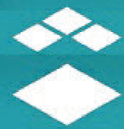

INSTRUCTURE

2022 ANNUAL REPORT

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 001-40647

Instructure Holdings, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**84-4325548**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
6330 South 3000 East, Suite 700	
Salt Lake City, UT	**84121**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (800) 203-6755

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, par value $0.01 per share	**INST**	**New York Stock Exchange**

Securities registered pursuant to section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. ☐ Yes ☒ No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. ☐ Yes ☒ No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. ☒ Yes ☐ No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted and posted 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, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

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

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

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 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 closing price of the Registrant's common stock on the New York Stock Exchange on June 30, 2022, the last business day of its most recently completed second fiscal quarter, was $402,700,043.

The number of shares of Registrant's common stock outstanding as of February 15, 2023 was 142,917,080.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Report is incorporated by reference from the Registrant's definitive proxy statement relating to the Annual Meeting of Shareholders to be held in 2023 (the "2023 Proxy Statement"), to be filed with the Securities and Exchange Commission no later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Instructure Holdings, Inc.
Annual Report on Form 10-K
For the Year Ended December 31, 2022

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Basis of Presentation

Unless we state otherwise or the context otherwise requires, throughout this Annual Report on Form 10-K the following terms have the meanings set forth below:

- "Instructure," the "Company," "our company," "we," "us" and "our" refer (i) for Predecessor periods, to Instructure, Inc., where appropriate, and its consolidated subsidiaries, and (ii) for Successor periods, to Instructure Holdings, Inc. and its consolidated subsidiaries;
- "Predecessor" refers to the periods prior to and including March 31, 2020, and "Predecessor 2020 Period" refers to the period from January 1, 2020 to and including March 31, 2020;
- "Successor" refers to the periods from and after April 1, 2020, and "Successor 2020 Period" refers to the period from April 1, 2020 to December 31, 2020;
- "Take-Private Transaction" refers to Thoma Bravo's acquisition of Instructure, Inc. on March 24, 2020;
- "Thoma Bravo Funds" refers to Thoma Bravo Executive Fund XIII, L.P., Thoma Bravo Fund XIII, L.P., Thoma Bravo Fund L.P., and the term "Thoma Bravo" refers to Thoma Bravo UGP, LLC, the ultimate general partner of the Thoma Bravo Funds, and, unless the context otherwise requires, its affiliated entities, including Thoma Bravo, L.P., the management company of the Thoma Bravo Funds; and
- (i) "users" means students, teachers, administrators, observers (i.e., parents or guardians of students) and other individuals who use any of our solutions during a certain period of time and to whom we have assigned a systematically generated unique account identifier, and (ii) "contracted" means that a particular customer has entered into a written contract for a specified subscription period covering a specified number of users and is legally obligated to pay. The number of "contracted Canvas Learning Management System ("LMS") users" refers to the number of contracted users or full-time equivalent contracted users (where our customers have a portion of the student population that are part-time) of our Canvas LMS solution that our customers have paid for during a specified period and that generate revenue for us pursuant to a written contract, and does not include (1) users of any other solution that we offer, or (2) other individuals (such as teachers, administrators and observers) affiliated with the customer or the contracted users who we permit to create accounts and use our solutions for free. As a result, the number of users of our solutions is greater than the number of contracted users. The amount of revenue we generate is impacted only by the number of contracted users and not the number of users who are using our solutions or have created accounts on our platform.

Instructure Holdings, Inc. was incorporated on January 14, 2020 to serve as a holding company in connection with the Take-Private Transaction. Instructure Holdings, Inc. had no operations prior to the Take-Private Transaction. As a result of the Take-Private Transaction, the consolidated financial statements included elsewhere in this Annual Report on Form 10-K are presented in two distinct periods—the Predecessor period and the Successor period—to indicate the application of two different bases of accounting between the periods presented and therefore are not comparable. For accounting purposes, management has designated the "acquisition date" with respect to the Take-Private Transaction as March 31, 2020, as the operating results and change in financial position for the intervening period between March 24 and March 31, 2020 is not material.

PART I

Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). Forward-looking statements are based on our management's beliefs and assumptions and on information currently available to our management. All statements other than statements of historical facts are "forward-looking statements" for purposes of these provisions, including those relating to future events or our future financial performance and financial guidance. In some cases, you can identify forward-looking statements by terminology such as "may," "might," "will," "should," "expect," "plan," "anticipate," "project," "believe," "estimate," "predict," "potential," "intend" or "continued," the negative of terms like these or other comparable terminology, and other words or terms of similar meaning in connection with any discussion of future operating or financial performance. These statements are only predictions. You should not place undue reliance on our forward-looking statements. These statements are not guarantees of future performance and are subject to future events, risks and uncertainties, many of which are beyond our control, or currently unknown to us. Our assumptions may turn out to be inaccurate and cause actual events or results to differ materially from our expectation or projections. We discuss many of these risks, uncertainties and other factors in this Annual Report on Form 10-K in greater detail under the heading "Item 1A—Risk Factors," and elsewhere in this report and as may be described from time to time in future reports we file with the Securities and Exchange Commission ("SEC").

All forward-looking statements included in this Annual Report on Form 10-K are based on information available to us on the date hereof, and we expressly disclaim any obligation to update any such forward-looking statements, except as required by law.

Item 1. Business.

Mission and Vision

Instructure's mission is to elevate student success, amplify the power of teachers everywhere, and inspire everyone to learn together by applying the power of simple, purposeful, and transformative software to the important challenge of educating the world's population.

Overview

From the inception of a teacher's lesson through a student's mastery of a concept, Instructure personalizes, simplifies, organizes, and automates the entire learning lifecycle through the power of technology. Our learning platform delivers the elements that leaders, teachers, and learners need – a next-generation LMS, robust assessment tools for learning, actionable analytics, and engaging, dynamic course content. Schools standardize on Instructure's solutions as the core of their learning platform because we bring together all of the tools that students, teachers, parents, and administrators need to create an accessible, engaging and modern learning environment. Our platform is cloud-native, built on open technologies, and scalable across thousands of institutions and tens of millions of users worldwide. We are the U.S. LMS market share leader in both Higher Education and paid K-12 with 7,436 global customers, representing Higher Education institutions and districts and schools in more than 100 countries. We are maniacally focused on our customers and enhancing the teaching and learning experience. As such, we continuously innovate to grow the functionality and capabilities of our platform, including through our earlier acquisitions to add online skills portfolio capabilities for Higher Education students and assessment and analytics capabilities. More recently, we acquired Eesysoft (rebranded to "Impact by Instructure" subsequent to acquisition, or "Impact") to allow educators to evaluate the impact education technologies have on student engagement and outcome, Kimono LLC (rebranded to "Elevate Data Sync" subsequent to acquisition) to secure data syncing capabilities across applications within a school environment, Concentric Sky, the maker of Badgr (rebranded to "Canvas Credentials" subsequent to acquisition) to empower institutions to help learners navigate their personal learning journeys through stackable digital credentialing technology that allows them to carry proof of their academic achievements and skills development, and LearnPlatform to empower educational organizations to evaluate and manage ongoing usage and effectiveness of digital learning products. Our platform becomes the invaluable digital infrastructure behind our customers' instructional workflows.

