revolving Credit Facility from April 30, 2023 to January 29, 2025. The Revolving Credit Facility does not require amortization payments.

Convertible Senior Notes

In March 2021, we issued $575.0 million in aggregate principal amount of 0.25% Convertible Senior Notes due 2026. The total net proceeds from the offering, after deducting initial purchase discounts and issuance costs, were $561.8 million. In connection with the Convertible Senior Notes, we entered into capped call transactions which are expected to reduce the potential dilution of our common stock upon any conversion of the Convertible Senior Notes and/or offset any cash payments we could be required to make in excess of the principal amount of converted Notes. We used an aggregate amount of $45.0 million of the net proceeds of the Convertible Senior Notes to purchase the Capped Calls. We used the remainder of the net proceeds from the offering (i) to repay $295.0 million principal amount under the Revolving Credit Facility and pay related accrued interest and (ii) for general corporate purposes.

For an additional description of the Senior Secured Credit Facility and the Senior Convertible Notes, please refer to Note 9, "Debt," to our consolidated financial statements.

Contractual Obligations

Our future contractual obligations generally consist of long-term debt, leases, retirement plans, and vendor payments. Our long-term debt obligations are described in Note 9, "Debt," to our consolidated financial statements, and the "Our Indebtedness" section above.

As of December 31, 2022, all of our facilities are leased. Most of these leases contain renewal options and require payments for taxes, insurance, and maintenance. We also lease equipment for use in our business. We ceased use of certain leased facilities during 2021 and 2020 and recognized lease abandonment charges within our consolidated statements of operations; however, we are still required to make future payments under the existing lease terms. Refer to Note 15, "Leases," to our consolidated financial statements for additional discussion of our leases.

Payments of retirement plan obligations include employer commitments to fund our defined benefit and postretirement plans and do not include estimated future benefit payments to participants expected to be made from liquidation of the assets in our defined benefit plan trusts. During the year ended December 31, 2020, we contributed $105.0 million to our largest U.S. pension plan, satisfying all expected contributions for the foreseeable future for this defined benefit plan. As of December 31, 2022, our defined benefit pension plans had a projected benefit obligation that exceeded the fair value of the plans' assets by $11.1 million and our postretirement benefit plan had a projected benefit obligation that exceeded the fair value of the plans' assets by $8.8 million. We expect to satisfy these remaining obligations through investment income from and appreciation in the fair value of plan assets and from future employer contributions. Refer to Note 10, "Employee Benefit Plans," to our consolidated financial statements for additional discussion of our employee benefit plans.

The amount of our future contractual obligation to vendors as of December 31, 2022 was not material.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements and related notes, which have been prepared in accordance with GAAP. The preparation of these financial statements and related notes requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue, and expenses. Certain of our accounting policies require the application of significant judgment by management in selecting the appropriate assumptions for calculating financial estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. These judgments are based on our historical experience, terms of existing contracts, our evaluation of trends in the industry, information provided by our customers, and information available from other outside sources, as appropriate. We evaluate our estimates and judgments on an on-going basis. Our actual results may differ from these estimates. We believe the following is our critical accounting estimate:

Revenue Recognition

Description: We recognize revenue for professional services and Cloud subscription services performance obligations based on an allocation of the total transaction price to each performance obligation using the respective stand-alone selling prices ("SSP"). This can result in revenue being recognized in an amount that exceeds the amount we are contractually allowed to bill our customer as of a certain point in time, resulting in the recognition of a contract asset up until the period at which billings are equal to or exceed revenue recognition. We recognized $182.4 million of Cloud professional services revenue for the year ended December 31, 2022, and the related contract assets were $68.5 million as of December 31, 2022.

Judgments and Uncertainties: The determination of our stand-alone selling price for the performance obligations requires us to make assumptions based on market conditions and observable inputs, as well as an estimate of the total professional service hours expected to be incurred in connection with each customer implementation.

Sensitivity of Estimate to Change: The consideration allocated to professional services performed to activate a new customer is recognized as professional services revenues based on the proportion of total work performed to date compared to an estimation of total work expected to complete the implementation project for that customer account. To the extent this consideration exceeds the customer billings, a contract asset would be recognized, as professional services revenue related to implementation activities is generally recognized at the beginning of the contract.

Please refer to Note 2, "Summary of Significant Accounting Policies," for a description of our revenue recognition policy and our significant accounting policies.

Recently Issued Accounting Pronouncements

Please refer to Note 2, "Summary of Significant Accounting Policies," for a full discussion of recent accounting pronouncements.

Non-GAAP Measures

We use certain non-GAAP financial measures in this document including EBITDA, Adjusted EBITDA, Adjusted EBITDA margin, Adjusted operating profit, Adjusted net income, Adjusted diluted net income per share, revenue on a constant currency basis, Cloud ARR, Annual Dayforce revenue retention rate, and Dayforce recurring revenue per customer. We believe that these non-GAAP financial measures are useful to management and investors as supplemental measures to evaluate our overall operating performance including comparison across periods and with competitors. Our management team uses these non-GAAP financial measures to assess operating performance because these measures exclude the results of decisions that are outside the normal course of our business operations, and are used for internal budgeting and forecasting purposes both for short- and long-term operating plans. Additionally, Adjusted EBITDA and Adjusted EBITDA margin are components of our management incentive plan. These non-GAAP financial measures are not required by, defined under, or presented in accordance with, GAAP, and should not be considered as alternatives to our results as reported under GAAP, have important limitations as analytical tools, and our use of these terms may not be comparable to similarly titled measures of other companies in our industry. Our presentation of non-GAAP financial measures should not be construed to imply that our future results will be unaffected by similar items to those eliminated in this presentation.

We define our non-GAAP financial measures as follows:

•EBITDA as net income (loss) before interest, taxes, depreciation, and amortization, and Adjusted EBITDA as EBITDA, as adjusted to exclude foreign exchange gains (losses), share-based compensation expense and related employer taxes, severance charges, restructuring consulting fees, and certain other non-recurring items.

•Adjusted EBITDA margin is determined by calculating the percentage that Adjusted EBITDA is of total revenue.

•Adjusted operating profit is defined as operating profit (loss), as adjusted to exclude foreign exchange gains (losses), share-based compensation expense and related employer taxes, severance charges, restructuring consulting fees, amortization of acquisition-related intangible assets, and other non-recurring items.

•Adjusted net income is defined as net income (loss), as adjusted to exclude foreign exchange gains (losses), share-based compensation expense and related employer taxes, severance charges, restructuring consulting fees, amortization of acquisition-related intangible assets, and other non-recurring items, all of which are adjusted for the effect of income taxes.

•Adjusted diluted net income per share is calculated by dividing adjusted net income by diluted weighted average common shares outstanding. When adjusted diluted net income per share is positive, diluted weighted average common shares outstanding incorporate the effect of dilutive equity instruments.

•Revenue on a constant currency basis is calculated by applying the average foreign exchange rate in effect during the comparable prior period.

•Cloud ARR is calculated by starting with recurring revenue at year end, excluding revenue from Ascender and ADAM HCM, subtracting the once-a-year charges, annualizing the revenue for customers live for less than a full year to reflect the revenue that would have been realized if the customer had been live for a full year, and adding back the once-a-year charges. We have not reconciled Cloud ARR because there is no directly comparable GAAP financial measure.

•Annual Dayforce revenue retention rate is calculated as a percentage, excluding Ascender and ADAM HCM, where the numerator is the Dayforce ARR for the prior year, less the Dayforce ARR from lost Dayforce customers during that year; and the denominator is the Dayforce ARR for the prior year. We have not reconciled Annual Dayforce revenue retention rate because there is no directly comparable GAAP financial measure.

•Dayforce recurring revenue per customer is an indicator of the average size of Dayforce recurring revenue customers. To calculate Dayforce recurring revenue per customer, we start with Dayforce recurring revenue on a constant currency basis by applying the same exchange rate to all comparable periods for the trailing twelve months and excludes float revenue, the impact of lower employment levels in 2021 and 2020 due to the COVID-19 pandemic, and Ascender and ADAM HCM revenue. This amount is divided by the number of live Dayforce customers at the end of the trailing twelve month period, excluding Ascender and ADAM HCM. We have not reconciled the Dayforce recurring revenue per customer because there is no directly comparable GAAP financial measure.

The following table reconciles our reported results to our non-GAAP financial measures EBITDA, Adjusted EBITDA, and Adjusted EBITDA margin for the periods presented:

	Year Ended December 31, 2022	2021
	(Dollars in millions)	
Net loss	$ (73.4)	$ (75.4)
Interest expense, net	28.6	35.9
Income tax expense (benefit)	10.5	(14.9)
Depreciation and amortization	89.0	77.5
EBITDA	54.7	23.1
Foreign exchange loss	3.5	9.5
Share-based compensation (a)	145.1	116.8
Severance charges (b)	33.7	7.4
Restructuring consulting fees (c)	7.7	16.7
Other non-recurring items (d)	5.7	(11.0)
Adjusted EBITDA	$ 250.4	$ 162.5
Net profit margin (e)	(5.9)%	(7.4)%
Adjusted EBITDA margin	20.1%	15.9%

(a)Represents share-based compensation expense and related employer taxes.
(b)Represents costs for severance compensation paid to employees whose positions have been eliminated or who have been terminated not for cause. During the twelve months ended December 31, 2022, we incurred severance charges in conjunction with the re-balancing of our workforce across our global footprint in the amount of $21.0 million within cost of recurring revenue.
(c)Represents consulting fees and expenses incurred during the periods presented in connection with any acquisition, investment, disposition, recapitalization, equity offering, issuance or repayment of debt, issuance of equity interests, or refinancing.
(d)Represents (1) the net impact of the abandonment of certain leased facilities, resulting in a net gain of $0.3 million in 2022 and $17.2 million in 2021 primarily as a result of the $19.1 million gain on the sale of the St. Petersburg, Florida facility, (2) the impact of $4.6 million and $0.6 million related to the fair value adjustments of the DataFuzion contingent consideration in 2022 and 2021, respectively, and (3) the difference of $1.4 million and $5.6 million in 2022 and 2021, respectively, between the historical five-year average pension expense and the current period actuarially determined pension expense associated with the planned termination of the frozen U.S. pension plan and related changes in investment strategy associated with protecting the now fully funded status.
(e)Net profit margin is determined by calculating the percentage that net loss is of total revenue.

The following tables reconciles our reported results to our non-GAAP financial measures Adjusted operating profit, Adjusted net income, and Adjusted diluted net income per share for the periods presented:

	Year Ended December 31, 2022				
	As reported	Share-based compensation	Severance charges	Other (a)	Adjusted (b)
	(Dollars in millions, except per share data)				
Cost of revenue:					
Recurring					
Cloud	$ 254.4	$ 14.2	$ 19.5	$ —	$ 220.7
Bureau	55.0	1.5	3.0	—	50.5
Total recurring	309.4	15.7	22.5	—	271.2
Professional services and other	238.7	13.7	0.7	—	224.3
Product development and management	169.9	24.7	4.2	—	141.0
Depreciation and amortization	55.0	—	—	—	55.0
Total cost of revenue	773.0	54.1	27.4	—	691.5
Sales and marketing	251.5	24.4	4.2	—	222.9
General and administrative	247.5	66.6	2.1	43.2	135.6
Operating (loss) profit	(25.8)	145.1	33.7	43.2	196.2
Other expense, net	8.5	—	—	4.6	3.9
Depreciation and amortization	89.0	—	—	(30.9)	58.1
EBITDA	$ 54.7	$ 145.1	$ 33.7	$ 16.9	$ 250.4
Interest expense, net	28.6	—	—	—	28.6
Income tax expense (benefit) (c)	10.5	—	—	(32.7)	43.2
Depreciation and amortization	89.0	—	—	30.9	58.1
Net (loss) income	$ (73.4)	$ 145.1	$ 33.7	$ 15.1	$ 120.5
Net (loss) income per share - basic (d)	$ (0.48)	$ 0.95	$ 0.22	$ 0.10	$ 0.79
Net (loss) income per share - diluted (d)	$ (0.48)	$ 0.93	$ 0.22	$ 0.10	$ 0.77

(a)Other includes amortization of acquisition-related intangible assets, restructuring consulting fees, the impact of the fair value adjustment for the DataFuzion contingent consideration, foreign exchange loss, the difference between the historical five-year average pension expense and the current period actuarially determined pension expense associated with the planned termination of the frozen U.S. pension plan and related changes in investment strategy associated with protecting the now fully funded status, and the net impact of the abandonment of certain leased facilities.
(b)The Adjusted column is a non-GAAP financial measure, adjusted to exclude foreign exchange gains (losses), share-based compensation expense and related employer taxes, severance charges, restructuring consulting fees, amortization of acquisition-related intangible assets, and other non-recurring items, all of which are adjusted for the effect of income taxes.
(c)Income tax effects have been calculated based on the statutory tax rates in effect in the U.S. and foreign jurisdictions during the period.
(d)Both GAAP and Adjusted net income (loss) per share are calculated by dividing either GAAP or Adjusted net income by the basic or diluted weighted average common shares outstanding. When adjusted diluted net income per share is positive, diluted weighted average common shares outstanding incorporate the effect of dilutive equity instruments. GAAP basic and diluted net loss per share are calculated based upon 152,940,299 weighted-average shares of common stock and Adjusted basic and diluted net income per share are calculated based upon 152,940,299 and 155,802,557 weighted-average shares of common stock, respectively.

	Year Ended December 31, 2021				
	As reported	Share-based compensation	Severance charges	Other (a)	Adjusted (b)
	(Dollars in millions, except per share data)				
Cost of revenue:					
Recurring					
Cloud	$ 197.7	$ 11.0	$ 0.5	$ —	$ 186.2
Bureau	64.7	1.9	1.5	—	61.3
Total recurring	262.4	12.9	2.0	—	247.5
Professional services and other	194.6	9.5	0.2	—	184.9
Product development and management	134.0	18.0	0.6	—	115.4
Depreciation and amortization	50.9	—	—	—	50.9
Total cost of revenue	641.9	40.4	2.8	—	598.7
Sales and marketing	218.5	13.8	1.9	—	202.8
General and administrative	199.3	62.6	2.7	21.9	112.1
Operating (loss) profit	(35.5)	116.8	7.4	21.9	110.6
Other expense, net	18.9	—	—	17.2	1.7
Depreciation and amortization	77.5	—	—	(23.9)	53.6
EBITDA	$ 23.1	$ 116.8	$ 7.4	$ 15.2	$ 162.5
Interest expense, net	35.9	—	—	—	35.9
Income tax (benefit) expense (c)	(14.9)	—	—	(23.6)	8.7
Depreciation and amortization	77.5	—	—	23.9	53.6
Net (loss) income	$ (75.4)	$ 116.8	$ 7.4	$ 15.5	$ 64.3
Net (loss) income per share - basic (d)	$ (0.50)	$ 0.78	$ 0.05	$ 0.10	$ 0.43
Net (loss) income per share - diluted (d)	$ (0.50)	$ 0.74	$ 0.05	$ 0.10	$ 0.41

(a)Other includes amortization of acquisition-related intangible assets, net gain related to the abandonment of certain leases, primarily as a result of the $19.1 million gain on the sale of our St. Petersburg, Florida facility, foreign exchange loss, restructuring consulting fees, the difference between the historical five-year average pension expense and the current period actuarially determined pension expense associated with the planned termination of the frozen U.S. pension plan and related changes in investment strategy associated with protecting the now fully funded status, and the impact of the fair value adjustment for the DataFuzion contingent consideration.
(b)The Adjusted column is a non-GAAP financial measure, adjusted to exclude foreign exchange gains (losses), share-based compensation expense and related employer taxes, severance charges, restructuring consulting fees, amortization of acquisition-related intangible assets, and other non-recurring items, all of which are adjusted for the effect of income taxes.
(c)Income tax effects have been calculated based on the statutory tax rates in effect in the U.S. and foreign jurisdictions during the period.
(d)Both GAAP and Adjusted net income (loss) per share are calculated by dividing either GAAP or Adjusted net income by the basic or diluted weighted average common shares outstanding. When adjusted diluted net income per share is positive, diluted weighted average common shares outstanding incorporate the effect of dilutive equity instruments. GAAP basic and diluted net loss per share are calculated based upon 150,402,321 weighted-average shares of common stock and Adjusted basic and diluted net income per share are calculated based upon 150,402,321 and 156,842,934 weighted-average shares of common stock, respectively.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risks related to foreign currency exchange rates, interest rates, and pension obligations. We seek to minimize or to manage these market risks through normal operating and financing activities. These market risks may be amplified by events and factors surrounding global events. We do not trade or use instruments with the objective of earning financial gains on the market fluctuations, nor do we use instruments where there are not underlying exposures.