We launched Canvas, our LMS, in 2011 and quickly saw rapid adoption in the Higher Education market as we displaced legacy systems with our cloud-native, open and extendable platform, and won greenfield opportunities where traditional software solutions were too costly or cumbersome to implement. We have grown our business over time and the COVID-19 pandemic markedly accelerated adoption of our learning platform as device proliferation and technology acceptance within the classroom has advanced. Our extendable learning platform is comprised of the following solutions:

- *Canvas LMS*. As the cornerstone of our platform, Canvas LMS is designed to give education customers of all sizes and at every level an extensive set of flexible tools to support and enhance content creation, management, and delivery of face-to-face, blended and online instruction.
- *Canvas Studio*. An online video platform that seamlessly integrates with Canvas LMS, which enables customers to host, manage, edit and deliver impactful and engaging video learning experiences.
- *Canvas Catalog*. A course catalog and registration system that enables institutions to create and maintain a branded marketplace for their online course offerings.
- *Canvas Network*. An invitation-only offering allowing institutions to host and deliver large-scale online courses, often called Massive Open Online Courses ("MOOCs") to a much broader audience than just their own students.
- *Canvas Credentials*. A digital badging solution to provide learners with portable verification of skills in stackable pathways.
- *Canvas Student Pathways*. A solution to guide students through customized learning paths culminating in digital certifications that demonstrate proof of competency and help them gain employment.
- *Mastery Assessment*. Solutions for assessment management and content that include Mastery Connect, a robust student Assessment Management System ("AMS"), and Mastery View Assessments and Mastery Item Banks, which provides a variety of assessment content solutions and analytics to inform daily instruction in the classroom and data which measure student learning and preparedness for exams mandated by federal and state regulations.
- *Impact.* Solutions designed to help institutions drive adoption of new technology tools and evaluate their impact on student engagement and outcomes.
- *Elevate Data Sync.* Solutions for synchronization of data, grades, and rosters between edtech applications and student information systems ("SIS").
- *Elevate K-12 Analytics*. A data and analytics solution that combines data from multiple systems to deliver interactive visualizations and dashboards so educators can measure, manage, and improve programs and student outcomes.
- *Elevate Data Quality*. A data-quality solution that ensures district data is accurate, complete, and up-to-date by enabling districts to proactively detect and quickly resolve data problems.
- *Elevate Standards Alignment*. Tools to empower content providers to efficiently align standards-based educational content, improve discoverability, and reach new education markets.
- *LearnPlatform*. Tools to empower educational organizations to evaluate, select, and manage the ongoing usage and effectiveness of digital learning products.

Our broad capabilities have expanded our total addressable market, provided significant upsell and cross-sell opportunities, and collectively form the basis of an open and extendable platform which has become a standard among many U.S. Higher Education and K-12 institutions, and a growing number of international institutions.

Our global customer base spans from K-12 through Higher Education and Continuing Education, giving us a prominent position to accompany learners throughout their lifelong learning journey. We continue to deepen our relationships with Higher Education customers by facilitating their strategic growth often through powering their emerging fully online and Continuing Education initiatives that open their doors to a new universe of non-traditional learners. We are increasingly able to sell to large districts and statewide systems due to the scalability, adaptability, and reliability of our platform. Our customers include State Universities of California, Florida, and Utah, all of the Ivy League universities, international Higher Education and K-12 systems, and many of our nation's largest K-12 systems.

We deliver our applications through a Software-as-a-Service, or SaaS, business model. Customers can rapidly deploy our systems with minimal upfront implementation. They also benefit from regular software updates and 99.9% uptime. Our SaaS business model reduces the need for our customers to buy and support a broad range of IT infrastructure, and reduces the cost, complexity and disruptions associated with implementations and upgrades of on-premise software.

Initial Public Offering (“IPO”)

On July 26, 2021, the Company completed its IPO of 12,500,000 shares of common stock at an offering price of $20.00 per share. The Company received net proceeds of $234.0 million after deducting underwriting discounts and commissions. On August 19, 2021, the underwriters partially exercised their over-allotment option and purchased an additional 1,675,000 shares of common stock at the offering price of $20.00 per share. The Company received additional net proceeds of $31.4 million after deducting underwriting discounts and commissions.

Our Platform

Our learning platform is an open, extendable, configurable, and highly integrated set of solutions designed to meet the teaching and learning needs of every K-12, Higher Education and Continuing Education institution and includes the Canvas LMS, Canvas Studio, Canvas Catalog, Mastery Assessment, Canvas Credentials, Canvas Student Pathways, Canvas Network, Impact, Elevate Data Sync, and LearnPlatform. With its cloud-native offerings, open application programming interfaces (“APIs”), support of industry standards and accessibility, our platform streamlines digital tools and content for teachers and students, creating a simpler and more connected learning experience. We believe our platform offers the following key benefits:

- ***Cloud-native Architecture.*** Our cloud-native architecture enables customers to enjoy all of the benefits of the cloud, including rapid time to value, no maintenance, frequent updates with no downtime, and horizontal scalability across millions of users. The cloud allows users to access our platform at any time, from any device, affording institutions and providers the ability to collaborate on the use of their data, to differentiate and personalize instruction, answer critical questions about the efficacy of content and tools, and put teachers and students in control of their own outcomes.
- ***High Reliability and Uptime.*** Our platform regularly scales to match the daily and seasonal demand curve of students and teachers globally. We seamlessly scaled from overnight lows to peak periods reaching as high as 5.6 million concurrent users during the COVID-19 pandemic. We guarantee 99.9% uptime through service level agreements (“SLAs”), and have generally delivered above this level over the past five years. Our uptime has remained excellent while growing our customer base and usage throughout 2022. Importantly, we are able to scale up and down dynamically when there are abrupt changes in usage, such as immediate moves to distance learning, or changes in school hours, class schedules, and academic calendars.
- ***Open Source and Open Ethos***. Our platform is built on open source technologies, providing customers full flexibility in how they use our platform, and giving them access to constant innovation with upgrades to the code base. Importantly, through open APIs, customers get access to massive amounts of their data, providing them the freedom and flexibility to use their own data for assessments, personalization, benchmarking, and engagement.
- ***Extendable Across Partner Ecosystem***. We are the connected hub for teaching and learning. A key feature of delivering a platform is building an ecosystem of partners connected to the platform. We enable third-party software providers to integrate with our platform through a library of open APIs, allowing us to provide a more comprehensive offering through product integration, and for third parties to rapidly scale solutions across our customer base. We have over 750 partners, from some of the world’s largest technology companies to niche point solution providers, across content providers, hardware providers, collaboration tools, publishers, and productivity tools.

- ***Native Cloud-based Software***. Our cloud-based delivery model enables customers to rapidly deploy our platform to experience immediate benefit. Software updates are implemented regularly and transparently. Our single-instance, multi-tenant architecture is designed to scale for rapid growth. Our cloud-based platform provides upfront cost savings over on-premise solutions by reducing the need for expensive IT resources and hardware infrastructure.

- ***Multi-Functional Product Suite***. Our platform capabilities span multiple areas of instruction, including learning, assessments, analytics, credentialing, and program management. By addressing multiple areas of instruction, we provide the most relevancy in the classroom to teachers and students. The breadth of our offerings facilitates improved student outcomes, allows us to address a large and growing market, and enables us to cross-sell numerous offerings within our existing customer base, where customers want to buy adjacent solutions.

- ***Solutions Address All Market Segments***. We serve all market segments within education, including K-12, Higher Education, Continuing Education, and Vocational. By serving all segments in the market, we are able to engage with students throughout the education lifecycle and increase retention within our user base. This also provides us with a large market opportunity, with both greenfield and replacement options across U.S. and international markets.

- ***Continuous Innovation to Enable New Applications.*** Our continuous commitment to innovation leads to stronger retention and customer satisfaction, continued relevancy with our customer base, and the ability to respond quickly to market changes, such as providing increased scalability in response to the COVID-19 pandemic. We also seek to expand our platform by developing into adjacent markets through strategic acquisitions and partnerships.

Our Growth Strategy

We are pursuing the following strategies to grow our business:

- ***Grow Our Customer Base***. *Higher Education*. We expect to grow our customer base in Higher Education primarily through replacements of legacy systems in North America, and through greenfield wins in targeted and strategic international regions. As international penetration of paid LMS and adjacent systems is still relatively low, we expect to target new opportunities in select regions utilizing our local sales teams, as well as channel partners.

  K-12. We expect to grow our customer base in K-12 by surrounding free solutions currently in place with our scalable platform, monetizing demand for our breadth of capabilities, and focusing customers on the benefits of district or state-wide standardization.

- ***Cross-sell into our Existing Customer Base***. Our broad capabilities spanning learning, assessments, analytics, student success, program management, digital courseware, credentials, and global online learning initiatives provide us a significant opportunity to cross-sell offerings into our existing customer base. We generally land with our LMS product and have the ability to cross-sell additional solutions into our LMS customer base.
- ***Continue to Innovate and Expand Our Platform***. We will continue to innovate on our platform, expand our features and monetize new offerings. Key to our ability to service our customer base will be the continued strengthening of our core focus areas in learning management, assessment management, student success, and online learning, where we see significant customer demand for broad offerings. We will also continue to innovate our platform and build strengths in adjacent areas of learning analytics, program management, and instructional content, where we see opportunities to expand our customer base.

Our Learning Platform

Canvas LMS

Canvas LMS is a learning management system designed to give our K–12, Higher Education, and Continuing Education customers an extensive set of flexible tools to support and enhance content creation, management and delivery of face-to-face, hybrid, and online instruction.