Foreign Currency Risk. Our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates, particularly changes in the Canadian Dollar. Our exposure to foreign currency exchange rates has historically been partially hedged as our foreign currency denominated inflows create a natural hedge against our foreign currency denominated expenses. Accordingly, our results of operations and cash flows were not materially affected by fluctuation in foreign currency exchange rates, and we believe that a hypothetical 10% change in foreign currency exchange rates or an inability to access foreign funds would not materially affect our ability to meet our operational needs or result in a material foreign currency loss in the future. Due to the relative size of our international operations to date, we have not instituted an active hedging program. We expect our international operations to continue to grow in the near term, and we are monitoring the foreign currency exposure to determine if we should begin a hedging program.

Interest Rate Risk. Our operating results and financial condition are subject to fluctuations due to changes in interest rates, primarily in relation to: (1) our customer funds market valuation and float revenue derived therefrom, (2) our debt and the interest paid on such, and (3) our cash and equivalents and the interest income earned on these balances. Collectively, we do not believe that a change in interest rates of 100 basis points would have a material effect on our operating results or financial condition.

In certain jurisdictions, we collect funds for payment of payroll and taxes; temporarily hold such funds in segregated accounts until payment is due; remit the funds to the customers' employees and appropriate taxing authority; file federal, state and local tax returns; and handle related regulatory correspondence and amendments. We have exposure to risks associated with changes in laws and regulations that may affect customer fund balances. For example, a change in regulations, either reducing the amount of taxes to be withheld or allowing less time to remit taxes to government authorities, would reduce our average customer fund balances and float revenue.

Based on current market conditions, portfolio composition and investment practices, a 100 basis point increase in market investment rates would result in approximately $24 million increase in float revenue over the ensuing twelve month period. There are no incremental costs of revenue associated with changes in float revenue.

We pay floating rates of interest on our Term Debt and Revolving Credit Facility. The interest paid on these borrowings will fluctuate up or down in relation to changes in market interest rates. A 100 basis point increase in the LIBOR rates would result in approximately $7 million increase in our interest expense over the ensuring twelve-month period. Please refer to Note 9, "Debt," for additional information.

We do not enter into investments for trading or speculative purposes. Our cash equivalents and our portfolio of marketable securities are subject to market risk due to changes in interest rates. Fixed rate securities may have their market value adversely affected due to a rise in interest rates, while floating rate securities may produce less income than expected if interest rates fall. Due in part to these factors, our future investment income may fall short of expectation due to changes in interest rates or we may suffer losses in principal if we are forced to sell securities that decline in market value due to changes in interest rates.

However, because we classify our securities as "available for sale," no gains or losses are recognized due to changes in interest rates unless such securities are sold prior to maturity or declines in fair value are determined to be unrecoverable. Fluctuations in the value of our investment securities caused by a change in interest rates (gains or losses on the carrying value) are recorded in other comprehensive income, and are realized only if we sell the underlying securities.

Pension Obligation Risk. We provide a pension plan for certain current and former U.S. employees that closed to new participants on January 2, 1995. In 2007, the U.S. pension plan was amended (1) to exclude from further participation any participant or former participant who was not employed by the company 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. In applying relevant accounting policies, we have made estimates related to actuarial assumptions, including assumptions of expected returns on plan assets, discount rates, and health care cost trends. The cost of pension benefits in future periods will depend on actual returns on plan assets, assumptions for future periods, contributions, and benefit experience. As of December 31, 2022, the projected benefit obligation ("PBO") exceeded the fair value of plan assets by $11.1 million. Please refer to Note 10, "Employee Benefit Plans," for additional information.

The effective discount rate used in accounting for pension and other benefit obligations in 2022 ranged from 4.72% to 4.84%. The expected rate of return on plan assets for qualified pension benefits in 2022 was 3.30%. The following table reflects the estimated sensitivity associated with a change in certain significant actuarial assumptions (each assumption change is presented mutually exclusive of other assumption changes):

		Impact on 2023 Pension Expense Increase (Decrease)	
	Change in Assumption	**Pension Benefits**	**Post Retirement**
		(Dollars in millions)	
Increase in discount rate	50 basis points	$ 0.1	$ —
Decrease in discount rate	50 basis points	$ (0.1)	$ —
Increase in return on plan asset	50 basis points	$ (2.2)	N/A
Decrease in return on plan asset	50 basis points	$ 2.2	N/A

Item 8. Financial Statements and Supplementary Data.

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Ceridian HCM Holding Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Ceridian HCM Holding Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, 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, 2022, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022 based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

Critical Audit Matters

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

Customer funds and customer funds obligations

As discussed in Note 5 to the consolidated financial statements, in connection with the Company's payroll and tax services, it (1) collects funds for payment of payroll and taxes, (2) temporarily holds such funds until payment is due, and (3) remits the funds to its customers' employees and taxing authorities. The Company collects and manages large amounts of data and its applications are inherently complex. At December 31, 2022, customer funds and customer funds obligations were $4.2 billion and $4.3 billion, respectively.

We identified the evaluation of the sufficiency of audit evidence over customer funds and customer funds obligations as a critical audit matter. Specifically, complex auditor judgment was required to determine that the receipt and expenditure of funds used to develop the customer funds and customer funds obligations balances at December 31, 2022, reconciled to customers' transaction data. This matter required the use of information technology (IT) professionals with specialized skills and knowledge.

The following are the primary procedures we performed to address this critical audit matter. We applied auditor judgment to determine the nature and extent of procedures to be performed to determine that the receipt and expenditure of funds used to develop the customer funds and customer funds obligations balances at December 31, 2022, reconciled to customers' transaction data, including the extent of involvement of IT professionals. We evaluated the design and tested the operating effectiveness of certain internal controls related to the customer funds and customer funds obligations process. Specifically, we involved IT professionals with specialized skills and knowledge, who assisted in the identification and testing of general IT controls and process level IT risks and controls related to:

- receipt of customer transaction data
- the communication of that data to (1) banks for the purpose of receiving and expending customer funds, and to (2) the Company's IT systems used to track customer funds and customer funds obligations.

We evaluated the customer funds and customer funds obligations by obtaining the amounts from the Company's IT systems used to track customer funds and customer funds obligations, and comparing them to the general ledger, third-party bank statements or confirmations, and underlying documentation for reconciling items. We evaluated the sufficiency of audit evidence obtained by assessing the results of procedures performed, including the appropriateness of the nature and extent of such evidence.

Stand-alone selling price (SSP) of cloud Dayforce professional services

As discussed in Note 2 and Note 12 to the consolidated financial statements, the Company recognized $181.7 million of cloud Dayforce professional services and other revenue for the year ended December 31, 2022, and $68.5 million of contract assets as of December 31, 2022. Cloud Dayforce professional services includes implementation services to activate new accounts. The Company's cloud services arrangements include multiple performance obligations and the transaction price allocation is based on the SSP for the performance obligations. The SSP for cloud Dayforce implementation services is estimated based on market conditions and observable inputs, including rates charged by third parties to perform implementation services, as well as an estimate of the hours expected to be incurred.

We identified the assessment of the Company's estimated hours expected to be incurred that were used to determine the SSP of cloud Dayforce implementation services as a critical audit matter. Subjective auditor judgment was required to evaluate the professional services hours assumption that involved unobservable market data and was susceptible to manipulation.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's estimated hours to be incurred that were used to determine the SSP of cloud Dayforce implementation services. To evaluate the Company's retrospective review of its estimated implementation services hours, we compared the historical estimated implementation hours to actual implementation hours incurred for a selection of contracts. For a sample of contracts entered into during the year ended December 31, 2022:

- we obtained the Company's models for allocating the transaction price and compared certain inputs in those models to the project managers estimate of implementation service hours to be incurred and to the results of the Company's retrospective review of its estimated implementation service hours
- we inquired of the project manager regarding the estimation of the total hours to be incurred.

/s/ KPMG LLP

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

Minneapolis, Minnesota
March 1, 2023

Ceridian HCM Holding Inc.
Consolidated Balance Sheets

(Dollars in millions, except share data)	December 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and equivalents	$ 431.9	$ 367.5
Restricted cash	0.8	1.9
Trade and other receivables, net	180.1	146.3
Prepaid expenses and other current assets	98.0	92.6
Total current assets before customer funds	710.8	608.3
Customer funds	4,183.2	3,535.8
Total current assets	4,894.0	4,144.1
Right of use lease asset	24.3	29.4
Property, plant, and equipment, net	174.9	128.2
Goodwill	2,280.0	2,323.6
Other intangible assets, net	281.6	332.5
Other assets	262.4	208.4
Total assets	$ 7,917.2	$ 7,166.2
LIABILITIES AND EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 7.8	$ 8.3
Current portion of long-term lease liabilities	10.0	11.3
Accounts payable	54.3	51.7
Deferred revenue	41.2	48.7
Employee compensation and benefits	97.4	77.3
Other accrued expenses	24.0	24.7
Total current liabilities before customer funds obligations	234.7	222.0
Customer funds obligations	4,298.8	3,519.9
Total current liabilities	4,533.5	3,741.9
Long-term debt, less current portion	1,213.4	1,124.4
Employee benefit plans	17.7	20.7
Long-term lease liabilities, less current portion	23.7	32.7
Other liabilities	19.5	19.0
Total liabilities	5,807.8	4,938.7
Commitments and contingencies (Note 16)		
Stockholders' equity:		
Common stock, $0.01 par, 500,000,000 shares authorized, 153,856,645 and 151,995,031 shares issued and outstanding, respectively	1.5	1.5
Additional paid in capital	2,965.5	2,860.0
Accumulated deficit	(372.6)	(309.2)
Accumulated other comprehensive loss	(485.0)	(324.8)
Total stockholders' equity	2,109.4	2,227.5
Total liabilities and equity	$ 7,917.2	$ 7,166.2

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Consolidated Statements of Operations

	Year Ended December 31,		
	2022	2021	2020
	(Dollars in millions, except share and per share data)		
Revenue:			
Recurring	$ 1,047.6	$ 850.7	$ 690.2
Professional services and other	198.6	173.5	152.3
Total revenue	1,246.2	1,024.2	842.5
Cost of revenue:			
Recurring	309.4	262.4	213.3
Professional services and other	238.7	194.6	163.7
Product development and management	169.9	134.0	83.7
Depreciation and amortization	55.0	50.9	40.5
Total cost of revenue	773.0	641.9	501.2
Gross profit	473.2	382.3	341.3
Selling, general, and administrative	499.0	417.8	333.5
Operating (loss) profit	(25.8)	(35.5)	7.8
Interest expense, net	28.6	35.9	25.1
Other expense, net	8.5	18.9	2.7
Loss before income taxes	(62.9)	(90.3)	(20.0)
Income tax expense (benefit)	10.5	(14.9)	(16.0)
Net loss	$ (73.4)	$ (75.4)	$ (4.0)
Net loss per share:			
Basic	$ (0.48)	$ (0.50)	$ (0.03)
Diluted	$ (0.48)	$ (0.50)	$ (0.03)
Weighted-average shares outstanding:			
Basic	152,940,299	150,402,321	146,774,471
Diluted	152,940,299	150,402,321	146,774,471

See accompanying notes to consolidated financial statements.

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

	Year Ended December 31, 2022	2021	2020
	(Dollars in millions)		
Net loss	$ (73.4)	$ (75.4)	$ (4.0)
Items of other comprehensive (loss) income before income taxes:			
Change in foreign currency translation adjustment	(56.7)	(17.6)	18.7
Change in unrealized (loss) gain from invested customer funds	(134.6)	(48.4)	38.4
Change in pension liability adjustment (a)	(5.8)	6.0	21.2
Other comprehensive (loss) income before income taxes	(197.1)	(60.0)	78.3
Income tax (benefit) expense, net	(36.9)	(11.2)	15.9
Other comprehensive (loss) income after income taxes	(160.2)	(48.8)	62.4
Comprehensive (loss) income	$ (233.6)	$ (124.2)	$ 58.4

(a)The amount of the pension liability adjustment recognized in the consolidated statements of operations within other expense, net was $11.7 million, $15.1 million, and $13.2 million during the years ended December 31, 2022, 2021, and 2020, respectively.

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Consolidated Statements of Stockholders' Equity

	Common Stock Shares	Common Stock $	Additional Paid In Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	(Dollars in millions, except share data)					
Balance as of December 31, 2019	144,386,618	$ 1.4	$ 2,449.1	$ (229.8)	$ (338.4)	$ 1,882.3
Net loss	—	—	—	(4.0)	—	(4.0)
Issuance of common stock under share-based compensation plans	4,184,794	0.1	91.6	—	—	91.7
Share-based compensation	—	—	65.8	—	—	65.8
Foreign currency translation	—	—	—	—	18.7	18.7
Change in unrealized gain, net of tax of $10.2	—	—	—	—	28.2	28.2
Change in pension liability adjustment, net of tax of $5.7	—	—	—	—	15.5	15.5
Balance as of December 31, 2020	148,571,412	$ 1.5	$ 2,606.5	$ (233.8)	$ (276.0)	$ 2,098.2
Net loss	—	—	—	(75.4)	—	(75.4)
Issuance of common stock under share-based compensation plans	3,423,619	—	95.4	—	—	95.4
Share-based compensation	—	—	113.4	—	—	113.4
Foreign currency translation	—	—	—	—	(17.6)	(17.6)
Change in unrealized loss, net of tax of ($12.8)	—	—	—	—	(35.6)	(35.6)
Change in pension liability adjustment, net of tax of $1.6	—	—	—	—	4.4	4.4
Equity component of convertible senior notes	—	—	77.7	—	—	77.7
Purchase of capped calls related to convertible senior notes	—	—	(33.0)	—	—	(33.0)
Balance as of December 31, 2021	151,995,031	$ 1.5	$ 2,860.0	$ (309.2)	$ (324.8)	$ 2,227.5
Net loss	—	—	—	(73.4)	—	(73.4)
Cumulative-effect adjustments related to the adoption of ASU 2020-06	—	—	(77.7)	10.0	—	(67.7)
Issuance of common stock under share-based compensation plans	1,861,614	—	38.4	—	—	38.4
Share-based compensation	—	—	144.8	—	—	144.8
Foreign currency translation	—	—	—	—	(56.7)	(56.7)
Change in unrealized loss, net of tax of ($35.4)	—	—	—	—	(99.2)	(99.2)
Change in pension liability adjustment, net of tax of ($1.5)	—	—	—	—	(4.3)	(4.3)
Balance as of December 31, 2022	153,856,645	$ 1.5	$ 2,965.5	$ (372.6)	$ (485.0)	$ 2,109.4

See accompanying notes to consolidated financial statements.

Ceridian HCM Holding Inc.
Consolidated Statements of Cash Flows

	Year Ended December 31, 2022	2021	2020
	(Dollars in millions)		
Net loss	$ (73.4)	$ (75.4)	$ (4.0)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Deferred income tax benefit	(1.7)	(38.5)	(7.0)
Depreciation and amortization	89.0	77.5	51.8
Amortization of debt issuance costs and debt discount	4.6	16.9	1.2
Provision for doubtful accounts	2.2	1.8	2.0
Net periodic pension and postretirement cost	4.8	8.8	3.3
Share-based compensation	144.8	113.4	65.8
Change in fair value of contingent consideration	4.6	0.6	—
Gain on sale of assets	—	(19.1)	—
Lease abandonment costs	—	2.9	16.8
Other	(0.2)	0.9	1.0
Changes in operating assets and liabilities excluding effects of acquisitions and divestitures:			
Trade and other receivables	(39.5)	(34.8)	(12.0)
Prepaid expenses and other current assets	(11.4)	(12.3)	(6.8)
Accounts payable and other accrued expenses	(0.2)	9.3	(1.4)
Deferred revenue	(5.6)	5.5	(1.2)
Employee compensation and benefits	21.2	2.3	(104.0)
Accrued interest	0.2	0.4	—
Accrued taxes	7.5	0.4	(3.7)
Other assets and liabilities	(14.3)	(11.8)	(32.0)
Net cash provided by (used in) operating activities	132.6	48.8	(30.2)
Cash Flows from Investing Activities			
Purchase of customer funds marketable securities	(652.8)	(763.8)	(212.4)
Proceeds from sale and maturity of customer funds marketable securities	404.8	488.0	369.3
Expenditures for property, plant, and equipment	(20.2)	(11.5)	(18.1)
Expenditures for software and technology	(74.3)	(52.2)	(41.7)
Net proceeds from sale of assets	—	37.9	—
Acquisition costs, net of cash and restricted cash acquired	—	(409.5)	(58.3)
Net cash (used in) provided by investing activities	(342.5)	(711.1)	38.8
Cash Flows from Financing Activities			
Increase (decrease) in customer funds obligations, net	840.1	(195.7)	483.6
Proceeds from issuance of common stock under share-based compensation plans	38.4	95.4	91.7
Repayment of long-term debt obligations	(8.4)	(7.8)	(10.0)
Proceeds from revolving credit facility	—	295.0	295.0
Repayment of revolving credit facility	—	(295.0)	(295.0)
Proceeds from issuance of convertible senior notes, net of issuance costs	—	561.8	—
Purchases of capped calls related to convertible senior notes	—	(45.0)	—
Payment of debt refinancing costs	—	(1.2)	—
Net cash provided by financing activities	870.1	407.5	565.3
Effect of exchange rate changes on cash, restricted cash, and equivalents	(8.1)	(20.9)	(4.0)
Net increase (decrease) in cash, restricted cash, and equivalents	652.1	(275.7)	569.9
Cash, restricted cash, and equivalents at beginning of year	1,952.8	2,228.5	1,658.6
Cash, restricted cash, and equivalents at end of year	$ 2,604.9	$ 1,952.8	$ 2,228.5
Reconciliation of cash, restricted cash, and equivalents to the consolidated balance sheets			
Cash and equivalents	$ 431.9	$ 367.5	$ 188.2
Restricted cash	0.8	1.9	—
Restricted cash and equivalents included in customer funds	2,172.2	1,583.4	2,040.3
Total cash, restricted cash, and equivalents	$ 2,604.9	$ 1,952.8	$ 2,228.5
Supplemental Cash Flow Information			
Cash paid for interest	$ 30.1	$ 19.1	$ 26.7
Cash paid for income taxes	17.6	33.4	4.2
Cash received from income tax refunds	8.0	3.3	9.6

See accompanying notes to consolidated financial statements.

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. While we operate in 18 countries globally, our operations are primarily located in the United States and Canada.

2. Summary of Significant Accounting Policies

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 Funds,” for further information on our accounting for these funds.

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 equity awards 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.

Cash and Equivalents

As of December 31, 2022 and 2021, 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 and the reserve for sales adjustments. 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, Net

Our property, plant, and equipment assets are stated at cost less accumulated 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:

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 $0.8 million and $0.4 million in property, plant, and equipment, net during the years ended December 31, 2022 and 2021, respectively. Property, plant, and equipment assets are assessed for impairment as described under the heading "Impairment of Long-Lived Assets" below.

Business Combinations

In accordance with Accounting Standards Codification ("ASC") Topic 805, *Business Combinations,* we use the acquisition method of accounting and allocate the fair value of purchase consideration to the assets acquired and liabilities assumed based on their respective estimated fair values as of the acquisition date. Goodwill represents the excess of purchase consideration transferred over the estimated fair value of the identifiable net assets acquired in a business combination.

Assigning estimated fair values to the net assets acquired requires the use of significant estimates, judgments, inputs, and assumptions regarding the fair value of the assets acquired and liabilities assumed. Estimated fair values of assets acquired and liabilities assumed are generally based on available historical information, independent valuations or appraisals, future expectations, and assumptions determined to be reasonable but are inherently uncertain with respect to future events, including economic conditions, competition, the useful life of the acquired assets, and other factors. The measurement period for assigning fair values to the net assets acquired will end when the information, or the facts and circumstances, becomes available, but will not exceed one year from the date of acquisition. The judgments made in determining the estimated fair value assigned to assets acquired and liabilities assumed, as well as the estimated useful life and depreciation or amortization method of each asset, can materially impact the net earnings of the periods subsequent to the acquisition through depreciation and amortization, and in certain instances through impairment charges, if the asset becomes impaired in the future. During the measurement period, any purchase price allocation changes that impact the carrying value of goodwill affects any measurement of goodwill impairment taken during the measurement period, if applicable. If necessary, purchase price allocation revisions that occur outside of the measurement period are recorded within our consolidated statement of operations depending on the nature of the adjustment.

Refer to Note 3, "Business Combinations", for additional information regarding our accounting for recent business combinations.

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 intangible assets, which consist of trade names, are not amortized against earnings, but instead are tested for impairment on an annual basis, or more frequently if certain events or circumstances occur that could indicate impairment. We perform our annual assessment of goodwill and indefinite-lived intangible assets as of October 1.

We assess goodwill impairment risk by comparing the fair value of the net assets with the carrying amount of the reporting unit. We determine the fair value of the reporting unit based on our market capitalization at the testing date. If the carrying amount of the goodwill exceeds the fair value of the reporting unit, goodwill may be impaired. To the extent that the carrying amount of the reporting unit exceeds the fair value of the reporting unit, an impairment loss is recognized.

We assess indefinite-lived intangible assets impairment by performing a qualitative review. If the qualitative assessment indicates it is more likely than not the fair value of an indefinite-lived intangible asset is less than the carrying amount, a quantitative test is applied and, 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 trade name. 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.

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	4-12 years
Trade name	3-5 years
Technology	3-5 years

Internally Developed Software Costs

In accordance with 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. Research and development costs, product management, and other software maintenance costs related to software development are expensed as incurred.

We had capitalized software costs, net of accumulated amortization, of $133.4 million and $92.8 million as of December 31, 2022, and 2021, respectively, included in property, plant, and equipment, net 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 $43.5 million, $37.0 million, and $30.6 million for the years ended December 31, 2022, 2021, and 2020, 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. As of December 1, 2022, we increased the expected period of benefit of our deferred sales commissions from five years to ten years. This change in accounting estimate and related customer period of benefit is largely attributable to new evidence of longer customer relationships such as increases in the proportion of new customer contracts greater than three years as well as our continued high customer retention rates. The change was made on a prospective basis. The effect of this change reduced amortization expense by $3.2 million for the twelve months ended December 31, 2022. The change in estimate will also impact future periods, with an estimated reduction to amortization expense in the range of $35 million to $37 million for the twelve months ended December 31, 2023.

Deferred costs included within Other assets on our consolidated balance sheets were $151.2 million and $144.5 million as of December 31, 2022 and 2021, respectively. Amortization expense for the deferred costs was $48.9 million, $46.4 million, and $38.8 million for the years ended December 31, 2022, 2021, and 2020, 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; 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. 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 when an instance is provisioned to the customer. 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 Revenues

For our Dayforce solutions, we primarily charge monthly recurring fees on a 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 customer contract has an initial term between three and five years. 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 revenue from investment income on our Cloud and Bureau customer funds 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, and implementation of their solutions. Also included in professional services are any related training services, post-implementation professional services, and shipment of time clocks purchased by customers. 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 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 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 solutions. Research and development expense was $92.3 million, $81.1 million, and $39.6 million for the years ended December 31, 2022, 2021, and 2020, 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 $11.3 million, $7.5 million, and $5.5 million for the years ended December 31, 2022, 2021, and 2020, 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, and the provision for doubtful accounts receivable.

Other Expense (Income), Net

Other expense (income), net includes the results of transactions that are not appropriately classified in another category. These items are primarily foreign currency translation gains and losses resulting from transactions denominated in foreign currencies and net periodic pension costs.

Income Taxes

Income taxes have been provided for using the asset and liability method. 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 income tax expense (benefit).

Fair Value of Financial Instruments

The carrying amounts of cash and equivalents, trade and other receivables, net, customer 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 awards 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.

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, 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-based and certain performance-based stock awards, 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 awards. The estimated volatility of our common stock is based on volatility data for selected comparable public companies, including the historical volatility of our stock price, over the expected term of our stock awards. 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 recognize stock compensation expense using the straight-line method.

For performance-based stock options with a market condition, a Monte Carlo simulation model is used to determine the fair value. The Monte Carlo model utilizes multiple input variables that determine the probability of satisfying the market conditions stipulated in the award.

We estimate forfeitures at the time of grant based on historical data and record share-based compensation expense for those awards expected to vest.

Pension and Other Postretirement Benefits Liability

We present information about our pension and postretirement benefit plans in Note 10, "Employee Benefit Plans" to our consolidated financial statements. 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 $6.7 million on the liabilities and an immaterial impact 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 $1.1 million.

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 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 expense (income), net.

Recently Issued and Adopted Accounting Pronouncements

Standard	Issuance Date	Description	Adoption Date	Effect on the Financial Statements
Accounting Standards Update ("ASU") 2020-06, Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40)	August 2020	This amendment simplifies the accounting for convertible instruments by removing certain separation models required under current GAAP for (1) convertible debt with a cash conversion feature and (2) convertible instruments with a beneficial conversion feature. As a result, a convertible debt instrument will be accounted for as a single liability measured at its amortized cost.	January 2022	We adopted the guidance as of January 1, 2022, using the modified retrospective method of transition. The adoption resulted in the elimination of the debt discount (and related deferred tax liability) that was recorded within equity related to our Convertible Senior Notes. The net impact of the adjustments was recorded to the opening balance of accumulated deficit and additional paid in capital. The impact to the consolidated balance sheet was as follows: (1) increase of $92.9 million to long-term debt, (2) decrease of $77.7 million to additional paid-in capital, net of allocated issuance costs of $2.7 million and deferred tax impact of $28.2 million, and (3) decrease to accumulated deficit of $10.0 million.
ASU 2022-06, Reference Rate Reform (Topic 848): Deferral of the Sunset Date of Topic 848	December 2022	This amendment provides optional expedients and exceptions for applying GAAP to contracts, hedging relationships, and other transactions affected by reference rate reform if certain criteria are met. The amendments apply only to contracts, hedging relationships, and other transactions that reference LIBOR or another reference rate expected to be discontinued because of reference rate reform.	Not yet adopted	This amendment may be elected over time through December 31, 2024 as reference rate reform activities occur. We do not expect the adoption of this guidance to have a significant impact on our financial statements.

3. Business Combinations

Ascender

On March 1, 2021, we completed the purchase of 100% of the outstanding shares of Ascender HCM Pty Limited (“Ascender”) for $359.6 million. Ascender is a payroll and human resources solutions provider in the Asia Pacific Japan ("APJ") region. We entered into a forward foreign currency contract to hedge the purchase price for the Ascender acquisition which was denominated in Australian dollars, resulting in the recognition of a realized gain of $4.2 million for the year ended December 31, 2021, included as a component of other expense, net in our consolidated statement of operations.

The financial results of Ascender have been included within our consolidated financial statements from the acquisition date forward and are classified among both Cloud and Bureau solutions. The purchase accounting was considered complete as of December 31, 2021. The intangible assets consist of $76.5 million of customer relationships, $55.0 million of developed technology, and $6.5 million of trade name. Of the goodwill associated with this acquisition, no amount is deductible for income tax purposes. The goodwill of $242.8 million arising from the Ascender acquisition is primarily attributable to the synergies to enable both multi-national customers and customers within the APJ region to leverage one global HCM platform, Dayforce, as well as the assembled workforce of Ascender.

The major classes of assets and liabilities to which we have allocated the purchase price were as follows:

	(Dollars in millions)	
Cash and equivalents	$	5.1
Restricted cash		2.0
Trade receivables, prepaid expenses, and other current assets		16.0
Customer funds		18.9
Property, plant, and equipment		13.1
Goodwill		242.8
Other intangible assets		138.0
Other assets		18.8
Accounts payable and other current liabilities		(33.4)
Customer funds obligations		(18.8)
Other non-current liabilities		(42.9)
Total purchase price	$	359.6

Ideal

On April 30, 2021, we completed the purchase of 100% of the outstanding shares of O5 Systems, Inc. dba Ideal ("Ideal") for $41.4 million. Ideal is a talent intelligence software provider based in Toronto, Ontario, Canada.

The financial results of Ideal have been included within our consolidated financial statements from the acquisition date forward and are classified as a Cloud solution. The purchase accounting was considered complete as of December 31, 2021. The intangible assets consist of $18.0 million of developed technology, $0.2 million of trade name, and $0.1 million of customer relationships. Of the goodwill associated with this acquisition, no amount is deductible for income tax purposes.

The major classes of assets and liabilities to which we have allocated the purchase price were as follows:

	(Dollars in millions)	
Cash and equivalents	$	2.6
Trade receivables, prepaid expenses, and other current assets		1.0
Property, plant, and equipment		0.1
Goodwill		26.3
Other intangible assets		18.3
Accounts payable and other current liabilities		(3.8)
Other non-current liabilities		(3.1)
Total purchase price	$	41.4

DataFuzion

On October 4, 2021, we completed the acquisition of certain assets and liabilities of DataFuzion HCM, Inc. ("DataFuzion") for $12.5 million in cash consideration and future contingent consideration payments. The asset purchase agreement allows the sellers to receive additional payments based on 1) the go live of DataFuzion's payroll processing solution for a certain customer ("Milestone Payment") and 2) qualifying annualized recurring revenue ("ARR") performance generated from DataFuzion's solution at each measurement date ("Earn-out Payments", collectively with the Milestone Payment, the "Contingent Consideration Payments"). The Milestone Payment will not exceed a payout of $2.5 million whereas the Earn-out Payments are performance based and do not have an established maximum payout. The earn-out will be measured and subsequently paid annually as of June 30, with the first measurement in 2023 and the final measurement in 2026. The fair value of the Contingent Consideration Payments was $5.4 million at the date of acquisition.

The purchase accounting was considered complete as of December 31, 2021 and we allocated the purchase price of $17.9 million as follows: $15.6 million to goodwill and $2.3 million to developed technology. Of the goodwill associated with this acquisition, $10.2 million is deductible for income tax purposes.

ADAM HCM

On December 3, 2021, we completed the acquisition of 100% of the outstanding interests in ATI ROW, LLC and ADAM HCM MEXICO, S. de R.L. de C.V. (collectively, "ADAM HCM") for $34.5 million. ADAM HCM is a payroll and HCM company in Latin America.

We finalized the final purchase price adjustments, specifically the net working capital and tax adjustments, resulting in the completion of the purchase accounting as of June 30, 2022. Intangible assets recorded for this acquisition consist of $7.5 million of customer relationships, $2.9 million of developed technology, and $0.4 million of trade name. Of the goodwill associated with this acquisition, $24.0 million is deductible for income tax purposes.

The major classes of assets and liabilities to which we have allocated the purchase price were as follows:

	(Dollars in millions)
Cash and equivalents	$ 0.2
Trade receivables, prepaid expenses, and other current assets	0.9
Goodwill	24.0
Other intangible assets	10.8
Other assets	0.2
Accounts payable and other current liabilities	(1.6)
Total purchase price	$ 34.5

The acquisition of Ascender, Ideal, DataFuzion, and ADAM HCM were recorded using the acquisition method of accounting, in which the assets and liabilities assumed are recognized at their fair value. Additionally, after consideration of these acquisitions, management has concluded that we continue to have one operating and reportable segment. This conclusion aligns with how management monitors operating performance, allocates resources, and deploys capital. Pro forma financial information is not presented as none of the acquisitions qualified as a significant business combination individually or in aggregate.