Canvas LMS enables instructors and learners to:

- communicate through announcements, messages and conferences;
- interact with content and collaborate with peers through group assignments and discussions;
- create, deliver and analyze quizzes and assignments;
- perform outcomes-based assessments;
- choose, manage and change courses;
- automate classroom activities, including the syllabus, attendance and calendar of course events;
- grade assignments, using SpeedGrader, and post grades online;
- facilitate audio and video communications for enhanced teacher and student engagement;
- access an integrated learning object repository;
- analyze course and student data to improve learning outcomes and teaching methods;
- set personalized academic goals and track performance;
- allow access for students, teachers and parents through powerful mobile applications;
- provide parental or advisor access to assignments and grades;
- find and add third-party activities and content from the Edu App Center; and
- exchange data and integrate with popular student information systems.

Canvas LMS provides access to a critical set of user and course activity data, including user and device characteristics, discrete page views, user engagement, individual curricula and assessments, and evaluations. Data is delivered to administrators in a format optimized for warehousing, performing queries, reporting, and making it easier for administrators to benchmark, customize teaching, and improve learning outcomes.

Additionally, Canvas LMS supports standards-based Learning Tools Interoperability ("LTI") integration with hundreds of third-party publishers and software providers. Canvas LMS is even more extendable through our own API, which, combined with our partner ecosystem, enables our customers to build a learning and teaching environment that meets their unique organizational needs.

Canvas Studio

Canvas Studio is an online video platform designed to enable customers to host, manage, and deliver impactful video learning experiences. Canvas LMS customers can seamlessly integrate Studio for a modern, streamlined, easy-to-use video learning solution that provides the interactivity, insights and reliability institutions need to engage their students.

Canvas Studio enables teachers and students to:

- easily upload media and publish videos to courses that can be viewed across devices and in multiple playback formats;
- experience high-quality, video playback around the world;
- seamlessly create content through integrated webcam and screen capture tools;
- interact directly with video content through real-time contextual commenting and quizzing;
- understand exactly how students are engaging with media to help inform video strategy effectiveness;
- make video content fully accessible through automatic speech recognition ("ASR") captioning technology; and
- manage and share videos between teachers and students.

Canvas Catalog

Canvas Catalog is a white-label, course catalog and registration system that seamlessly integrates with Canvas LMS and enables institutions to create and maintain a branded marketplace for their online course offerings. Canvas Catalog provides a searchable course index, integration with online payment gateways for student registration and enrollment, custom course landing pages, collections of courses in specialized programs, automatically distributed certificates, and other ways to recognize completion.

Canvas Network

Canvas Network allows invitation-only access to open online courses. Through Canvas Network, academic institutions are invited to offer *an*d deliver courses over the internet to a much broader audience than just their own students. Some institutions choose to pursue a massive open online course ("MOOC") format, and some choose to pursue a smaller online course format with more interaction. Institutions already using Canvas can easily move professional development courses onto Canvas Network, extending their reach and enhancing their brand.

Canvas Student Pathways

Canvas Student Pathways guides students through customized learning paths culminating in digital certifications that demonstrate proof of competency and can help them gain employment.

Canvas Student Pathways provides the ability to:

- guide students through self-paced learning journeys and keep students informed of their progress;
- gain a bird's-eye view into learner progression and can filter by milestone to preemptively identify learners who may be falling behind;
- issue shareable digital badges, badge detail pages, and certifications that display skills and prove competencies with artifacts of learning;
- provide students with life-long ePortfolios that showcase skills, academic and co-curricular achievements; and
- use for professional development to guide educators through professional development requirements and opportunities.

Canvas Credentials

Canvas Credentials empowers learners through their personal educational journey - whether they be transitional, non-traditional, career shifters and a little bit of everything in between. Canvas Credentials empowers Higher Education, K-12, Associations, Workforce Development, Technical Training, and Corporate companies to combine and connect badges from multiple sources into a meaningful pathway for learners. Motivate and engage students with visual, stackable and shareable pathways while empowering them to carry their skills throughout their educational journey. Utilizing EMSI data, Canvas Credentials connect students to real world applications of their skills and progress to visualize career outlook and salary expectations.

Canvas Credentials enables institutions to:

- enable learners to carry their skills throughout their educational journey;
- motivate students with visual, stackable, and shareable pathways;
- enable educators to automate milestone badges, track third-party badges, apply group and individual progress tracking;
- utilize EMSI data to see how students' skills are applicable to career types with career outlook and salary expectations;
- recognize the achievements of an unlimited number of students;
- utilize digital validation of skills through rich metadata, analytics, and verification; and
- showcase proof of skills to potential employers.

Mastery Assessment

Mastery Connect. Mastery Connect is a comprehensive assessment management system that empowers K-12 schools and districts to measure student levels of understanding to identify opportunities for intervention, while preparing students for high-stakes federally-mandated exams. With our simple, elegant, and scalable assessment platform, educators can purchase high quality assessments or create and deliver effective benchmark exams with simple deployment workflows, leveraging data collected to guide instruction and enhance curricula school- or district-wide. Our customers who also use Canvas LMS can integrate Mastery Connect for a seamless user experience.

Mastery Connect enables schools to:

- create online assessments with rich multimedia, linked course content and a variety of attempt, grading, viewing and moderation settings;
- automatically import user profile demographics from student information systems;
- use intelligent item banks to create, manage and update items used across courses;
- integrate third-party content, applications and standards-based Question and Test Interoperability importing and exporting;
- link questions to Common Core or state standards to facilitate modern competency- or standards-based grading models;
- deploy district-wide, device-agnostic assessments on modern, cloud-based architecture, which allows for nearly unlimited scale and prevents data loss; and
- generate reports showing the performance and progress of entire districts, schools or individual students.

Mastery Content. The Mastery Content products are a collection of standards-based assessment materials, including Mastery View Predictive Assessments, the Mastery View Formative Assessments, and the Mastery Item Banks, which are delivered through Mastery Connect.

Mastery assessment content offers:

- assessment item bank content;
- predictive benchmark assessments; and
- rigorous formative assessments.

Impact

Impact helps K-12 and Higher Education institutions improve technology adoption and evaluate the overall impact of educational technology on student engagement outcomes so users can focus more on teaching and learning and less on navigating new technologies.

Impact enables schools to:

- use insights from dashboards and dynamic reporting for a view of usage and adoption of available edtech tools;
- send customizable in-app messages to deliver key insights about optimal platform use;
- deliver customized 24/7 support with issue-specific routing options and a curated help center that includes chosen guides and articles;
- send targeted nudges, tips, and explanations that assist students, instructors and administrators in software best practices;
- include messages that highlight new features, important course information, or other alerts to inform users;
- create messaging campaigns around specific usage outcomes and customized for specific roles;
- collect and analyze student usage data and uncover engagement patterns in Instructure products, such as Canvas LMS and Mastery Connect, and third-party tools;
- place prompts and usage guides anywhere within the product to lead users through suggested navigation and paths; and
- take action on usage and engagement data by planting guides and custom messaging directing users in the moment.

Elevate Data Sync

Elevate Data Sync is an interoperability solution that allows edtech vendors to share learning data between K-12 and Higher Education applications and solve complex integration challenges simply and at scale. Elevate Data Sync supports a growing number of industry-standard data models and protocols and utilizes the preferred integration method for each SIS and application.

Using Elevate Data Sync allows edtech application providers to:

- integrate with any SIS on the market to synchronize student, staff, and learning data;
- manage all integrations in a single web console;
- share bi-directional data with SIS to reduce the need for users to double enter grades;
- reduce development and support burden by consolidating SIS integrations; and
- guarantee data stays safe with strict security and privacy policies.

Elevate Data Quality

Elevate Data Quality enables districts to proactively detect and quickly resolve data quality problems for streamlined reporting of complete, accurate, and timely data.

Elevate Data Quality enables:

- districts to reduce the time and effort expended to maintain accurate and timely data through automated tasks;
- district information systems to get automated data tests against pre-defined business rules for validity, accuracy, and compliance;
- visibility into data quality trends over time through a data quality dashboard;
- receipt of error notifications that are proactively pushed to accountable staff, detailing specific data issues that need to be reviewed, monitored, or corrected;
- staff to receive prescriptions to guide them in addressing errors; and
- users to identify any potential compliance issues or funding opportunities.

Elevate Standards Alignment

Elevate Standards Alignment is an alignment and content-tagging solution for learning companies. Powered by Academic Benchmarks, the largest collection of up-to-date digitized learning standards, we enable our partner solution providers to expand their product offerings, meet the needs of their customers, and reach new education markets.

Elevate Standards Alignment enables:

- reduced development costs and time to market with streamlined alignment and tagging solutions, including tools to expand into new states and market segments;

- efficient alignment of content and the ability to maintain those alignments over time with access to the Academic Benchmarks, unique identifiers, education taxonomies and metadata-including all 50 states, national standards, CTE Standards, ISTE® standards, CollegeBoard AP® standards, and international authorities;
- use of highly accurate recommendations from machine-learning algorithms; and
- comprehensive reporting to inform content development, sales and the request for proposal (“RFP”) process.

LearnPlatform

LearnPlatform is a comprehensive edtech effectiveness system used by educators, leaders, and partners to modernize their learning environments and ensure academic and financial returns on their investment.

LearnPlatform allows institutions to:

- monitor technology usage across the organization, while providing a centralized location for educators to request new tools and access approved applications;
- analyze the operational, instructional, and financial impact of educational technology;
- get visibility and contextual evidence of technology usage to inform instructional, operational, and financial decisions;
- drive efficiency by simplifying processes and improving provider communications to ensure compliance and safety; and
- evaluate product impact with guided rapid-cycle research.

Our Technology

Built on a modern technology stack, our native-cloud, multi-tenant platform and applications scale to millions of users and enable us to leverage advancements in web design, open source technologies and security. We adhere to industry-standard best information security practices to protect our servers and our customers’ critical data.

We host our platform and applications on cloud infrastructure provided by Amazon Web Services (“AWS”). We use AWS basic building blocks such as Amazon Elastic Compute Cloud (“EC2”), Elastic Load Balancers (“ELB”, “ALB”), Simple Queue Service (“SQS”) and Simple Storage Service (“S3”). We also use advanced AWS platform capabilities including Amazon Kinesis, AWS Lambda, AWS Fargate, AWS Elastic Kubernetes Service (“EKS”), and Amazon Relational Database Services (“RDS”). Our hosting services provide full support, rolling release upgrades/updates, backup and disaster recovery services. Our infrastructure enables us to scale both horizontally and vertically in order to rapidly adjust to variances in usage at the server, database and file store level. Our applications run on virtualized instances in AWS data center facilities, which provide industry-standard best security practices. As of December 31, 2022, we used domestic AWS data center facilities in Virginia, Ohio and Oregon, and international facilities in Dublin, Ireland, Frankfurt, Germany, Sydney, Australia, Montreal, Canada and Singapore. We intend to expand operations into other regions based on market conditions. These AWS managed facilities have earned multiple certifications including, but not limited to, SOC 2 Type II, International Organization for Standardization (“ISO”) 9001 and ISO27001.

We designed our platform for resilience and rapid recovery from component failure. We apply a wide variety of strategies to achieve enterprise-grade reliability and durability. We have automated procedures in place to handle coordinated changes across our various instances and store backups of key data stores in multiple physical locations.

Our technology stack includes multiple web and data processing applications built with AWS technology augmented with our own scaling and provisioning technologies to fit the unique needs of education technology use cases. We use Web 2.0 technologies like Ruby on Rails, Java, Node.js, and React.js, which provide users a familiar web experience. Our platform was built on underlying open source technologies, allowing us to take full advantage of advancements in scalability and flexibility. We utilize the Linux operating system, Postgres databases, and Redis data structure store. Our platform also provides an API that third-parties can use to add new features and functionality.

Keeping our platform secure is a primary focus of our dedicated enterprise security team due to the sensitive nature of the data contained within the applications. We are diligent about data security and have adopted the American Institute of Certified Public Accountants (“AICPA”) SOC 2 set of security controls and ISO27001 standards across various parts of our learning platform. We demonstrate compliance with these controls through annual audits and web application vulnerability assessments.

Customers

As of December 31, 2022, we had 7,436 customers representing Higher Education institutions, Continuing Education and K-12 districts and schools in more than 100 countries. As of December 31, 2022,Canvas is used by all Ivy League universities and we have customers in nearly all states. The majority of our academic customers implement Canvas widely within their institutions and across school districts, where applicable. We define a customer as an entity with an active subscription contract. In situations where there is a single contract that applies to an entity with multiple subsidiaries or divisions, universities or schools, only the entity that has contracted for our platform is counted as a customer. For example, a contracting school district is counted as a single customer even though the school district encompasses multiple schools. In 2022, no single customer represented more than 10% of our revenue.

Sales and Marketing

We sell our platform, applications and services primarily through a direct sales force with limited channel sales in international markets. As of December 31, 2022, our sales and marketing organization was comprised of 304 individuals. Our sales organization includes technical sales engineers who serve as experts in the technical aspects of our platform, applications and customer implementations. Many of our sales efforts require us to respond to request for proposals (“RFP”), particularly in the Higher Education space and to a lesser extent in K-12.

We engage in a variety of traditional and online marketing activities designed to provide sales lead generation and sales support and promote brand awareness. Our specific marketing activities for lead generation include advertising in trade publications, campaigns, digital advertising, including search engine optimization and search engine marketing, display search, email, and referral marketing. Brand awareness activities include press relations in business, human resources, education publications and blogs, market specific advertising campaigns and speaking engagements, field events, and industry trade-shows and seminars. We also host InstructureCon, our annual user conference for current customers and prospects. InstructureCon 2022 was held virtually due to the remaining effects of the COVID-19 pandemic and more than 15,000 people attended.

Customer Success

Although our platform is easy to adopt and use, we believe strong customer support and services are essential for customer retention. We provide most post-sales customer support by phone or video conferencing, resulting in a more efficient and cost-effective business model for us and our customers. Our Customer Experience Team is global and consists of the following post-sales support and services:

- ***Customer Success Management.*** Most customers have a Customer Success Manager or Customer Success Team that advocates for the customer’s needs and serves as first point of contact for questions and requests. The Customer Success Management Team learns about our enterprise and strategic customers’ vision and the role our platform will play, helps craft and execute plans to deploy and use the platform effectively, and provides regular updates throughout the customer’s experience with us to show them the return on their investment.
- ***Implementation Services.*** We believe that a positive onboarding experience leads to more satisfied customers, longer customer relationships and greater lifetime value. Implementation includes standard training and consulting services that generally take between 30 and 90 days to complete, depending on customer-side preparedness, complexity and timelines. Regularly-scheduled, highly-structured implementation activities help customers use our platform fully and effectively from the start. Most interactions take place through video conferencing.
- ***Training Services.*** Also critical to customer success is our customers’ comfort level with the features and functionality of our platform. We include standard training with every implementation and offer onsite and custom training for a fee. Training creates confidence among users that they can use our software effectively. We perform most training remotely by video conferencing.
- ***Consulting Services.*** We offer custom application development, integrations, content services, technical and change management consulting services to boost customer adoption of our applications and drive usage of features and capabilities that are unique to Instructure. We believe this increases brand loyalty and lifetime value.
- ***Instructional Design.*** Canvas experts with instructional design background and experience work with key stakeholders, local technology staff, and educators to develop and deepen the level of Canvas adoption in support of local goals and initiatives through exceptional course design practices.
- ***Support***. We provide standard support services for all customers. Customers can upgrade to our premium support services, which include 24/7/365 coverage and a more stringent SLA. Our Tier 1 offering includes our premium support services as well as direct support to users by our agents. We also provide extensive user guides, online videos and a vibrant online community for the ongoing education and assistance of our users.

Partner Ecosystem and Integration

We are committed to enabling our customers to build an ecosystem for successful learning, assessment, development and engagement. Our open platform is central to both our technology and our strategy.

From a technological perspective, we remain focused on implementing industry standards like 1EdTech™ Consortium's LTI, enabling Canvas to integrate with a broad spectrum of third-party solutions used by our customers.

Our partnership program invites third-party software, service and content providers, through a library of open APIs, to easily integrate with our applications and take advantage of value add services and events to enhance the partnership. This allows us to broaden and efficiently extend the functionality of our applications. As of December 31, 2022, we had more than 750 partners, including content providers, hardware providers, collaboration tools, publishers, and productivity tools.