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.
- 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

Our financial assets and liabilities measured at fair value on a recurring basis were categorized as follows:

	December 31, 2022				
	Level 1	Level 2	Level 3		Total
	(Dollars in millions)				
Assets					
Available for sale customer funds assets		$ 2,011.0 (a)	$ —		$ 2,011.0
Total assets measured at fair value	$ —	$ 2,011.0	$ —		$ 2,011.0
Liabilities					
DataFuzion contingent consideration	$ —	$ —	$ 10.6	(b)	$ 10.6
Total liabilities measured at fair value	$ —	$ —	$ 10.6		$ 10.6

	December 31, 2021				
	Level 1	Level 2	Level 3		Total
	(Dollars in millions)				
Assets					
Available for sale customer funds assets	$ —	$ 1,952.4 (a)	$ —		$ 1,952.4
Total assets measured at fair value	$ —	$ 1,952.4	$ —		$ 1,952.4
Liabilities					
DataFuzion contingent consideration	$ —	$ —	$ 6.0	(b)	$ 6.0
Total liabilities measured at fair value	$ —	$ —	$ 6.0		$ 6.0

(a)Fair value is based on inputs that are observable for the asset or liability, other than quoted prices.
(b) For the contingent consideration related to the 2021 acquisition of certain assets and liabilities of DataFuzion HCM, Inc. ("DataFuzion"), we utilize an option pricing model, specifically a Black-Scholes-Merton model, to estimate the fair value of the contingent liability as of the reporting dates. This model uses certain assumptions related to risk-free rates and volatility as well as certain judgments in forecasting annual recurring revenue. The contingent consideration has been measured as Level 3 given the unobservable inputs that are significant to the measurement of liability. The contingent consideration is included within other liabilities in our consolidated balance sheets.

During the year ended December 31, 2022 and 2021, we recognized expense of $4.6 million and $0.6 million, respectively, within selling, general, and administrative expense in our consolidated statements of operations due to the remeasurement of the DataFuzion contingent consideration.

Assets and Liabilities Measured at Fair Value on a Nonrecurring Basis

During the year ended December 31, 2022, we did not re-measure any financial assets or liabilities at fair value on a nonrecurring basis. During the year ended December 31, 2021, assets acquired and liabilities assumed as part of a business combination and recognized as part of our convertible debt issuance have been measured at fair value on a nonrecurring basis.

5. Customer Funds

Overview

In connection with our U.S., Canada, India, Singapore, China, and Malaysia payroll and tax filing services, we collect funds for payment of payroll and taxes; temporarily hold such funds, in trust for the U.S. and Canadian funds, 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 are intended for the specific purpose of satisfying client fund obligations and therefore are not freely available for our general business use.

Our customer 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 45% to 55% of customer 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 45% to 55% of customer 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 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 funds, also referred to as float revenue or float, is a component of our compensation for providing services under agreements with our customers. Investment income from invested customer funds included in revenue amounted to $80.2 million, $41.1 million, and $52.3 million for the years ended December 31, 2022, 2021, and 2020, respectively. Investment income includes interest income, realized gains and losses from sales of customer funds' investments, and unrealized credit losses determined to be unrecoverable.

The amortized cost of customer funds as of December 31, 2022, and 2021, is the original cost of assets acquired. The amortized cost and fair values of investments of customer funds available for sale were as follows:

	December 31, 2022			
	Amortized Cost	Gross Unrealized Gain	Gross Unrealized Loss	Fair Value
	(Dollars in millions)			
Money market securities, investments carried at cost and other cash equivalents	$ 2,152.4	$ —	$ —	$ 2,152.4
Available for sale investments:				
U.S. government and agency securities	721.3	—	(53.1)	668.2
Canadian and provincial government securities	438.7	0.1	(17.8)	421.0
Corporate debt securities	653.8	0.5	(35.5)	618.8
Asset-backed securities	169.6	0.1	(6.1)	163.6
Mortgage-backed securities	14.5	—	(0.7)	13.8
Other short-term investments	57.0	—	—	57.0
Other securities	74.4	—	(5.9)	68.6
Total available for sale investments	2,129.3	0.7	(119.1)	2,011.0
Invested customer funds	4,281.7	$ 0.7	$ (119.1)	4,163.4
Receivables	20.0			19.8
Total customer funds	$ 4,301.7			$ 4,183.2

	Amortized Cost	December 31, 2021 Gross Unrealized Gain	Loss	Fair Value
		(Dollars in millions)		
Money market securities, investments carried at cost and other cash equivalents	$ 1,562.4	$ —	$ —	$ 1,562.4
Available for sale investments:				
U.S. government and agency securities	697.8	9.5	(5.8)	701.5
Canadian and provincial government securities	399.9	5.3	(1.3)	403.9
Corporate debt securities	551.4	8.3	(3.1)	556.6
Asset-backed securities	174.2	1.5	(0.3)	175.4
Mortgage-backed securities	2.7	—	—	2.7
Other short-term investments	41.4	—	—	41.4
Other securities	71.7	—	(0.8)	70.9
Total available for sale investments	1,939.1	24.6	(11.3)	1,952.4
Invested customer funds	3,501.5	$ 24.6	$ (11.3)	3,514.8
Receivables	18.4			21.0
Total customer funds	$ 3,519.9			$ 3,535.8

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

	December 31, 2022 Less than 12 months Unrealized Losses	Fair Value	12 months or more Unrealized Losses	Fair Value	Total Unrealized Losses	Fair Value
			(Dollars in millions)			
U.S. government and agency securities	$ (14.7)	$ 341.7	$ (38.3)	$ 323.9	$ (53.0)	$ 665.6
Canadian and provincial government securities	(11.8)	348.1	(6.0)	65.1	(17.8)	413.2
Corporate debt securities	(17.9)	422.6	(17.6)	175.7	(35.5)	598.3
Asset-backed securities	(4.6)	114.4	(1.5)	26.2	(6.1)	140.6
Other securities	(1.0)	20.7	(5.7)	61.3	(6.7)	82.0
Total available for sale investments	$ (50.0)	$ 1,247.5	$ (69.1)	$ 652.2	$ (119.1)	$ 1,899.7

Management does not believe that any individual unrealized loss was unrecoverable as of December 31, 2022. 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, 2022, 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, 2022 Cost	Fair Value
	(Dollars in millions)	
Due in one year or less	$ 2,565.7	$ 2,560.8
Due in one to three years	638.7	608.3
Due in three to five years	906.5	835.8
Due after five years	170.8	158.5
Invested customer funds	$ 4,281.7	$ 4,163.4

6. Trade and Other Receivables, Net

Trade and other receivables, net, consist of the following:

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
Trade receivables from customers	$ 143.0	$ 130.3
Interest receivable from invested customer funds	12.7	3.2
Dayforce Wallet on-demand pay receivables	22.2	9.3
Other	11.4	11.4
Total gross receivables	189.3	154.2
Less: reserve for sales adjustments	(4.6)	(4.0)
Less: allowance for doubtful accounts	(4.6)	(3.9)
Trade and other receivables, net	$ 180.1	$ 146.3

The activity related to the allowance for doubtful accounts was as follows:

	Year Ended December 31, 2022	2021	2020
		(Dollars in millions)	
Balance at beginning of year	$ 3.9	$ 3.1	$ 2.4
Provision for doubtful accounts	2.2	1.8	2.0
Charge-offs, net of recoveries	(1.5)	(1.0)	(1.3)
Balance at end of year	$ 4.6	$ 3.9	$ 3.1

7. Property, Plant, and Equipment, Net

Property, plant, and equipment, net consist of the following:

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
Software	$ 449.4	$ 357.2
Machinery and equipment	126.4	121.7
Buildings and improvements	41.8	31.9
Total property, plant, and equipment	617.6	510.8
Accumulated depreciation	(442.7)	(382.6)
Property, plant, and equipment, net	$ 174.9	$ 128.2

Depreciation expense related to property, plant, and equipment, net was $58.1 million, $53.6 million, and $48.0 million for the years ended December 31, 2022, 2021, and 2020, respectively.

8. Goodwill and Intangible Assets

Goodwill

Goodwill and changes therein were as follows:

	(Dollars in millions)
Balance at December 31, 2020	$ 2,031.8
Acquisitions	308.2
Translation	(16.4)
Balance at December 31, 2021	2,323.6
Remeasurement from provisional purchase price accounting	0.5
Translation	(44.1)
Balance at December 31, 2022	$ 2,280.0
Tax-deductible goodwill at December 31, 2022	$ 49.9

Please refer to Note 3, "Business Combinations," for further discussion of our acquisitions.

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. We performed a qualitative assessment as of October 1, 2022 and concluded that it is more likely than not that the fair value of our reporting unit is more than its carrying amount.

Intangible Assets

Other intangible assets, net consist of the following:

	December 31, 2022			
	Gross Carrying Amount	Accumulated Amortization	Net	Estimated Life Range (Years)
		(Dollars in millions)		
Customer lists and relationships	$ 299.8	$ (228.6)	$ 71.2	4-12
Trade name	183.4	(4.7)	178.7	3-5 and Indefinite
Technology	213.5	(181.8)	31.7	3-5
Total other intangible assets	$ 696.7	$ (415.1)	$ 281.6	

	December 31, 2021			
	Gross Carrying Amount	Accumulated Amortization	Net	Estimated Life Range (Years)
		(Dollars in millions)		
Customer lists and relationships	$ 308.4	$ (220.4)	$ 88.0	4-12
Trade name	184.4	(3.2)	181.2	3-5 and Indefinite
Technology	233.9	(170.6)	63.3	3-5
Total other intangible assets	$ 726.7	$ (394.2)	$ 332.5	

As of October 1 each year, we perform an impairment assessment of our indefinite-lived intangible assets, which includes our Ceridian and Dayforce trade names, which have a carrying value of $167.2 million and $4.4 million, respectively as of December 31, 2022. We performed a qualitative assessment as of October 1, 2022 and concluded that it is more likely than not that the fair value of our Ceridian and Dayforce trade names exceeded their respective carrying amounts. 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 to determine whether an impairment exists. If it is determined that an impairment has occurred, it would be recognized during the period in which the decision was made to make the fundamental shift.

Amortization expense related to definite-lived intangible assets was $30.9 million, $23.9 million, and $3.8 million for the years ended December 31, 2022, 2021, and 2020, respectively. We estimate the future amortization of other intangible assets is as follows:

Years Ending December 31,	Amount (Dollars in millions)
2023	$ 25.2
2024	24.5
2025	18.2
2026	10.2
2027	7.7
Thereafter	24.2

Long-Lived Assets by Geographic Area

Long-lived assets consist of right of use lease asset, property, plant and equipment, net, goodwill, and other intangible assets, net. Long-lived assets by country consist of the following:

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
United States	$ 1,803.5	$ 1,795.6
Canada	507.4	530.9
Australia	259.3	370.0
Other	190.6	117.2
Total long-lived assets	$ 2,760.8	$ 2,813.7

9. Debt

Overview

Our debt obligations consist of the following:

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
Term Debt, interest rate of 6.9% and 2.6%, respectively	$ 651.1	$ 657.9
Revolving Credit Facility ($300.0 million available capacity less amounts reserved for letters of credit, which were $1.4 million and $2.1 million, respectively)	—	—
Convertible Senior Notes, interest rate of 0.25%	575.0	575.0
Australia Line of Credit (AUD $1.5 million and $2.9 million letter of credit capacity, respectively, which were fully utilized; USD $1.0 million and USD $2.1 million, respectively)	—	—
Financing lease liabilities (Please refer to Note 15)	8.4	9.6
Total debt	1,234.5	1,242.5
Less unamortized discount on Term Debt and Convertible Senior Notes (a)	0.6	95.5
Less unamortized debt issuance costs on Term Debt and Convertible Senior Notes (a)	12.7	14.3
Less current portion of long-term debt	7.8	8.3
Long-term debt, less current portion	$ 1,213.4	$ 1,124.4

a) We adopted ASU 2020-06 as of January 1, 2022. The unamortized discount and debt issuance costs on the Convertible Senior Notes is presented post-adoption of ASU 2020-06 as of December 31, 2022 and is presented pre-adoption of ASU 2020-06 as of December 31, 2021. Refer to the Convertible Senior Notes section below for further discussion of the impacts of the adoption of ASU 2020-06 on our consolidated financial statements.

Accrued interest and fees related to our debt obligations was $0.7 million and $0.5 million as of December 31, 2022 and 2021, respectively, and is included within Other accrued expenses in our consolidated balance sheets.

Senior Secured Credit Facility

Principal Amounts and Maturity Dates

On April 30, 2018, we completed the refinancing of our debt by entering into a new credit agreement. Pursuant to the new credit agreement, we became borrower of (i) a $680.0 million term loan debt facility (the “Term Debt”) and (ii) a $300.0 million revolving credit facility (the “Revolving Credit Facility”) (collectively, the “Senior Secured Credit Facility”). Our obligations under the Senior Secured Credit Facility are secured by first priority security interests in substantially all of our assets and the domestic subsidiary guarantors, subject to permitted liens and certain exceptions.

The Term Debt will mature on April 30, 2025. We are required to make annual amortization payments in respect of the Term Debt in an amount equal to 1.00% of the original principal amount thereof, payable in equal quarterly installments of 0.25% of the original principal amount of the first lien term debt. On December 15, 2021, we completed the second amendment to our Senior Secured Credit Facility, which extended the maturity date of the Revolving Credit Facility from April 30, 2023 to January 29, 2025. The Revolving Credit Facility does not require amortization payments.

Interest

The effective interest rate on the Term Debt at December 31, 2022 and 2021, was 6.9% and 2.6%, respectively. The Term Debt was initially subject to an interest rate of LIBOR plus 3.25%. As a result of a ratings upgrade on March 26, 2019, of our Senior Secured Credit Facility by Moody’s Investor Service, from B3 to B2, the Company’s floating rate Term Debt interest rate was reduced from LIBOR plus 3.25% to LIBOR plus 3.00%, so long as the rating is maintained. On February 19, 2020, we completed the first amendment to the Senior Secured Credit Facility in which the interest rate was reduced from LIBOR plus 3.00% to LIBOR plus 2.5%. Further, the interest rate trigger under the applicable rating by Moody’s Investor Service was removed by the first amendment.

Financing Costs and Issuance Discounts

In connection with our debt refinancing in 2018, we capitalized $3.6 million of additional financing costs. The Term Debt had associated unamortized deferred financing costs of $3.7 million and $5.2 million at December 31, 2022, and 2021, respectively, which are being amortized at an effective interest rate of 5.3%. In connection with the second amendment in 2021, we capitalized $0.8 million of additional financing costs.

Collateral and Guarantees

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

Representations, Warranties and Covenants

The documents governing the Senior Secured Credit Facility contain certain customary representations and warranties. In addition, those documents contain customary covenants restricting our ability and certain of our 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 Senior Secured Credit Facility documents contain a requirement that we 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 Revolving Credit Facility is drawn. As of December 31, 2022, no portion of the Revolving Credit Facility was drawn.

Events of Default

Events of default under the 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, 2022.

Convertible Senior Notes

In March 2021, we issued $575.0 million in aggregate principal amount of 0.25% Convertible Senior Notes due 2026 in a private offering to qualified institutional buyers pursuant to Rule 144A promulgated under the Securities Act of 1933, as amended, and pursuant to exemptions from the prospectus requirements of applicable Canadian securities laws, including the exercise in full by the initial purchasers of their option to purchase an additional $75.0 million in aggregate principal amount of 0.25% Convertible Senior Notes due 2026 (collectively, the "Convertible Senior Notes"). The Convertible Senior Notes bear interest at a rate of 0.25% per year and interest is payable semiannually in arrears on March 15 and September 15 of each year, beginning on September 15, 2021. The Convertible Senior Notes mature on March 15, 2026, unless earlier converted, redeemed or repurchased. The total net proceeds from the offering, after deducting initial purchase discounts and other debt issuance costs, were $561.8 million.