Research and Development

Our product, customer success, and sales and marketing teams operate cross-functionally and regularly engage with customers, partners and industry analysts to understand customer needs and general industry trends to enhance our learning platform, existing applications and identify opportunities for new product innovations. Additionally, our research and education team analyzes user data and current online learning trends and collaborates with customers to inform learning platform and application development and growth into adjacent markets. Once improvements are identified, prioritized and resourced, the entire development organization works closely together to design, develop, test and launch new functionality and learning platform and application updates. We have made, and will continue to make, significant investments to strengthen our learning platform and existing applications, and expand the number of applications on our extendable learning platform that will benefit our customers and allow us to expand into new markets. As of December 31, 2022, 2021, and 2020, our research and development team was comprised of approximately 438, 367 and 306 employees, respectively, inclusive of contractors, which represented approximately 30%, 29% and 24%, respectively, of our global employee base.

Human Capital

We recognize that attracting, motivating and retaining passionate talent at all levels is vital to continuing our success. By improving employee retention and engagement, we also improve our ability to support our customers and protect the long-term interests of our stakeholders and stockholders. We invest in our employees through high-quality benefits and various health and wellness initiatives, and offer competitive compensation packages, ensuring fairness in internal compensation practices. In addition to a market competitive benefit package in each of our regions, we are proud to offer our employees additional benefits for mental and emotional well-being, focus on building a diverse culture and workforce, and promote peer and team recognition.

As of December 31, 2022, we employed 1,466 people. We also engage temporary employees and consultants. None of our employees are represented by a labor union. We have not experienced any work stoppages. We have high employee engagement and consider our current relationship with our employees to be good.

Employee Learning and Development

We value our investment in growing and keeping a highly skilled and efficient workforce. In addition to permitting employees to seek education reimbursement, we offer career development opportunities and work experience programs that extend beyond the physical and virtual classroom. To do this, we utilize various learning modalities, such as live virtual and in-person learning experiences, on-demand e-learning, self-service courses, learning communities, and coaching engagements.

The Pulse of Our Workforce

Multiple times per year, we conduct company-wide employee surveys to help understand how employees feel about working at Instructure and what we can do to improve their experience. Our surveys help us measure company, manager, and personal experience over time. These surveys are designed to invite feedback and actional suggestions, inform decisions, and drive change across the company.

Health and Well-being

Our health and well-being programs are designed to give employees a choice of flexible benefits to help them reach their personal goals. Our programs are tailored to help boost employee physical and mental health, create financial peace of mind, provide support for families, and help employees build a strong community.

Compensation and Benefits

We offer competitive compensation to attract and retain the best people, and we help care for our people so they can focus on our mission. Our employees' total compensation package includes market-competitive salary, bonuses or sales incentives, and equity. We generally offer full-time employees equity at the time of hire and through annual equity grants because we want them to be owners in the company and committed to our long-term success.

Competition

We operate in highly competitive markets. With respect to LMS, companies such as Blackboard, D2L, Moodle, and Schoology have offerings that compete with certain of our products across our different end markets. With respect to adjacent areas of learning analytics, program management, and instructional content, these markets are highly fragmented and we compete with a number of emerging point solutions.

We believe that we are differentiated from each of these companies by the comprehensive nature of our offerings, as we represent a platform solution across each of the above areas. Due to the expansive and integrative nature of our platform, we also encounter situations in which we may partner with a certain company with respect to one area of focus, and compete in another area.

The principal competitive factors in our markets include the following:

- integrated platform offering;
- features and functionality;
- cloud architecture;
- implementation and adoption;
- K-20 applicability;
- reliability and uptime;
- customer service;
- software integration and third-party publisher partnerships;
- a robust (1.7 million) user community; and
- pricing.

We believe that we compete favorably on the basis of these factors. Our ability to remain competitive will depend to a great extent upon our ongoing performance in the areas of product development, partner ecosystem development and customer support. In addition, many of our competitors may have greater name recognition, longer operating histories and significantly greater resources. Some competitors may be able to devote greater resources to the development, promotion and sale of their products than we can to ours, which could allow them to respond more quickly than we can to changes in customer needs. We cannot assure you that our competitors will not offer or develop products or services that are superior to ours or achieve greater market acceptance.

See "Risk Factors—Risks Related to Our Business and Industry" for a more comprehensive description of risks related to our competition.

Intellectual Property

We rely on a combination of trade secret, copyright, and trademark laws, a variety of contractual arrangements, such as license agreements, assignment agreements, confidentiality and non-disclosure agreements, and confidentiality procedures and technical measures to gain rights to and protect the intellectual property used in our business. We actively pursue registration of our trademarks, logos, service marks, and domain names in the United States and in other key jurisdictions, but, other than the patents acquired in connection with our acquisitions, we have not, to date, applied for patent protection for any of our inventions. We are the registered holder of a variety of U.S. and international domain names that include the term Instructure and Canvas.

A substantial portion of our Canvas application, including the base code, uses “open source” software we license from third parties. Open source software is made available to the general public on an “as-is” basis under the terms of a non-negotiable license. Open source software is generally freely accessible, usable and modifiable. Certain open source licenses, like the GNU Affero General Public License may require us to offer the components of our software that incorporate the open source software for no cost, make available source code for modifications or derivative works we create based upon incorporating or using the open source software, and license such modifications or derivative works under the terms of the particular open source license. We also rely on certain intellectual property rights that we license from third parties under proprietary licenses. Though such third-party technologies may not continue to be available to us on commercially reasonable terms, we believe that alternative technologies would be available to us.

To promote our open platform philosophy, we make available a substantial portion of the source code for Canvas available to the public on the “GitHub” platform for no charge, under the terms of the GNU Affero General Public License. We accept modifications of the source code for Canvas from contributors who agree to the terms of our contributor agreement. Our contributor agreement provides for assignment of joint ownership in the copyright to the contribution, and a license to any patent rights of the contributor. Contributors must also represent that it is an original work and that the contribution does not violate any third-party intellectual property right.

We control access to and use of our proprietary technology and other confidential information through the use of internal and external controls, including contractual protections with employees, contractors, customers, and partners, and our software is protected by U.S. and international copyright laws. Our policy is to require employees and independent contractors to sign agreements assigning to us any inventions, trade secrets, works of authorship, developments and other processes generated by them on our behalf and agreeing to protect our confidential information, and all of our key employees and contractors have done so. In addition, we generally enter into confidentiality agreements with our vendors and customers. We also control and monitor access to, and distribution of our software, documentation and other proprietary information. In addition, we intend to expand our international operations, and effective copyright, trademark, and trade secret protection may not be available to us in every country in which our software is available.

Regulatory

The legal environment of internet-based businesses is evolving rapidly in the United States and elsewhere. The manner in which existing laws and regulations are applied in this environment, and how they will relate to our business in particular, both in the United States and internationally, is often unclear. For example, we sometimes cannot be certain which laws will be deemed applicable to us given the global nature of our business, including with respect to such topics as data privacy and security, pricing, credit card fraud, advertising, taxation, content regulation, and intellectual property ownership and infringement. Moreover, our academic customers are regulated at the state and federal levels by legislatures, administrative agencies and other policymaking bodies that can directly impact their ability to procure and deploy technology products.

Our customers, and those with whom they communicate using our applications, upload and store customer data onto our learning platform. This presents legal challenges to our business and operations, such as rights of privacy or intellectual property rights related to the content loaded onto our learning platform. Both in the United States and internationally, we must monitor and comply with a wide variety of laws and regulations regarding the data stored and processed on our learning platform as well as the operation of our business.

Data Privacy and Security Laws

Data privacy and security with respect to the collection of personal identifiable information (“PII”) continues to be the focus of worldwide legislation and regulation. We are subject to data privacy and security regulation by regulatory authorities in the U.S. (including the states in which we conduct our business) and in other countries.

In recent years, there have been a number of well-publicized data breaches involving the unauthorized use and disclosure of individuals' PII. Many states have responded to these incidents by enacting laws requiring holders of personal information to maintain safeguards and to take certain actions in response to a data breach, such as providing prompt notification of the breach to affected individuals and state officials or amending existing laws to expand compliance obligations. For example, the California Consumer Privacy Act ("CCPA"), imposes a number of privacy and security obligations on companies who process PII of California residents. Additionally, the California Privacy Rights Act ("CPRA"), which became effective in 2023, significantly modified the CCPA, and imposes additional data protection obligations on companies doing business in California, resulting in further complexity. Moreover, Connecticut, Colorado, Virginia and Utah have each enacted comprehensive privacy laws that become effective at various times in 2023. These and other future laws may impose limits on the collection, distribution, use and storage of student PII. Federal laws are also under consideration that may create additional compliance obligations and penalties. In the EU, where companies must meet specified privacy and security standards, the General Data Protection Regulation ("GDPR") and data protection laws of each of the European Member countries require comprehensive information privacy and security protections for consumers with respect to PII collected about them. The GDPR has extra-territorial reach and has a significant impact on "data controllers" and "data processors" either with an establishment in the EU, or which offer goods or services to EU data subjects or monitor EU data subjects' behavior within the EU. The GDPR (as it existed on December 31, 2020) has been retained in U.K. law as the "U.K. GDPR" which applied in the U.K. from January 1, 2021 and results in dual regimes for organizations doing business in both the EU and the U.K. The GDPR imposes restrictions on the transfer of PII from within the European Economic Area ("EEA") (or U.K.) to jurisdictions outside of the EEA (or U.K.) which are deemed to offer protection to PII, such as the U.S., unless a valid transfer mechanism is in place or a limited derogation from the restriction applies. *Data Protection Commissioner v Facebook Ireland Limited, Maximillian Schrems* (Case C-311/18) ("Schrems II") (i) invalidated one such transfer mechanism, the Privacy Shield, (ii) upheld the European Commission's Standard Contractual Clauses ("SCCs") as a valid transfer mechanism, but (iii) provided that compliance with the SCCs must be closely monitored and the data exporter relying on them must perform a case-by-case assessment as to whether the laws of the country of importation provide adequate protection for PII. The GDPR introduced significant penalties of up to the greater of 4% of worldwide turnover and €20 million for violations of data protection rules. We have adopted additional mechanisms to assist with ongoing GDPR compliance and continue to actively monitor updates in relation to the applicability of the GDPR and U.K. GDPR to our business; and our compliance with such legislation. We post on our website our privacy policies and practices concerning the processing, use and disclosure of PII.

Additional legislation regarding privacy and security in the EU is expected in the form of the European Commission's ePrivacy Regulation which aims to reinforce trust and security in the digital single market by updating the legal framework regarding the "right to a private life" for users of electronic communications. Negotiations regarding the content of the ePrivacy Regulation are still ongoing.

Through contractual obligations with our customers we sometimes agree to certain obligations related to the Family Educational Rights and Privacy Act ("FERPA"), which generally prohibits educational institutions that receive federal funding from disclosing PII from a student's education records without the student's consent. We are also subject to the Children's Online Privacy Protection Act ("COPPA"), which applies to operators of commercial websites and online services directed to U.S. children under the age of 13 that collect personal information from children, and to operators of general audience websites with actual knowledge that they are collecting information from U.S. children under the age of 13. Also, certain laws and regulations that protect the collection, use and disclosure of particular types of data may hinder our ability to provide services to customers and potential customers subjected to such laws.

See "Risk Factors—Risks Related to Laws and Regulations" for a more comprehensive description of risks related to data privacy.

Copyrights

U.S. and international copyright and trademark laws protect the rights of third parties from infringement of their works of authorship. Our customers and users can generally use our learning platform to upload and present a wide variety of content. We maintain an active copyright infringement policy and respond to takedown requests by third-party intellectual property right owners that might result from content uploaded to our learning platform. As our business expands to other countries, we must also respond to regional and country-specific intellectual property considerations, including takedown and cease-and-desist notices in foreign languages, and we must build infrastructure to support these processes. The Data Millennium Copyright Act ("DMCA") also applies to our business. This statute includes a safe harbor that is intended to reduce the liability of online service providers for hosting content provided by users that infringes copyrights of others. The copyright infringement policies that we have implemented for our learning platform are intended to satisfy the DMCA safe harbor.

Seasonality

Our business is subject to seasonal fluctuations. A significant portion of our contracts have terms that coincide with our academic customers' typical fiscal year-end of June 30. Historical experience has shown an increase in new and renewed contracts as well as anniversary billings, all of which immediately precede the beginning of our customers' typical fiscal year-end.

Corporate and Available Information

We were incorporated in Delaware in September 2008. Our principal executive offices are located at 6330 South 3000 East, Suite 700, Salt Lake City, UT 84121 and our telephone number is (800) 203-6755. Our corporate website address is www.instructure.com. The information contained in, or that can be accessed through, our website is not part of, and is not incorporated into, this Annual Report on Form 10-K.

We file electronically with the SEC our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act. We make available on our website at www.instructure.com, free of charge, through a hyperlink on our website, copies of these reports, as soon as reasonably practicable after electronically filing such reports with, or furnishing them to, the SEC. In addition, the SEC maintains an internet site at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

Item 1A. Risk Factors.

You should carefully consider the following risk factors, in addition to the other information contained in this Annual Report on Form 10-K, including the section of this report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our financial statements and related notes. If any of the events described in the following risk factors and the risks described elsewhere in this Annual Report materializes, our business, operating results and financial condition could be negatively affected, which in turn could affect the trading value of our securities. This Annual Report on Form 10-K also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this report or factors that are currently unknown to us.

Summary of Risk Factors

There are a number of risks related to our business, regulation, our indebtedness and our common stock that you should consider. You should carefully consider all of the information presented in this section "Risk Factors." Some of the principal risks related to our business include the following:

- Risks associated with the continued economic uncertainty, including record-high inflation, supply chain challenges, labor shortages, high interest rates, foreign currency exchange volatility, concerns of economic slowdown or recession and reduced spending or suspension of investment in new or enhanced projects.
- We experienced increased customer acquisitions and renewals as a result of the COVID-19 pandemic and such increases in customer acquisitions and renewals may not be sustained or may reverse over time or at any time.
- The increased adoption and use of our platform that begun with the COVID-19 pandemic may result in interruptions, delays, or outages, increased customer interactions and waiting times, and increased variable costs, any of which could harm our business, financial condition and results of operations.
- Our business could be adversely affected by the effects of health pandemics or epidemics, including the ongoing COVID-19 pandemic.
- We have a history of losses, and we do not expect to be profitable for the foreseeable future.
- Our future revenues and operating results will be harmed if we are unable to acquire new customers, if our customers do not renew their contracts with us, or if we are unable to expand sales to our existing customers or develop new products that achieve market acceptance.
- If the markets for our applications develop more slowly than expected, our growth may slow or stall.
- If we fail to manage our growth effectively or our business does not grow as we expect, our operating results may suffer.
- Acquisitions could disrupt our business and may divert management's attention and, if unsuccessful, harm our business and operating results.
- We face significant competition from both established and new companies, and the risk of new entrants, including established entrants, offering learning platforms, which may adversely affect our ability to add new customers, retain existing customers and grow our business.
- We rely on our management team and other key employees, and the loss of one or more key employees could harm our business.
- If we fail to maintain, enhance or protect our brand, our ability to expand our customer base will be impaired and our business, financial condition and results of operations may suffer.
- A breach or compromise of our security measures or those we rely on could result in unauthorized access to customers' data, which may materially and adversely impact our reputation, business and results of operations.
- A substantial portion of the source code for Canvas is available under the terms of an open source license, and accepts contributions of modifications to that source code, each of which could negatively affect our ability to offer our learning platform or subject us to possible litigation.
- Failure to protect and enforce our proprietary technology and intellectual property rights could substantially harm our business, operating results and financial condition.

- Our customers, domestically and internationally, are highly regulated and subject to a number of challenges and risks. Our failure to comply with laws and regulations applicable to us as a technology provider for Higher Education and K-12 could adversely affect our business and results of operations, increase costs and impose constraints on the way we conduct our business.
- We face risk if our estimates of market opportunity and forecasts of market growth prove to be inaccurate or if we need to change our pricing models to compete successfully.

Risks Related to Economic Events and COVID-19

Our results could be affected by continued economic uncertainty, an economic slowdown or a recession.

The current macroeconomic environment is characterized by record-high inflation, supply chain challenges, labor shortages, high interest rates, foreign currency exchange volatility, volatility in global capital markets and growing risk of recession. Concerns about the systemic impact of a potential widespread recession (in the U.S. or internationally) or geopolitical issues have lead to increased market volatility and diminished growth expectations in the U.S. economy and abroad, which in turn could result in reductions in IT spending by our existing and prospective customers, reduced enrollments, and pressure on tuition rates and collection thereof. Prolonged economic slowdowns may result in customers delaying or canceling IT projects or seeking to lower their costs by requesting us to renegotiate existing contracts on less advantageous terms or defaulting on payments due on existing contracts or not renewing at the end of existing contract terms. As a result, broadening or protracted extension of an economic downturn could harm our business, revenue, results of operations and cash flows.