The Convertible Senior Notes are unsecured obligations and do not contain any financial covenants or restrictions on the payments of dividends, the incurrence of indebtedness or the issuance or repurchase of securities by us or any of our subsidiaries.

The following table presents details of the Convertible Senior Notes:

	Initial Conversion Rate per $1,000 Principal	Initial Conversion Price per Share
Convertible Senior Notes	7.5641 shares	$ 132.20

The Convertible Senior Notes will be convertible at the option of the holders at any time only under the following circumstances:

• During any calendar quarter commencing after the calendar quarter ending on June 30, 2021, if the last reported sale price per share of our common stock exceeds 130% of the conversion price for each of at least 20 trading days during the 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter;

• During the five consecutive business days immediately after any 10 consecutive trading day period (such 10 consecutive trading day period, the "measurement period") in which the trading price per $1,000 principal amount of Convertible Senior Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price per share of our common stock on such trading day and the conversion rate on such trading day;

•Upon the occurrence of certain corporate events or distributions on our common stock, as described in the Indenture under which the Convertible Senior Notes were issued;

•If we call such Convertible Senior Notes for redemption; or

•At any time from, and including, September 15, 2025 until the close of business on the second scheduled trading day immediately before the maturity date.

Upon conversion, we may satisfy the conversion obligation by paying or delivering, as applicable, cash, shares of our common stock or a combination of cash and shares of our common stock, at our election, in the manner and subject to the terms and conditions provided in the Indenture under which the Convertible Senior Notes were issued. On December 30, 2021, we notified the holders of the Convertible Senior Notes of our irrevocable election to settle the conversion obligations in connection with the Convertible Senior Notes submitted for conversion on or after January 1, 2022, or at maturity with a combination of cash and shares of our common stock. Generally, under this settlement method, the conversion value will be settled in cash in an amount no less than the principal amount being converted, and any excess of the conversion value over the principal amount will be settled, at the Company's election, in cash or shares of our common stock. The conditions allowing holders of the Convertible Senior Notes to convert have not been met and therefore were not convertible as of December 31, 2022.

We may not redeem the Convertible Senior Notes prior to March 20, 2024. On or after March 20, 2024, and on or before the 30th scheduled trading day immediately preceding the maturity date, we may redeem the Convertible Senior Notes at a cash purchase price equal to the principal amount of the Convertible Senior Notes to be redeemed, plus accrued and unpaid interest, if any, but only if the last reported sale price per share of our common stock exceeds 130% of the conversion price on (1) each of at least 20 trading days, whether or not consecutive, during the 30 consecutive trading days ending on, and including, the trading day immediately before the date we send the related redemption notice; and (2) the trading day immediately before the date we send such notice. In addition, calling any Convertible Senior Note for redemption will constitute a make-whole fundamental change with respect to that Convertible Senior Note, in which case the conversion rate applicable to the conversion of that Convertible Senior Note will be increased in certain circumstances if it is converted after it is called for redemption.

If a “fundamental change” (as defined in the Indenture under which the Convertible Senior Notes were issued) occurs, then noteholders may require us to repurchase their Convertible Senior Notes at a cash repurchase price equal to the principal amount of the Convertible Senior Notes to be repurchased, plus accrued and unpaid interest, if any.

On January 1, 2022, we adopted ASU 2020-06 using the modified retrospective transition method. Under such transition, prior-period information has not been retrospectively adjusted for this change in accounting guidance.

Upon the adoption of ASU 2020-06, the Convertible Senior Notes are accounted for as a single liability, and the carrying amount of the Convertible Senior Notes was $565.4 million as of December 31, 2022, with principal of $575.0 million, net of issuance costs of $9.6 million. The Convertible Senior Notes are included within long-term debt, less current portion in our consolidated balance sheets as of December 31, 2022. The issuance costs related to the Convertible Senior Notes are being amortized to interest expense over the contractual term of the Convertible Senior Notes at an effective interest rate of 5.1%.

The following table sets forth total interest expense recognized related to the Convertible Senior Notes for the period:

	Year Ended December 31, 2022 (Post-adoption of ASU 2020-06)	Year Ended December 31, 2021 (Pre-adoption of ASU 2020-06)
	(Dollars in millions)	
Contractual interest expense	$ 1.5	$ 1.2
Amortization of debt discount	—	14.0
Amortization of debt issuance costs	3.1	1.7
Total	$ 4.6	$ 16.9

Capped Calls

In March 2021, in connection with the pricing of the Convertible Senior Notes, we entered into capped call transactions with the option counterparties (the “Capped Calls”). The Capped Calls each have an initial strike price of $132.20 per share, and an initial cap price of $179.26 per share, both subject to certain adjustments. The capped call transactions are generally expected to reduce potential dilution to our common stock upon any conversion of the Convertible Senior Notes and/or offset any potential cash payments we would be required to make in excess of the principal amount of converted Convertible Senior Notes, as the case may be, with such reduction and/or offset subject to a cap based on the cap price. For accounting purposes, the Capped Calls are separate transactions, and not part of the terms of the Convertible Senior Notes. As the Capped Calls qualify for a scope exception from derivative accounting for instruments that are both indexed to the issuer's own stock and classified in stockholder’s equity in our consolidated balance sheet, we have recorded an amount of $33.0 million as a reduction to additional paid-in capital, which will not be remeasured. This represents the premium of $45.0 million paid for the purchase of the Capped Calls, net of the deferred tax impact of $12.0 million.

Other Information Relating to Indebtedness

Future Payments and Maturities of Debt

The future principal payments and maturities of our indebtedness, excluding financing lease obligations, are as follows:

Years Ending December 31,		Amount (Dollars in millions)
2023	$	6.8
2024		6.8
2025		637.5
2026		575.0
	$	1,226.1

We may be required to make additional payments on the 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 Term Debt, and based on this calculation, we are not required to make a prepayment on the Term Debt in 2023.

Fair Value of Debt

Our debt does not trade in active markets and was considered to be a Level 2 measurement at December 31, 2022. The fair value of the Term Debt was 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 the Convertible Senior Notes was determined based on the closing trading price per $1,000 of the Convertible Senior Notes as of the last day of trading for the period and is primarily affected by the trading price of our common stock and market interest rates. The fair value of our debt was estimated to be $1,142.3 million and $1,248.9 million as of December 31, 2022, and 2021, respectively.

Other Debt Financing

Ceridian Australia had available a bank credit facility that provides for the issuance of letters of credit. The credit facility is a discretionary line at the option of the bank. The amount of letters of credit capacity and letters of credit outstanding under this facility were AUD $1.5 million (USD $1.0 million) and AUD $2.9 million (USD $2.1 million) at December 31, 2022 and 2021, respectively.

10. Employee Benefit Plans

Ceridian maintain numerous benefit plans for current and former employees. As of December 31, 2022, our current active benefit plans include defined contribution plans for the majority of our employees. All of our defined benefit plans have been frozen.

Defined Contribution Plans

We maintain defined contribution plans that provide retirement benefits to the majority of our employees. Contributions are based upon the contractual obligations of each respective plan. We recognized expense of $23.0 million, $15.4 million, and $11.1 million for the years ended December 31, 2022, 2021, and 2020, respectively, related to employer contributions to these plans.

Defined Benefit Plans

We maintain defined benefit pension plans covering certain of our current and former U.S. employees (the U.S. pension 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 heath care and life insurance benefits.

Pension Benefits

The largest defined benefit pension plan (the “U.S. pension 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. pension plan was amended (1) to exclude from further participation any participant or former participant who was not employed by Ceridian 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. pension 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. pension plan assets in Ceridian securities is prohibited by the investment policy. As of December 31, 2022, the U.S. defined benefit plan is fully funded.

In addition to the U.S. defined benefit plan, we also sponsor a nonqualified supplemental defined benefit plan (the “nonqualified defined benefit plan”), which is unfunded and provides benefits to selected U.S. employees. We made contributions to the nonqualified defined benefit plan amounting to $1.4 million in 2022 and expect to make contributions of $1.2 million during 2023.

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, 2022, a 25 basis point decrease in the discount rate would result in an immaterial impact to expense for all pension plans.

At December 31, 2021, we updated our mortality assumptions utilizing an improvement scale issued by the Society of Actuaries in October 2021, which resulted in a $2 million increase in the projected benefit obligation. The mortality assumption was not updated at December 31, 2022.

The funded status of defined benefit plans represents the difference between the projected benefit obligation (“PBO”) and the plan assets at fair value. The PBO of defined benefit plans exceeded the fair value of plan assets by $11.1 million at December 31, 2022; whereas the fair value of plan assets exceeded the PBO of defined benefit plans by $1.6 million at December 31, 2021. We are required to record the funded status as an asset or 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 as follows:

Years Ending December 31,		Amount (Dollars in millions)
2023	$	42.4
2024		40.6
2025		38.6
2026		36.6
2027		35.0
Next five years	$	147.5

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,			
	2022		2021	
	(Dollars in millions)			
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	$	503.4	$	555.2
Interest cost		8.8		6.7
Actuarial gain		(83.1)		(10.5)
Benefits paid and plan expenses		(45.6)		(48.0)
Projected benefit obligation at end of year	$	383.5	$	503.4
Change in Fair Value of Plan Assets During the Year:				
Plan assets at fair value at beginning of year		505.0		558.7
Actual return on plan assets		(88.4)		(7.2)
Employer contributions		1.4		1.6
Benefits paid and plan expenses		(45.6)		(48.1)
Plan assets at fair value at end of year		372.4		505.0
Funded status of plans	$	(11.1)	$	1.6

	December 31,			
	2022		2021	
	(Dollars in millions)			
Amounts recognized in Consolidated Balance Sheets				
Noncurrent asset	$	—	$	12.1
Current liability		1.2		1.4
Noncurrent liability		9.9		9.1
Amounts recognized in Accumulated Other Comprehensive Loss				
Accumulated other comprehensive loss, net of tax of $51.2 million and $49.4 million, respectively	$	163.6	$	157.9

The overall decrease in our benefit obligation for the year ended December 31, 2022 was primarily driven by benefit payments paid, plan expenses, and actuarial gains.

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

	Year Ended December 31, 2022	2021	2020
	(Dollars in millions)		
Net actuarial loss (gain)	$ 21.2	$ 9.9	$ (8.0)
Amortization of net actuarial loss	(13.6)	(17.3)	(15.7)
Tax expense	(1.9)	2.0	6.4
Other comprehensive loss (income), net of tax	$ 5.7	$ (5.4)	$ (17.3)

	Year Ended December 31, 2022	2021	2020
Assumptions Used in Calculations			
Discount rate used to determine net benefit cost	2.36%	1.87%	2.81%
Expected return on plan assets	3.30%	2.70%	5.70%
Discount rate used to determine benefit obligations	4.84%	2.36%	1.87%

	Year Ended December 31, 2022	2021	2020
	(Dollars in millions)		
Net Periodic Pension Cost			
Interest cost	$ 8.8	$ 6.7	$ 12.7
Actuarial loss amortization	13.6	17.3	15.7
Less: Expected return on plan assets	(15.9)	(13.1)	(22.9)
Net periodic pension cost	$ 6.5	$ 10.9	$ 5.5

Our overall investment strategy for the U.S. pension plan is to achieve a mix of approximately 86% for liability hedging purposes, 13% of investments for long term growth, and 1% 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 long term growth assets are 58% public equity, 25% fixed income, and 17% alternative investments. Specifically, the target allocation is managed through investments in fixed income securities, equity funds, collective investment funds, partnerships and other investment types. The underlying equity securities include exposure to large/mid-cap companies and small-cap companies. Fixed income securities include 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 substantially offsets the increase or decrease in the liabilities resulting from changes in interest rates. To achieve this objective, the portfolio will invest in corporate debt securities, 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. Mutual 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. 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 fair values of our defined benefit plan's assets by asset category were as follows:

	December 31, 2022 Level 1	Level 2	Level 3	Total
	(Dollars in millions)			
Investments, at fair value:				
Short-term investments	$ 17.2	$ —	$ —	$ 17.2
Government securities	—	6.3	—	6.3
Corporate debt securities	—	301.8	—	301.8
Collective investment funds	—	47.1	—	47.1
Total investments, at fair value	$ 17.2	$ 355.2	$ —	$ 372.4

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
	(Dollars in millions)			
Investments, at fair value:				
Short-term investments	$ 26.7	$ —	$ —	$ 26.7
Government securities	—	16.7	—	16.7
Corporate debt securities	—	384.2	—	384.2
Collective investment funds	—	77.4	—	77.4
Total investments, at fair value	$ 26.7	$ 478.3	$ —	$ 505.0

Postretirement Benefits

We provide health care and life insurance benefits for eligible retired employees, including individuals who retired from operations we subsequently sold or discontinued. We sponsor 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 U.S. 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, 2022, 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,	
	2022	2021
	(Dollars in millions)	
Funded Status of Postretirement Health Care and Life Insurance Plans		
Change in Benefit Obligation:		
At beginning of year	$ 12.6	$ 14.1
Interest cost	0.2	0.1
Participant contributions	0.6	0.3
Actuarial gain	(3.1)	(0.8)
Benefits paid	(1.5)	(1.1)
At end of year	$ 8.8	$ 12.6
Change in Plan Assets:		
At beginning of year	$ —	$ —
Company contributions	0.9	0.8
Participant contributions	0.6	0.3
Benefits paid	(1.5)	(1.1)
At end of year	—	—
Funded Status	$ (8.8)	$ (12.6)

	December 31,	
	2022	2021
	(Dollars in millions)	
Amounts recognized in Consolidated Balance Sheets		
Current liability	$ 1.6	$ 1.8
Noncurrent liability	7.2	10.8
Amounts recognized in Accumulated Other Comprehensive Loss		
Accumulated other comprehensive loss (income), net of tax of ($5.4) million and $(5.0) million, respectively	$ (8.4)	$ (7.6)

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

	Year Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Net actuarial gain	$ (3.1)	$ (0.8)	$ —
Amortization of net actuarial gain	1.9	2.2	2.5
Tax benefit	0.4	(0.4)	(0.7)
Other comprehensive (gain) loss, net of tax	$ (0.8)	$ 1.0	$ 1.8

	Year Ended December 31,		
	2022	2021	2020
	(Dollars in millions)		
Net Periodic Postretirement Benefit			
Interest cost	$ 0.2	$ 0.1	$ 0.3
Actuarial gain amortization	(1.9)	(2.0)	(2.2)
Prior service credit amortization	—	(0.2)	(0.3)
Net periodic postretirement benefit gain	$ (1.7)	$ (2.1)	$ (2.2)

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 2022 is 6.8% for pre-age 65 retirees and 8.0% for post-age 65 retirees. These rates are assumed to decrease gradually to the ultimate health care cost trend rate of 4.5% in 2029 for both groups.

	Year Ended December 31,		
	2022	2021	2020
Assumptions Used in Calculations			
Weighted average discount rate used to determine net periodic postretirement cost (credit)	2.00 %	1.42 %	2.52 %
Weighted average discount rate used to determine benefit obligation at measurement date	4.72 %	2.00 %	1.42 %

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 as follows:

Years Ending December 31,	Payments	Receipts
	(Dollars in millions)	
2023	$ 1.6	$ —
2024	1.3	—
2025	1.2	—
2026	1.1	—
2027	1.0	—
Next five years	$ 3.1	$ —

11. Share-Based Compensation

Our share-based compensation consists of stock options, restricted stock units (“RSU”), and performance-based stock units (“PSU”). We also offer an employee stock purchase plan.