Even though as of December 31, 2022, our pipeline of new contracts and cross-sell opportunities remained healthy and state budgets for digital transformation projects were robust with approximately 70% of the Elementary and Secondary School Emergency Relief fund yet to be invested according to the Department of Education, record teacher retirements and strained capacity began slowing decision-making and impacted K-12 sales cycles. We have not experienced material adverse impacts to our results of operations, but there is no guarantee that worsening of economic conditions will not result in reduced K12 or higher education spend or a delay or suspension of investment in new or enhanced projects.

In addition, during 2022, the U.S. dollar strengthened against foreign currencies. The U.S dollar may continue to strengthen against foreign currencies as the U.S. Federal Reserve further raises the federal funds interest rate, which could further impact our reported expenses. Similarly, as a result of increased federal funds interest rates, the interest rate applicable to our Senior Term Loan increased from 3.25% as of December 31, 2021 to 6.12% as of December 31, 2022, impacting our cost of debt. These items have not had a material impact on our results of operations to date.

A severe or prolonged economic downturn, including a recession or depression, could impact our customer spending and as a result, impact our business, including our revenues and our ability to raise additional capital when needed on favorable terms or at all. We cannot anticipate the impact of the current economic environment on our business and any of the foregoing could materially harm our business. Nevertheless, if economic conditions worsen or a recession occurs, our business, operations and financial results could be materially adversely affected.

Our new customer acquisition and expansion and customer renewals increased as a result of the COVID-19 pandemic and such increases in customer acquisitions and renewals may not be sustained or may reverse over time or at any time.

We experienced significant increases in customer acquisition and expansion and customer renewals as a result of the COVID-19 pandemic, particularly as it related to statewide implementations of our learning platform. You should not rely on the increase in customer acquisitions and renewals experienced during the height the COVID-19 pandemic as an indication of our future performance. Many factors may contribute to declines in our acquisitions of customers and customer renewals in future periods, including if there is slowing demand for our learning platform, as a result of macroeconomic conditions or a potential recession. If our growth rate declines, investors' perceptions of our business and the trading price of our common stock could be adversely affected.

The continued increased use of our platform that begun with the COVID-19 pandemic has resulted in increased customer interactions and wait times, and may result in interruptions, delays, or outages in our learning platform, which could result in breach of our standard customer agreements, our performance guarantees and service level standards thereunder; and will result in increased variable costs, all of which could harm our business financial condition and results of operations.

The usage and adoption of our learning platform increased as a result of the COVID-19 pandemic and customer interactions and wait times for our customers increased accordingly. If our customer support teams are unable to keep up with the increased demands of our customers, customers may experience delays or interruptions in service, which could result in the breach of our standard customer agreements including performance guarantees and service level standards that obligate us to provide credits in the event of a significant disruption in our platform.

We rely upon AWS to operate certain aspects of our services and if our arrangement with AWS is unable to keep up with our increased needs for capacity, particularly in light of the increased adoption and usage of our platform that begun with the pandemic, we will need to adapt our arrangement with AWS to meet such increased demand. As a result of our AWS usage demands increasing, we experienced higher variable costs. If such higher variable costs continue to increase, they may disproportionately affect our flat fee arrangements and further be disproportionate to any fee increases for our services, which may harm our business, financial condition, and operating results. As our customers transitioned back to the classroom, the demand for our network and data storage capacity, inclusive of third-party cloud hosting, has come down from peak pandemic levels, but remains significantly higher than pre-pandemic levels.

Health pandemics or epidemics, including the ongoing COVID-19 pandemic could materially adversely affect our business and prospects.

Our business could be adversely affected by the effects of health pandemics or epidemics, including the ongoing COVID-19 pandemic, the evolution of which continues to be uncertain. As a result of COVID-19, we incurred increased costs for our operations; performed our operations remotely; experienced difficulty in recruiting personnel; were subject to the risk that our suppliers, system integrators and channel partners could experience delays or interruptions in their ability to provide services to us or our customers; and were subject to the risk that the systems of third parties that we rely on for certain critical inputs to our business and learning platform, such as data centers and technology infrastructure, could be interrupted. A resurgence of COVID-19 or the outbreak of another health pandemic or epidemic could disrupt our business and could have a negative impact on our revenue, cash flows and results of operations.

Risks Related to Our Business and Industry

We have a history of losses and anticipate that we will continue to incur losses for the foreseeable future and may not achieve or maintain profitability in the future.

We have incurred net losses of $34.2 million, $88.7 million, $178.0 million, and $22.2 million, for the years ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period, respectively. We had an accumulated deficit of $300.9 million at December 31, 2022. We must generate and sustain higher revenue levels in future periods to become profitable, and, even if we do, we may not be able to maintain or increase our profitability. We expect to continue to incur losses for the foreseeable future as we expend substantial financial and other resources on, among other things:

- sales and marketing, including expanding our direct sales organization and marketing programs, particularly for larger customers;
- investments in our research and development team, and the development of new applications and new features for, and enhancements of, our existing applications;
- expansion of our operations and infrastructure, both domestically and internationally; and
- general administration, including legal, accounting, and other expenses related to being a public company.

These expenditures may not result in additional revenue or the growth of our business. We also expect that our revenue growth rate will continue to decline over time. Accordingly, we may not be able to generate sufficient revenue to offset our expected cost increases and achieve and sustain profitability. If we fail to achieve and sustain profitability, the market price of our common stock could decline.

We depend on new customer acquisition and expansion and customer renewals to grow our business.

We derive, and expect to continue to derive, a substantial majority of our revenue from the sale of new subscriptions or renewals of subscriptions to our learning platform and applications and cross-selling additional offerings into our existing customer base. Our growth today is primarily driven by new subscriptions and the related services and support bookings. Our contracts typically vary in length between one and five years and our customers have no obligation to renew their subscriptions after the expiration of their initial subscription periods. Our customers may elect not to renew or may seek to renew for lower subscription amounts or for shorter contract lengths. Our customers may make their decision to renew based on a number of factors, including their respective resources, pricing changes, their adoption and utilization of our applications and services, their satisfaction with our learning platform and applications, procurement or budgetary decisions from legislative or other regulatory bodies, and deteriorating general economic conditions. As our customer base continues to grow, renewals will become an increasingly important part of our results. If our customers do not renew their subscriptions for our learning platform and applications, or decrease the amount they spend with us, our revenue will decline and our business will be harmed.

If the markets for our applications develop more slowly than we expect, our growth may slow or stall as demand for our learning platform reduces, and our operating results would be harmed.

The markets for learning platforms are still evolving, and we depend on continued growth of these markets. In particular, we do not know whether the trend of adoption of cloud applications and infrastructure we have experienced with our academic customers in the past will continue in the future. To date, we have derived a substantial majority of our revenue from Canvas. A critical factor for our continued growth is our ability to sell our learning platform to new customers in Higher Education and K-12. The adoption trend for our academic customers is subject to influence from federal, state and local policymakers. We will continue to incur substantial operating costs, particularly in sales and marketing and research and development, in attempting to develop these markets. If the market for our learning platform does not develop as we anticipate, or does not continue to grow, or grows more slowly than we expect, our operating results would be harmed.

We have also benefited from the accelerated adoption of remote learning as a result of the COVID-19 pandemic and have therefore experienced significant revenue growth in prior periods. You should not rely on the revenue growth of any prior quarterly or annual period as an indication of our future performance. The accelerated remote learning trend has eased and the COVID-19 pandemic continues to taper. To the extent these trends continue to slow or reverse, our sales and profitability would be adversely affected.

We could lose customers and revenue if there are changes in the spending policies or budget priorities for government funding of colleges, universities, K-12 schools and other education providers.

Our customers include colleges, universities, K-12 schools and other education providers, many of which depend substantially on government funding. Accordingly, any general decrease, delay or change in federal, state or local funding for colleges, universities, schools and other education providers could cause our current and potential customers to reduce their purchases of our learning platform, or decide not to renew their subscriptions, any of which could cause us to lose customers and revenue. In addition, a specific reduction in governmental funding support for learning platform could also cause us to lose customers and revenue.