Prior to November 1, 2013, our employees participated in a share-based compensation plan of the former ultimate parent of Ceridian, the 2007 Stock Incentive Plan (“2007 SIP”). Effective November 1, 2013, although 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, as amended (“2013 SIP”), a small number of participants maintained their stock options in the 2007 SIP. Concurrent with the IPO and legal reorganization, all outstanding stock options under the 2007 SIP were converted into options to purchase common stock of Ceridian. As of December 31, 2022, there were no stock options outstanding under the 2007 SIP.

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 authorized the issuance of up to 13,500,000 shares of common stock to eligible participants through equity awards (the “Share Reserve”). The 2018 EIP serves as a successor to the 2013 SIP as we ceased granting awards under the 2013 SIP as of April 24, 2018, and we do not intend to grant any additional awards under the 2013 SIP. Most of our equity awards under the 2013 EIP and 2018 EIP vest either annually or quarterly on a pro rata basis, generally over a one-, three-, 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 awards must be exercised generally within 90 days after termination, or these awards will be forfeited. The equity awards have a 10-year contractual term, and the options have an exercise price that is not less than the fair market value of the underlying stock on the date of grant.

The Share Reserve may be increased on March 31 of each of the first ten calendar years during the term of the 2018 EIP, by the lesser of (i) three percent of the number of shares of our common stock outstanding on each January 31 immediately prior to the date of increase or (ii) such number of shares of our common stock determined by the Board of Directors. Pursuant to the evergreen refresh provision of the 2018 EIP, on February 23, 2022, the Board of Directors approved an increase to the share reserve of the three percent of the number of shares of common stock outstanding on January 31, 2022 to take place on March 31, 2022. Further, our Board of Directors approved an amendment effective April 1, 2022, to remove the evergreen refresh provision of the 2018 EIP.

As of December 31, 2022, there were 850,736 stock options and RSUs outstanding under the 2013 SIP. We do not intend to grant any additional awards under the 2007 SIP or the 2013 SIP. As of December 31, 2022, there were 11,803,072 stock options, RSUs, and PSUs outstanding and 13,726,148 shares available for future grants of equity awards under the 2018 EIP.

Share-based compensation expense was $144.8 million, $113.4 million, and $65.8 million for the years ended December 31, 2022, 2021, and 2020, respectively.

Performance-Based Stock Options

Performance-based option activity under the 2007 SIP, the 2013 SIP, and the 2018 EIP was as follows:

	Shares	Weighted Average Exercise Price (per share)	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Performance-based options outstanding at December 31, 2019	68,281	$ 13.58	2.6	$ 3.7
Granted	1,818,728	$ 65.27	—	
Exercised	(42,730)	(13.46)	—	—
Performance-based options outstanding at December 31, 2020	1,844,279	$ 64.55	9.2	$ 77.5
Exercised	(65,882)	(47.23)	—	—
Forfeited or expired	(1,347)	—	—	—
Performance-based options outstanding at December 31, 2021	1,777,050	$ 64.72	8.3	$ 70.6
Exercised	(14,755)	(13.46)	—	—
Forfeited or expired	(1,857)	—	—	—
Performance-based options outstanding at December 31, 2022	1,760,438	$ 66.10	7.4	$ 0.1
Performance-based options exercisable at December 31, 2022	260,438	$ 70.90	7.5	$ 0.1

In 2020, 1,500,000 performance-based stock options ("Performance Option Award") were granted under the 2018 EIP with an exercise price of $65.26. The vesting conditions for the Performance Option Award are based on our performance on the New York Stock Exchange ("NYSE") with (i) 750,000 shares available to vest when our per share closing price on the NYSE meets or exceeds $110.94, or 1.7 times the exercise price, for ten consecutive trading days ("Performance Metric #1") and (ii) the remaining 750,000 shares are available to vest when our per share closing price on the NYSE meets or exceeds $130.52, or 2.0 times the exercise price, for ten consecutive trading days ("Performance Metric #2", collectively with Performance Metric #1, the "Performance Metrics"). The vesting conditions of the Performance Metrics must be achieved prior to May 8, 2025, or any unvested portion of the Performance Option Award will terminate. Further, no portion of the Performance Option Award will vest and become exercisable until May 8, 2023, the third anniversary of the Grant Date (the "Time-Based Metric"). The shares underlying Performance Metric #1, which was achieved on October 6, 2021, will vest and become exercisable on May 8, 2023 provided that continuous employment is maintained through that date. If Performance Metric #2 is met prior to satisfying the Time-Based Metric, the shares underlying Performance Metric #2 will vest and become exercisable on May 8, 2023 provided that continuous employment is maintained through that date. If the Time-Based Metric is met and Performance Metric #2 has not been met on or prior to May 8, 2025, the Performance Option Award will be terminated. We have estimated an expected term of 5.3 years, based on the vesting period and contractual term.

The remaining performance-based stock options granted during the twelve months ended December 31, 2020, under the 2018 EIP primarily include vesting conditions based on migrations of customers to Dayforce. There are two tranches of stock options, in which the vesting conditions must be met either prior to September 13, 2021, or September 13, 2022. The weighted average grant date fair value of these performance-based stock options granted in 2020 was $16.03 per share. The performance criteria for certain of these awards have been met and share-based compensation expense was recognized during the year ended December 31, 2022.

As of December 31, 2022, there was $2.6 million of share-based compensation expense related to unvested performance-based stock option awards not yet recognized, which is expected to be recognized over a weighted average period of 0.3 years.

Term-Based Stock Options

Term-based stock option activity under the 2007 SIP, the 2013 SIP, and the 2018 EIP, was as follows:

	Shares	Weighted Average Exercise Price (per share)	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Term-based options outstanding at December 31, 2019	13,144,937	$ 29.74	7.8	$ 501.3
Granted	2,282,334	66.06	—	—
Exercised	(3,889,096)	(20.42)	—	—
Forfeited or expired	(555,101)	(32.09)	—	—
Term-based options outstanding at December 31, 2020	10,983,074	$ 40.47	7.8	$ 725.9
Granted	759,126	84.07	—	—
Exercised	(2,942,465)	(26.71)	—	—
Forfeited or expired	(283,866)	(48.62)	—	—
Term-based options outstanding at December 31, 2021	8,515,869	$ 48.87	7.3	$ 473.4
Granted	81,145	56.29	—	—
Exercised	(931,520)	(32.14)	—	—
Forfeited or expired	(369,408)	(58.59)	—	—
Term-based options outstanding at December 31, 2022	7,296,086	$ 50.59	6.4	$ 117.4
Term-based options exercisable at December 31, 2022	4,965,415	$ 44.23	6.4	$ 104.9

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

	Year Ended December 31,		
	2022	2021	2020
Weighted average grant date fair value per share	$ 24.12	$ 33.09	$ 21.15

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,		
	2022	2021	2020
Expected volatility	40.7%	35.8%	29.8%
Expected dividend rate	—	—	—
Risk-free interest rate	2.6%	1.3%	0.6%

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, 2022, there was $30.0 million 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 0.7 years. As of December 31, 2022, there were 4,965,415 vested term-based stock options.

Restricted Stock Units

RSU activity under the 2013 SIP and the 2018 EIP, was as follows:

	Shares
RSUs outstanding at December 31, 2019	819,818
Granted	685,997
Shares issued upon vesting of RSUs	(73,475)
Forfeited or canceled	(42,955)
RSUs outstanding at December 31, 2020	1,389,385
Granted	890,852
Shares issued upon vesting of RSUs	(262,239)
Forfeited or canceled	(82,059)
RSUs outstanding at December 31, 2021	1,935,939
Granted	1,624,345
Shares issued upon vesting of RSUs	(504,586)
Forfeited or canceled	(164,881)
RSUs outstanding at December 31, 2022	2,890,817
RSUs releasable at December 31, 2022	661,484

Other information pertaining to RSUs was as follows:

	Year Ended December 31,		
	2022	2021	2020
Weighted average grant date fair value per share	$ 69.35	$ 85.08	$ 69.57

During the year ended December 31, 2022, 568,134 RSUs vested, of which 504,586 shares of common stock were issued. As of December 31, 2022, there were 661,484 RSUs vested and releasable. RSUs generally vest quarterly or annually over a one-, three-, or four-year period. As of December 31, 2022, there was $102.6 million of share-based compensation expense related to unvested RSUs not yet recognized, which is expected to be recognized over a weighted average period of 1.4 years.

Performance Stock Units

PSU activity under the 2018 EIP was as follows:

	Shares
PSUs outstanding at December 31, 2019	—
Granted	145,017
Forfeited or canceled	(9,797)
PSUs outstanding at December 31, 2020	135,220
Granted	348,483
Shares issued upon vesting of PSUs	(2,050)
Forfeited or canceled	(162,908)
PSUs outstanding at December 31, 2021	318,745
Granted	582,662
Shares issued upon vesting of PSUs	(168,414)
Forfeited or canceled	(26,526)
PSUs outstanding at December 31, 2022	706,467
PSUs releasable at December 31, 2022	—

The vesting conditions for the PSUs granted in 2020 were based on the Company’s performance against Cloud revenue and adjusted EBITDA margin goals under Ceridian HCM Holding Inc. 2020 Management Incentive Plan (the “2020 MIP”) for the incentive period of January 1, 2020 through December 31, 2020. The vesting conditions for the PSUs were not met for the 2020 incentive period and as a result, the PSUs did not vest and no share-based compensation expense was recognized for these awards during the year ended December 31, 2020.

In 2021, we granted PSUs under the Ceridian HCM Holding Inc. 2021 Management Incentive Plan (the “2021 MIP”) for the incentive period of January 1, 2021 through December 31, 2021, and also as part of long term incentive grants to certain members of management. Under the 2021 MIP, the vesting conditions were based on our performance criteria, including Cloud revenue and adjusted EBITDA margin goals. The maximum incentive vesting of PSUs may not exceed 150%. Both the Cloud revenue and adjusted EBITDA margin goals were calculated based on our operating results, adjusted for foreign currency and interest rate impacts plus other unique impacts as approved by the Compensation Committee of the Board of Directors. Upon vesting of a PSU, a participant will receive shares of our common stock. Based on the performance criteria achieved, most of the PSUs vested in March 2022 and share-based compensation was recognized in accordance with the achievement level. One-third of the PSUs granted in 2021 as part of long term incentive grants to certain members of management vested on March 8, 2022, and will vest on each March 8, 2023, and March 8, 2024.

On February 24, 2022, we granted PSUs under the 2022 Ceridian HCM Holding Inc. Management Incentive Plan (the “2022 MIP”) for the incentive period of January 1, 2022 through December 31, 2022, and also as part of long term incentive grants to certain members of management. The vesting conditions were based on the following performance criteria: (1) the Cloud revenue, excluding float revenue (the “Cloud Revenue Goal”) (2) the adjusted EBITDA, excluding float revenue (the “Adjusted EBITDA Goal”), and (3) the Sales per employee per month (“PEPM”) annual contract value (“ACV”) (the “Sales PEPM ACV Goal”), for fiscal year 2022 (collectively the “Performance Goals”). Both the Cloud Revenue Goal and the Adjusted EBITDA Goal are calculated based on our operating results on a constant currency basis as adjusted to exclude: float revenue; foreign exchange gain (loss); share-based compensation expense and related employer taxes; severance charges; restructuring consulting fees; significant acquisitions or disposals and related transaction costs; as well as other non-recurring items, subject to the Board of Directors approval. The Sales PEPM ACV Goal is calculated based on the sales of our solutions on a constant currency basis that contribute to Cloud recurring revenue.

The vesting conditions for the PSU awards granted in 2022 were determined based on our performance against the achievement of the Performance Goals, and the payout that a participant can receive may be between 0% for not meeting the applicable thresholds of any of the Performance Goals, up to a maximum total payout of 167% for achieving the maximum level of all of the Performance Goals. Upon vesting of a PSU, a participant will receive shares of our common stock. Based on the performance criteria achieved, most of the PSUs related to the 2022 MIP and one-third of the PSUs related to the long term incentive grants to certain members of management are expected to vest in March 2023 and share-based compensation was recognized in accordance with the achievement level.

As of December 31, 2022, there was $11.8 million of share-based compensation expense related to unvested PSUs not recognized related to certain members of management with long term incentive PSUs that have a three-year vesting period.

Global Employee Stock Purchase Plan

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. The purchase price is the lower of 85% of the fair market value of a share of common stock on (i) January 1 or (ii) the purchase date. The GESPP shall continue for ten years, unless terminated sooner as provided under the GESPP. During 2022, shares were purchased on March 31, June 30, September 30, and December 31.

Our GESPP activity was as follows:

	Year Ended December 31,	
	2022	2021
Shares issued	243,043	153,235
Weighted average purchase price (per share)	$ 48.59	$ 81.69

The fair value of the stock purchase rights granted under the GESPP was estimated using the following weighted-average assumptions:

	Year Ended December 31,		
	2022	2021	2020
Expected volatility	29.3 %	33.7 %	46.4 %
Expected dividend rate	—	—	—
Risk-free interest rate	0.2 %	0.1 %	1.1 %
Expected term (in years)	0.3	0.3	0.3
Grant date fair value per share	$ 21.16	$ 22.07	$ 17.11

12. Revenue

Our Solutions

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

• Cloud revenue is primarily generated from solutions that are delivered via two Cloud offerings, Dayforce and Powerpay. The Dayforce offering is a single application with continuous calculation that offers a comprehensive range of functionality, including global HR, payroll, benefits, workforce management, and talent intelligence on web and native iOS and Android platforms. Dayforce recurring revenue is primarily generated from monthly recurring fees charged on a PEPM basis and the allocation of investment income generated from holding Dayforce customer funds before funds are remitted to taxing authorities, Dayforce customer employees, or other third parties. Dayforce professional services and other revenue is primarily generated from implementation and post go-live professional services revenue. Other sources of Dayforce revenues include revenue from the sale, rental and maintenance of time clocks; revenue from the sale of third-party services; billable travel expenses for Dayforce customers, and Dayforce Wallet interchange fee revenue. The Powerpay offering is our solution designed primarily for small market Canadian customers, which typically have fewer than 20 employees. Powerpay recurring revenue is primarily generated from recurring fees charged on a per-employee, per-process basis and the allocation of investment income generated from holding Powerpay customer funds before funds are remitted to taxing authorities, Powerpay customer employees, or other third parties. Typical processes include the customer's payroll runs, year-end tax packages, and delivery of customers' remittance advices or checks. Powerpay professional services revenue is primarily generated from the setup of the Powerpay customer on their platform.

• 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. As a result of a modernization upgrade of the technology platforms used to provide those services, recurring revenues from stand-alone tax customers will be classified as Dayforce revenue on a go-forward basis, beginning in 2023. 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; the allocation of investment income generated from holding Bureau customer funds before funds are remitted to taxing authorities, Bureau customer employees, or other third parties; consulting services related to Bureau offerings; revenue from the sale of third party services to Bureau customers; and Excelity revenue.

Customer Information

No single customer accounts for 10% or more of our consolidated revenue for any of the periods presented.

Disaggregation of Revenue

Revenue by solution and category was as follows:

	Year Ended December 31, 2022	2021	2020
		(Dollars in millions)	
Revenue:			
Cloud			
Dayforce			
Recurring	$ 815.2	$ 626.6	$ 500.2
Professional services and other	181.7	159.3	148.6
Total Dayforce revenue	996.9	785.9	648.8
Powerpay			
Recurring	93.2	86.3	79.5
Professional services and other	0.7	0.9	1.1
Total Powerpay revenue	93.9	87.2	80.6
Total Cloud revenue	1,090.8	873.1	729.4
Bureau			
Recurring	139.2	137.8	110.5
Professional services and other	16.2	13.3	2.6
Total Bureau revenue	155.4	151.1	113.1
Total revenue	$ 1,246.2	$ 1,024.2	$ 842.5

Recurring revenue includes float revenue of $80.2 million, $41.1 million, and $52.3 million for the year ended December 31, 2022, 2021, and 2020, respectively.

Revenue by Geographic Area

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

	Year Ended December 31, 2022	2021	2020
		(Dollars in millions)	
United States	$ 784.1	$ 624.4	$ 579.3
Canada	288.6	254.2	223.5
Other	173.5	145.6	39.7
Total revenue	$ 1,246.2	$ 1,024.2	$ 842.5

Contract Balances

The Company records a contract asset when revenue recognized for professional services or cloud recurring subscription performance obligations exceed the contractual amount of billings for implementation related professional services and recurring subscriptions. Contract assets were $68.5 million and $62.7 million as of December 31, 2022 and 2021, 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 consolidated balance sheets.

Deferred Revenue

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

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
Deferred revenue, beginning of period	$ 48.7	$ 24.4
New billings	673.6	565.0
Acquired billings	—	16.6
Revenue recognized	(679.2)	(556.5)
Effect of exchange rate	(1.9)	(0.8)
Deferred revenue, end of period	$ 41.2	$ 48.7

Transaction Price for Remaining Performance Obligations

As of December 31, 2022, approximately $1,143.6 million 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. 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 Funds	Pension Liability Adjustment	Total
		(Dollars in millions)		
Balance as of December 31, 2020	$ (159.7)	$ 38.4	$ (154.7)	$ (276.0)
Other comprehensive loss before income taxes and reclassifications	(17.6)	(48.4)	(9.1)	(75.1)
Income tax benefit (expense)	—	12.8	(1.6)	11.2
Reclassifications to earnings	—	—	15.1	15.1
Other comprehensive (loss) income	(17.6)	(35.6)	4.4	(48.8)
Balance as of December 31, 2021	(177.3)	2.8	(150.3)	(324.8)
Other comprehensive loss before income taxes and reclassifications	(56.7)	(134.6)	(17.5)	(208.8)
Income tax benefit	—	35.4	1.5	36.9
Reclassifications to earnings	—	—	11.7	11.7
Other comprehensive loss	(56.7)	(99.2)	(4.3)	(160.2)
Balance as of December 31, 2022	$ (234.0)	$ (96.4)	$ (154.6)	$ (485.0)

14. Income Taxes

	Year Ended December 31, 2022	2021	2020
	(Dollars in millions)		
Components of Earnings and Taxes from Operations			
Loss before income taxes:			
U.S.	$ (0.7)	$ (73.6)	$ 41.5
International	(62.2)	(16.7)	(61.6)
Total	$ (62.9)	$ (90.3)	$ (20.0)
Income tax expense (benefit):			
Current:			
U.S.	$ 4.5	$ 0.9	$ (6.5)
State and local	1.9	0.4	0.1
International	5.8	22.3	(2.6)
Total current income tax expense (benefit)	12.2	23.6	(9.0)
Deferred:			
U.S.	7.8	(22.3)	(1.1)
State and local	(2.1)	(5.0)	0.1
International	(7.4)	(11.2)	(6.0)
Total deferred income tax benefit	(1.7)	(38.5)	(7.0)
Total income tax expense (benefit)	$ 10.5	$ (14.9)	$ (16.0)

	Year Ended December 31, 2022	2021	2020
Effective Tax Rate Reconciliation			
Federal statutory tax rate	21.0%	21.0%	21.0%
Change in valuation allowance	2.5	(0.7)	(0.3)
State income taxes, net of federal benefit	0.8	5.9	2.2
Share-based compensation	(25.6)	(3.5)	3.9
International tax rate differential	0.2	(2.4)	8.9
Foreign capital gain income	—	(1.3)	(7.5)
Unremitted foreign earnings	—	2.9	14.5
Acquisition costs	—	(2.3)	—
Base erosion tax	(5.7)	(1.6)	33.9
Global intangible low taxed income	(11.3)	—	—
Reserve for tax contingencies	—	2.1	1.2
Change in tax rate	1.6	—	—
Unutilized tax benefits	—	(3.4)	—
Other	(0.2)	(0.2)	2.2
Total tax rate	(16.7)%	16.5%	80.0%

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. 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, changes in our debt and equity structure, expectations and risks associated with estimates of future taxable income, ongoing prudent and feasible tax planning strategies, as well as current tax laws. As of December 31, 2022, we have a valuation allowance of $44.1 million against certain deferred tax assets primarily consisting of $31.0 million for deferred tax assets attributable to previous business combinations, and $12.4 million attributable to state net operating loss carryovers.

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
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	$ 27.8	$ 16.9
Intangibles	13.5	10.6
Software development costs	14.9	—
Customer funds	31.2	—
Other	33.7	19.2
Foreign tax credit carryover and other credit carryovers	0.3	0.6
Net operating loss carryforwards	120.8	161.5
Total gross deferred tax asset	242.2	208.8
Valuation allowance	(44.1)	(46.8)
Total deferred tax asset	$ 198.1	$ 162.0
Deferred tax liability:		
Intangibles	$ (60.8)	$ (75.4)
Deferred contract costs	(33.5)	(29.4)
Other	(7.8)	(24.6)
Total deferred tax liability	(102.1)	(129.4)
Net deferred tax asset	$ 96.0	$ 32.6

	December 31, 2022	December 31, 2021
	(Dollars in millions)	
Net Deferred Tax by Geography		
U.S.	$ 79.8	$ 38.9
International	16.2	(6.3)
Total	$ 96.0	$ 32.6

As of December 31, 2022, we had federal, state, and foreign net operating loss carryovers, which will reduce future taxable income when utilized. Approximately $66.2 million in net federal tax benefit is available from the loss carryovers and an additional $0.3 million is available in tax credit carryovers. $14.8 million of the federal net operating loss tax benefit will expire from 2031 to 2037. The remaining $51.4 million has an indefinite carryover period. The state loss carryovers and foreign loss carryovers will result in a tax benefit of approximately $32.5 million and $22.1 million, respectively, when utilized. The state net operating loss carryovers will begin to expire in 2023. The majority of the foreign operating loss carryovers have an indefinite carryover period. The $0.3 million tax credit carryover is composed of a variety of credits most of which expire between 2027 and 2042.

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 2018.

The following table summarizes the activity for unrecognized tax benefits:

	Year Ended December 31, 2022	Year Ended December 31, 2021
	(Dollars in millions)	
Federal, State and Foreign Tax		
Beginning unrecognized tax balance	$ —	$ 1.8
Increase prior period positions	—	—
Increase current period positions	—	—
Decrease prior period positions	—	(1.8)
Ending unrecognized tax benefits	$ —	$ —

There were no unrecognized tax benefits as of December 31, 2022 and 2021. We make adjustments to these reserves when facts and circumstances change, such as the closing of tax audits or the refinement of an estimate. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made and could have a material impact on our financial condition and operating results.

As of December 31, 2022, we have $343.5 million of unremitted foreign earnings. We consider all the unremitted earnings to be indefinitely reinvested. Because all unremitted earnings are considered to be indefinitely reinvested, no deferred tax liability has been recorded. It is not practical to make a determination of any unrecognized tax liability because of the complexities of the hypothetical calculation.

15. Leases

Our leases primarily consist of office space. Leases with an initial term of 12 months or less are not recorded on the balance sheet; we recognize lease expense for these leases on a straight-line basis over the lease term. For leases beginning 2019 and later, we account for lease components separately from the non-lease components.

Most leases include options to renew, and the lease renewal is at our sole discretion. Therefore, the depreciable life of assets and leasehold improvements is limited by the expected lease term unless there is a transfer of title or purchase option reasonably certain of exercise. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants.

We rent or sublease certain real estate to third parties. Our sublease portfolio mainly consists of operating leases for space within our office facilities.

As a result of the coronavirus disease 2019 ("COVID-19") and our pivot to a virtual working environment, we evaluated our lease portfolio resulting in the decision to close certain office locations and transition the impacted employees to fully virtual work. During the year ended December 31, 2021, we recognized $1.8 million of charges related to lease abandonment costs, and during the year end December 31, 2020, we recognized $16.8 million of charges, which was comprised of $14.7 million of accelerated amortization of the right of use assets and $2.1 million of accelerated depreciation of leasehold improvements, related to the abandonment of the leases associated with these office locations. These charges were recognized within selling, general and administrative expense in the consolidated statements of operations.

On December 15, 2021, we sold the office building, land, and fixed assets of our St. Petersburg, Florida facility for $40 million, less fees and expenses, resulting in a gain on the sale of $19.1 million, which was recognized in the consolidated statements of operations within selling, general, and administrative expense. Upon the sale of the building, we entered into a two year agreement to lease a portion of the building as of the sale date.

Supplemental balance sheet information related to leases was as follows:

Lease Type	Balance Sheet Classification	December 31, 2022	December 31, 2021
		(Dollars in millions)	
ASSETS			
Operating lease assets	Trade and other receivables, net	$ 0.1	$ 0.2
Operating lease assets	Prepaid expenses and other current assets	2.8	3.4
Operating lease assets	Right of use lease asset	24.3	29.4
Financing lease assets	Property, plant, and equipment, net	7.0	8.3
Total lease assets		$ 34.2	$ 41.3
LIABILITIES			
Current			
Financing lease liabilities	Current portion of long-term debt	$ 1.0	$ 1.5
Operating lease liabilities	Current portion of long-term lease liabilities	10.0	11.3
Noncurrent			
Financing lease liabilities	Long-term debt, less current portion	7.4	8.1
Operating lease liabilities	Long-term lease liabilities, less current portion	23.7	32.7
Total lease liabilities		$ 42.1	$ 53.6

The components of lease expense were as follows:

	Year Ended December 31,		
	2022	2021	2020
Lease Cost	(Dollars in millions)		
Operating lease cost	$ 9.8	$ 6.1	$ 9.1
Financing lease cost:			
Depreciation of lease assets	1.3	1.3	0.8
Interest on lease liabilities	0.3	0.3	0.4
Sublease income	(0.5)	(2.2)	(4.1)
Net lease cost	$ 10.9	$ 5.5	$ 6.2

Supplemental cash flow information related to leases was as follows:

	Year Ended December 31,	
	2022	2021
	(Dollars in millions)	
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash flows from operating leases	$ 8.7	$ 11.6
Operating cash flows from finance leases	0.3	1.9
Financing cash flows from finance leases	1.6	1.0
Lease assets obtained in exchange for new lease liabilities:		
Operating leases	7.8	2.2

The future minimum lease payments under our operating and financing leases were as follows:

Years Ending December 31,	Amount (Dollars in millions)
2023	$ 14.3
2024	11.0
2025	7.9
2026	4.7
2027	2.3
Thereafter	6.2
Total lease payments	$ 46.4
Less: Interest	4.3
Total	$ 42.1

Weighted average remaining lease term and weighted average discount rate were as follows:

	December 31, 2022	December 31, 2021
Weighted average remaining lease term (in years)		
Operating leases	3.6	5.8
Financing leases	8.3	8.9
Weighted average discount rate		
Operating leases	4.34 %	4.07 %
Financing leases	3.88 %	3.81 %

16. Commitments and Contingencies

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.

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, our 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 our predecessor to NEC. We are now responsible for the arrangement with NEC and the MPCA. The arrangement requires expense sharing between us and NEC for the remediation of groundwater contamination.

In September 1989, our predecessor entered into an environmental matters agreement ("EMA") with Seagate related to groundwater contamination on a parcel of real estate sold by our predecessor to Seagate. We are now responsible for the EMA. The EMA requires expense sharing between us and Seagate for the remediation of groundwater contamination up to a certain limit. We have recognized an environmental reserve liability equal to the EMA limit.

We have recognized an undiscounted liability of approximately $4.3 million and $4.5 million as of December 31, 2022 and 2021, 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.

17. Related Party Transactions

We provide Dayforce and related services to certain companies that are considered related parties. The revenue from these related parties was as follows:

Counter-Party	Related Persons Interest	2022	2021	2020
		Year Ended December 31, (Dollars in millions)		
FleetCor Technologies, Inc.	Shared board members. One board member is also the chief executive officer and the chairman of the counter-party's board	$ 0.8	$ 0.6	$ 0.9
The Stronach Group	The brother of David D. Ossip, our Chair and Co-Chief Executive Officer, was formerly the chief executive officer, and is currently a minority shareholder	0.1	0.1	0.1
Verve Senior Living	David D. Ossip, our Chair and Co-Chief Executive Officer, and his brother are currently minority shareholders	0.4	0.4	0.5
Environmental 360 Solutions	David D. Ossip's, our Chair and Co-Chief Executive Officer, brother is a board member	0.2	—	—
Fidelity National Financial, Inc.	Shared board members	0.4	0.4	0.4
Guaranteed Rate, Inc.	Portfolio company of Thomas H. Lee Partners, L.P. ("THL"), of which certain members of our board are managing directors	1.7	1.7	0.9
HighTower Advisors, LLC	Portfolio company of THL, of which certain members of our board are managing directors. One board member also serves on the board of the counter-party	0.4	0.3	0.2
Ten-X, LLC	Portfolio company of THL, of which certain members of our board are managing directors	0.2	0.2	0.2
Smile Doctors	Portfolio company of THL, of which certain members of our board are managing directors	1.0	—	—
The Dun and Bradstreet Corporation	Shared board members with Dun & Bradstreet Holdings, Inc., which owns the counter-party	1.8	—	—

We are party to service agreements with certain companies that are considered related parties. Payments made to related parties were as follows:

Counter-Party	Related Persons Interest	2022	2021	2020
		Year Ended December 31, (Dollars in millions)		
The Dun and Bradstreet Corporation	Shared board members with Dun & Bradstreet Holdings, Inc., which owns the counter-party	$ 0.3	$ 0.4	$ 0.4
Manulife Financial	Shared board members. Leagh E. Turner, our Co-Chief Executive Officer, also serves as a director	6.0	8.1	7.3

18. Capital Stock and Net Loss per Share

As of December 31, 2022 and 2021, there were 153,856,645 and 151,995,031 shares of common stock issued and outstanding, respectively.

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 fourth 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.

Basic net loss per share is computed by dividing net loss 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 by the weighted-average number of fully diluted common shares outstanding. In the years ended December 31, 2022, 2021, and 2020 our potential dilutive shares, such as term-based stock options, RSUs, and PSUs 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 basic and diluted net loss per share computations were calculated as follows:

	Year Ended December 31,		
	2022	2021	2020
	(Dollars in millions, except share and per share data)		
Numerator:			
Net loss	$ (73.4)	$ (75.4)	$ (4.0)
Denominator:			
Weighted-average shares outstanding - basic	152,940,299	150,402,321	146,774,471
Effect of dilutive equity instruments	—	—	—
Weighted-average shares outstanding - diluted	152,940,299	150,402,321	146,774,471
Net loss per share - basic	$ (0.48)	$ (0.50)	$ (0.03)
Net loss per share - diluted	$ (0.48)	$ (0.50)	$ (0.03)

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,		
	2022	2021	2020
Stock options	5,565,875	5,874,818	7,135,159
Restricted stock units	517,130	604,770	745,955
Performance stock units	1,383,847	549,583	229,433

The shares underlying the conversion option in the Convertible Senior Notes were not considered in the calculation of diluted net loss per share as the effect would have been anti-dilutive. Based on the initial conversion price, the entire outstanding principal amount of the Convertible Senior Notes as of December 31, 2022, would have been convertible into approximately 4.3 million shares of our common stock. Since we expect to settle the principle amount of the Convertible Senior Notes in cash, we use the treasury stock method for calculating any potential dilutive effect on diluted net income per share, if applicable. As a result, only the amount by which the conversion value exceeds the aggregate principal amount of the Convertible Senior Notes (the “conversion spread”) is considered in the diluted earnings per share computation. The conversion spread has a dilutive impact on diluted net income per share when the average market price of our common stock for a given period exceeds the initial conversion price of $132.20 per share for the Convertible Senior Notes. We excluded the potentially dilutive effect of the conversion spread of the Convertible Senior Notes as the average market price of our common stock during the twelve months ended December 31, 2022, was less than the conversion price of the Convertible Senior Notes. In connection with the issuance of the Convertible Senior Notes, we entered into Capped Calls, which were not included for purposes of calculating the number of diluted shares outstanding, as their effect would have been anti-dilutive.

19. Subsequent Events

The Office of Comptroller of the Currency authorized the Ceridian National Trust Bank to open on January 3, 2023. Effective on this day, the Ceridian National Trust Bank commenced banking operations, acting as trustee for our U.S. payroll trust.

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures, as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Exchange Act, are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Our management, with the participation of our Co-Chief Executive Officers and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2022. Based on the evaluation of our disclosure controls and procedures as of December 31, 2022, our Co-Chief Executive Officers and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act). Management conducted an assessment of the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on the assessment, management has concluded that its internal control over financial reporting was effective as of December 31, 2022, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with GAAP. Our independent registered public accounting firm, KPMG LLP, has issued an audit report with respect to our internal control over financial reporting, which appears in Part II, Item 8 of this Annual Report on Form 10-K.

On March 1, 2021, we completed the acquisition of Ascender. Prior to this acquisition, Ascender was a privately-held company not subject to the Sarbanes-Oxley Act of 2002, the rules and regulations of the SEC, or other corporate governance requirements to which public companies may be subject. In accordance with guidance issued by the SEC, companies are permitted to exclude acquisitions from their final assessment of internal control over financial reporting during the year of acquisition. As of the end of fiscal 2022, we have completed our integration activities related to internal control over financial reporting for Ascender. Accordingly, we have included Ascender within our assessment of internal control over financial reporting as of December 31, 2022.

Changes in Internal Control Over Financial Reporting

With the exception of internal control-related integration activities related to our acquisition of Ascender, there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the fiscal quarter ended December 31, 2022, that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Co-Chief Executive Officers and Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Directors

The information provided under the headings "Election of Directors" under Proposal One and "Board of Directors" in the Proxy Statement for Ceridian's 2023 Annual Meeting of Stockholders ("Proxy Statement"), is incorporated herein by reference.

Executive Officers

Information regarding our executive officers is set forth in Item 1 in Part I of this Form 10-K captioned "Executive Officers".

Code of Ethics

We have adopted a code of ethics known as the "Code of Conduct" that applies to all employees, contractors, officers and directors of Ceridian. The Code of Conduct may be viewed online on Ceridian's website https://www.ceridian.com/Ceridian/media/Files/ceridian-code-of-conduct-2018.pdf. We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding an amendment to, or waiver from, a provision of our Code of Conduct that applies to our principal executive officer, principal financial officer or principal accounting officer by posting such information on our website within four business days following the date of such amendment or waiver.

Director Nomination Process

There have been no material changes to the procedures by which shareholders may recommend nominees to our Board.

Audit Committee; Audit Committee Financial Expert

The information provided under the subheadings "Committees of the Board of Directors" under the Board of Directors heading and "Report of the Audit Committee of the Board of Directors" under Proposal Three in the Proxy Statement is incorporated herein by reference.

Item 11. Executive Compensation.

The information required by this item is incorporated herein by reference to the information set forth in Ceridian's Proxy Statement under the headings "Director Compensation", Executive Compensation", "Equity Compensation Plan Information", and "Corporate Governance".

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

Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item is incorporated herein by reference to the information set forth in the Proxy Statement under the heading "Equity Compensation Plan Information".

Security Ownership of Certain Beneficial Owners and Management

The information required by this item is incorporated herein by reference to the information set forth in the Proxy Statement under the heading "Security Ownership of Certain Beneficial Owners and Management".

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

The information required by this item is incorporated herein by reference to the information set forth in the Proxy Statement under the headings “Certain Relationships and Related Party Transactions”, “Election of Directors” under Proposal One, “Board of Directors” and “Corporate Governance”.

Item 14. Principal Accounting Fees and Services.

Our independent registered public accounting firm is KPMG LLP, Minneapolis, MN, Auditor Firm ID: 185.

The information required by this item is incorporated herein by reference to the information set forth in the Proxy Statement under the heading “Ratification of the Appointment of KPMG LLP as our Independent Registered Public Accounting Firm for Fiscal Year 2023” under Proposal Three.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(1)Consolidated Financial Statements

See Index to Consolidated Financial Statements at Item 8 herein.

(2)Financial Statement Schedules

All schedules are omitted because they are not applicable or the required information is shown in the consolidated financial statements or notes thereto.

(3)Exhibits

The following is a list of exhibits filed as part of this Annual Report on Form 10-K.

Exhibit Number	Description
3.1	Fourth Amended and Restated Certificate of Incorporation of Ceridian HCM Holding Inc. (incorporated by reference to Exhibit 3.1 to the Quarterly Report on Form 10-Q filed by the Company on May 5, 2021).
3.2	Second Amended and Restated Bylaws of Ceridian HCM Holding Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed by the Company on February 9, 2022).
4.1	Certificate of Common Stock (incorporated by reference to Exhibit 4.1 to the Quarterly Report on Form 10-Q filed by the Company on May 24, 2018).
4.2	Registration Rights Agreement, dated April 30, 2018, by and among Ceridian HCM Holding Inc. and the other parties thereto (incorporated by reference to Exhibit 4.4 to the Quarterly Report on Form 10-Q filed by the Company on May 24, 2018).
4.3^	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934.
4.4	Indenture, dated as of March 5, 2021, between Ceridian HCM Holding Inc. and Wells Fargo Bank, National Association (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by the Company on March 5, 2021).
4.5	Form of 0.25% Convertible Senior Notes due 2026 (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed by the Company on March 5, 2021).
10.1	Credit Agreement, dated April 30, 2018, between Ceridian HCM Holding Inc., as borrowers, the lenders party thereto, and Deutsche Bank AG New York Branch (as administrative agent and collateral agent) (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q filed by the Company on August 9, 2018).
10.2	First Amendment to Credit Agreement, dated February 19, 2020, between Ceridian HCM Holding Inc., as borrowers, the lenders party thereto, Deutsche Bank AG New York Branch (as administrative agent and collateral agent) (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q filed by the Company on May 6, 2020).
10.3	Second Amendment to Credit Agreement, dated as of December 15, 2021, between Ceridian HCM Holding Inc., as borrowers, the lenders party thereto, Deutsche Bank AG New York Branch (as administrative agent and collateral agent) (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Company on December 16, 2021).
10.4	Form of Capped Call Transaction Confirmation (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Company on March 5, 2021).
10.5*	Employment Agreement, dated April 2, 2012, by and between Ceridian Dayforce Corporation and David D. Ossip (incorporated by reference to Exhibit 10.2 to the Registration Statement on Form S-1 filed by the Company on March 26, 2018).
10.6*	Performance-Based Stock Option Award Agreement dated May 8, 2020 by and between Ceridian HCM Holding Inc. and David Ossip (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by the Company on August 5, 2020).
10.7*	Amended and Restated Restrictive Covenant Agreement, effective as of March 20, 2017, by and among Ceridian Holding LLC, Ceridian LLC, Ceridian Canada Ltd., Ceridian Dayforce Corporation and David D. Ossip (incorporated by reference to Exhibit 10.3 to the Registration Statement on Form S-1 filed by the Company on March 26, 2018).

10.8*	Amended and Restated Employment Agreement, effective February 9, 2022, between Leagh E. Turner and Ceridian Canada Ltd. (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Company on February 9, 2022).
10.9*	Employment Agreement, dated May 1, 2019, by and between Chris R. Armstrong and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q filed by the Company on July 30, 2019).
10.10*	Amendment to Employment Agreement, dated November 5, 2019, by and between Christopher R. Armstrong and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.6 to the Annual Report on Form 10-K filed by the Company on February 26, 2020).
10.11*	Second Amendment to Employment Agreement, effective February 3, 2020, between Christopher R. Armstrong and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Company on February 5, 2020).
10.12*	Third Amendment to Employment Agreement, effective February 23, 2022, between Christopher R. Armstrong and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by the Company on May 4, 2022).
10.13*	Employment Agreement, dated September 15, 2020, by and between Noémie C. Heuland and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by the Company on November 5, 2020).
10.14*	Employment Agreement, effective July 30, 2020, between Joseph B. Korngiebel and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by the Company on May 5, 2021).
10.15*	Employment Agreement, effective February 26, 2021, between Rakesh Subramanian and Ceridian HCM, Inc., (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q filed by the Company on May 5, 2021).
10.16*	Amendment to Employment Agreement, effective March 15, 2021, between Rakesh Subramanian and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q filed by the Company on May 5, 2021).
10.17*	Employment Agreement, effective June 7, 2021, between William McDonald and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q filed by the Company on August 4, 2021).
10.18*^	Employment Agreement, dated November 27, 2019, between Stephen Holdridge and Ceridian HCM, Inc.
10.19*	First Amendment to Employment Agreement, effective February 23, 2022, between Stephen Holdridge and Ceridian HCM, Inc. (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q filed by the Company on May 4, 2022).
10.20*	2013 Ceridian HCM Holding Inc. Stock Incentive Plan, dated October 1, 2013, and as amended on March 30, 2016, August 11, 2016, December 30, 2016, and March 20, 2017 (incorporated by reference to Exhibit 10.10 to the Registration Statement on Form S-1 filed by the Company on March 26, 2018).
10.21*	Form of Director Indemnification Agreement for Ceridian HCM Holding Inc. (incorporated by reference to Exhibit 10.11 to the Registration Statement on Form S-1 filed by the Company on April 12, 2018).
10.22*	Ceridian HCM Holding Inc. 2018 Equity Incentive Plan (amended and restated as of April 1, 2022)(incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q filed by the Company on May 4, 2022).
10.23*	Form of Director Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.13 to the Registration Statement on Form S-1 filed by the Company on April 12, 2018).
10.24*	Form of Director Restricted Stock Unit Award Agreement (for awards made after May 1, 2019) (incorporated by reference to Exhibit 10.2 to the Quarterly Report on Form 10-Q filed by the Company on July 30, 2019).
10.25*	Form of Director Restricted Stock Unit Award Agreement (for annual compensation awards made after May 1, 2020) (incorporated by reference to Exhibit 10.3 to the Quarterly Reported on Form 10-Q filed by the Company on August 5, 2020).
10.26*	Form of Restricted Stock Unit Award Agreement (for Canadian executive awards made after February 25, 2021) (incorporated by reference to Exhibit 10.5 to the Current Report on Form 8-K filed by the Company on February 26, 2021).

10.27*	Form of Director Stock Option Award Agreement (for annual compensation awards made after May 1, 2020) (incorporated by reference to Exhibit 10.4 to the Quarterly Reported on Form 10-Q filed by the Company on August 5, 2020).
10.28*	Form of Performance Stock Unit Award Agreement (for Canadian executive awards made after February 25, 2021) (incorporated by reference to Exhibit 10.6 to the Current Report on Form 8-K filed by the Company on February 26, 2021).
10.29*	Form of Performance Stock Unit Award Agreement (for Canadian executive awards made after January 1, 2022) (incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K filed by the Company on February 24, 2022).
10.30*	Form of Employee Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.14 to the Registration Statement on Form S-1 filed by the Company on April 12, 2018).
10.31*	Form of Employee Stock Option Award Agreement (incorporated by reference to Exhibit 10.15 to the Registration Statement on Form S-1 filed by the Company on April 12, 2018).
10.32*	Form of Stock Option Award Agreement (for awards made after February 25, 2021) (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed by the Company on February 26, 2021.
10.33*	Form of Employee Performance-Based Stock Option Award Agreement (incorporated by reference to Exhibit 10.1 to the Quarterly Reported on Form 10-Q filed by the Company on August 5, 2020).
10.34*	Form of Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed by the Company on February 10, 2020).
10.35*	Form of Restricted Stock Unit Award Agreement (for awards made after February 25, 2021 (incorporated by reference to Exhibit 10.4 to the Current Report on Form 8-K filed by the Company on February 26, 2021).
10.36*	Form of Restricted Stock Unit Award Agreement (for awards made after January 1, 2022) (incorporated by reference to Exhibit 10.5 to the Current Report on Form 8-K filed by the Company on February 24, 2022).
10.37*	Form of Performance Stock Unit Award Agreement (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by the Company on March 2, 2020).
10.38*	Form of Performance Stock Unit Award Agreement (for awards made after February 25, 2021) (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by the Company on February 26, 2021).
10.39*	Form of Performance Stock Unit Award Agreement (for awards made after January 1, 2022) (incorporated by reference to Exhibit 10.3 to the Current Report on Form 8-K filed by the Company on February 24, 2022).
10.40*	Ceridian HCM Holding Inc. Global Employee Stock Purchase Plan (incorporated by reference to Exhibit 99.1 to the Registration Statement on Form S-8 filed by the Company on November 28, 2018).
10.41*	Ceridian HCM Holding Inc. 2022 Management Incentive Plan (incorporated by reference to Exhibit 10.2 to the Current Report on Form 8-K filed by the Company on February 24, 2022).
10.42*#	Sales Incentive Plan for Rakesh Subramanian, effective February 23, 2022 (redacted) (incorporated by reference to Exhibit 10.4 to the Form 10-Q filed by the Company on May 4, 2022).
21.1^	List of subsidiaries of Ceridian HCM Holding Inc.
23.1^	Consent of KPMG LLP, Independent Registered Public Accounting Firm.
24.1	Power of Attorney (included on signature page).
31.1^	Certification of Co-Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2^	Certification of Co-Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.3^	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1^	Certification of Co-Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2^	Certification of Co-Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

32.3^	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS^	Inline XBRL Instance Document (the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document)
101.SCH^	Inline XBRL Taxonomy Extension Schema Document
101.CAL^	Inline XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF^	Inline XBRL Taxonomy Extension Definition Linkbase Document
101.LAB^	Inline XBRL Taxonomy Extension Label Linkbase Document
101.PRE^	Inline XBRL Taxonomy Extension Presentation Linkbase Document
104^	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)

* Management compensatory plan or arrangement.
^ Filed herewith.
# Confidential portions of this exhibit have been redacted in compliance with Item 601(b)(10) of Regulation S-K.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) 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, thereunto duly authorized**.**

	CERIDIAN HCM HOLDING INC.
Date: March 1, 2023	By: /s/ David D. Ossip Name: David D. Ossip Title: Co-Chief Executive Officer
Date: March 1, 2023	By: /s/ Leagh E. Turner Name: Leagh E. Turner Title: Co-Chief Executive Officer

KNOW ALL MEN BY THESE PRESENTS, that each of the undersigned constitutes and appoints each of Noémie C. Heuland and William E. McDonald, or any of them, each acting alone, his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for such person and in his or her name, place and stead, in any and all capacities, to sign this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, each acting alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that any such attorney-in-fact and agent, or his or her substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, this Report has been signed below by the following persons on behalf of the Registrant in the capacities and on the dates indicated.

Name	Title	Date
/s/ David D. Ossip David D. Ossip	Chair and Co-Chief Executive Officer (Co-Principal Executive Officer)	March 1, 2023
/s/ Leagh E. Turner Leagh E. Turner	Co-Chief Executive Officer and Director (Co-Principal Executive Officer)	March 1, 2023
/s/ Noémie C. Heuland Noémie C. Heuland	Executive Vice President and Chief Financial Officer (Principal Financial Officer)	March 1, 2023
/s/ Jeffrey S. Jacobs Jeffrey S. Jacobs	Head of Accounting and Financial Reporting (Principal Accounting Officer)	March 1, 2023
/s/ Brent B. Bickett Brent B. Bickett	Director	March 1, 2023
/s/ Ronald F. Clarke Ronald F. Clarke	Director	March 1, 2023
/s/ Deborah A. Farrington Deborah A. Farrington	Director	March 1, 2023
/s/ Thomas M. Hagerty Thomas M. Hagerty	Director	March 1, 2023
/s/ Linda P. Mantia Linda P. Mantia	Director	March 1, 2023
/s/ Ganesh B. Rao Ganesh B. Rao	Director	March 1, 2023
/s/ Andrea S. Rosen Andrea S. Rosen	Director	March 1, 2023
/s/ Gerald C. Throop Gerald C. Throop	Director	March 1, 2023