Our business may be adversely affected by changes in state educational funding, resulting from changes in legislation, both at the federal and state levels, changes in the state procurement process, changes in government leadership, declines in K-12 school enrollment, emergence of other priorities and changes in the condition of the local, state or U.S. economy. Moreover, future reductions in federal funding and the state and local tax bases could create an unfavorable environment, leading to budget shortfalls resulting in a decrease in educational funding. Any decreased funding for schools may harm our recurring and new business materially if our customers are not able to find and obtain alternative sources of funding.

Interruptions or performance problems associated with our learning platform may adversely affect our business, financial condition and results of operations.

Our continued growth depends in part on the ability of our existing and potential customers to access our learning platform and its capabilities at any time and within an acceptable amount of time. We have experienced, and may in the future experience, disruptions, outages, and other performance problems due to a variety of factors, including infrastructure changes, introductions of new functionality, human or software errors, capacity constraints due to an overwhelming number of users accessing our learning platform and its capabilities simultaneously, denial of service attacks, or other security-related incidents. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time.

It may become increasingly difficult to maintain and improve our performance, especially during peak usage times and as our learning platform and its capabilities become more complex and our user traffic increases. If our learning and its capabilities are unavailable or if our users are unable to access our learning platforms and its capabilities within a reasonable amount of time or at all, we may experience a loss of customers, lost or delayed market acceptance of our learning platform, delays in payment to us by customers, injury to our reputation and brand, legal claims against us, particularly potential contractual liabilities with our customers, and the diversion of our resources. In addition, to the extent that we do not effectively address capacity constraints, upgrade our systems as needed and continually develop our technology and network architecture to accommodate actual and anticipated changes in technology, our business, financial condition and results of operations may be adversely affected.

Moreover, our standard customer agreements include performance guarantees and service level standards that obligate us to provide credits in the event of a significant disruption in our platform. To the extent that our third-party service providers experience outages, or to the extent we do not effectively address capacity constraints, upgrade our systems as needed, and continually develop our technology and network architecture to accommodate actual and anticipated changes in technology, our business and operating results may be adversely affected.

If we fail to manage our growth effectively or our business does not grow as we expect, or if we fail to scale our business or manage our expenses, our operating results may suffer.

Our growth has placed, and will continue to place, a significant strain on our operational, financial and management infrastructure. To manage this growth effectively, we must continue to improve our operational, financial and management systems and controls by, among other things:

- effectively attracting, training and integrating new employees, particularly technical personnel and members of our management and sales teams;
- further improving our key business systems, processes and information technology infrastructure to support our business needs;
- enhancing our information and communication systems to ensure that our employees are well-coordinated and can effectively communicate with each other and our customers; and
- improving our internal control over financial reporting and disclosure controls and procedures to ensure timely and accurate reporting of our operational and financial results.

If we fail to manage our expansion or implement new systems, or if we fail to implement improvements or maintain effective internal controls and procedures, costs and expenses may increase more than expected and we may not expand our customer base, increase renewals, enhance existing solutions, develop new solutions, satisfy customers, respond to competitive pressures, or otherwise execute our business plan. If we are unable to effectively manage our growth, our operating results will be harmed.

We have expanded specific functions over time in order to scale efficiently, to improve our cost structure and help scale our business. Our need to scale our business has placed, and will continue to place, a significant strain on our administrative and operational business processes, infrastructure, facilities and other resources. Our ability to manage our operations will require significant expenditures and allocation of valuable management resources to improve internal business processes and systems, including investments in automation. Further, we expect to continue to expand our business globally, which will require additional resources and controls. If our operations, infrastructure and business processes fail to keep pace with our business and customer requirements, customers may experience disruptions in service or support or we may not scale the business efficiently, which could adversely affect our reputation and adversely affect our revenue. There is no guarantee that we will be able to continue to develop and expand our infrastructure and business processes at the pace necessary to scale the business, and our failure to do so may have an adverse effect on our business. If we fail to efficiently expand our engineering, operations, customer support, professional services, cloud infrastructure, IT and financial organizations and systems, or if we fail to implement or maintain effective internal business processes, controls and procedures, our costs and expenses may increase more than we planned or we may fail to execute on our learning platform roadmap or our business plan, any of which would likely seriously harm our business, operating results and financial condition.

Because we generally recognize revenue from subscriptions ratably over the term of the agreement, near term changes in sales may not be reflected immediately in our operating results.

We offer our learning platform primarily through multi-year subscription agreements and generally recognize revenue ratably over the related subscription period. As a result, much of the revenue we report in each quarter is derived from agreements entered into during prior quarters or years. A decline in new or renewed subscriptions in any one quarter is not likely to be reflected immediately in our revenue results for that quarter. However, declines would negatively affect our revenue and deferred revenue balances in future periods, and the effect of significant downturns in sales and market acceptance of our platform and applications, and potential changes in our rate of renewals, may not be fully reflected in our results of operations until future periods. Our subscription model also makes it difficult for us to rapidly increase our total revenue and deferred revenue balance through additional sales in any period, as revenue from new customers is recognized over the applicable subscription term.

Acquisitions could disrupt our business and may divert management's attention and, if unsuccessful, harm our business.

We intend to expand by continuing to make acquisitions that could be material to our business. We have completed seven acquisitions since 2017 and our ability as an organization to successfully acquire and integrate technologies or businesses is limited. Acquisitions involve many risks, including the following:

- an acquisition may negatively affect our results of operations and financial condition because it may require us to incur charges or assume substantial debt or other liabilities, may cause adverse tax consequences or unfavorable accounting treatment, may expose us to claims and disputes by third parties, including intellectual property claims and disputes, or may not generate sufficient financial return to offset additional costs and expenses related to the acquisition;
- we may encounter difficulties or unforeseen expenditures in integrating the business, technologies, products, personnel or operations of any company that we acquire, particularly if key personnel of the acquired company decide not to work for us;
- an acquisition may disrupt our ongoing business, divert resources, increase our expenses and distract our management;
- an acquisition may result in a delay or reduction of customer purchases for both us and the company we acquired due to customer uncertainty about continuity and effectiveness of service from either company;
- we may encounter difficulties in successfully selling, or may be unable to sell, any acquired products;
- an acquisition may involve the entry into geographic or business markets in which we have little or no prior experience or where competitors have stronger market positions;
- challenges inherent in effectively managing an increased number of employees in diverse locations;
- the potential strain on our financial and managerial controls and reporting systems and procedures;
- potential known and unknown liabilities associated with an acquired company;
- our use of cash to pay for acquisitions would limit other potential uses for our cash;
- if we incur debt to fund such acquisitions, such debt may subject us to material restrictions on our ability to conduct our business and financial maintenance covenants, and materially increase our interest expense;
- the risk of impairment charges related to potential write-downs of acquired assets or goodwill in future acquisitions;
- to the extent that we issue a significant amount of equity or equity-linked securities in connection with future acquisitions, existing stockholders may be diluted and earnings per share may decrease; and
- managing the varying intellectual property protection strategies and other activities of an acquired company.

We may not succeed in addressing these or other risks or any other problems encountered in connection with the integration of any acquired business. The inability to integrate successfully the business, technologies, products, personnel or operations of any acquired business, or any significant delay in achieving integration, could harm our business and operating results.

Our ability to use net operating losses to offset future taxable income may be subject to limitations.

As of December 31, 2022, we had approximately $271.0 million and $376.0 million of federal and state net operating loss carryforwards, respectively, available to reduce future taxable income that if unused will begin to expire in 2036 for federal purposes and 2022 for state tax purposes. Unused federal net operating loss carryforwards for the tax year ended December 31, 2017 and prior years could expire unused and be unavailable to offset future income tax liabilities. Under the Tax Cuts and Jobs Act (the "TCJA"), as modified by the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), federal net operating losses incurred after December 31, 2017 and in future years may be carried forward indefinitely, but the deductibility of such federal net operating losses after 2020 is limited to 80% of current year taxable income in any given year. The CARES Act temporarily repealed the 80% taxable income limitation for tax years beginning before January 1, 2021; net operating loss carryforwards generated after December 31, 2017 and carried forward to taxable years beginning after December 31, 2020 are subject to the 80% limitation. Also, under the CARES Act, net operating losses arising in 2018, 2019 and 2020 can be carried back 5 years. It is uncertain if and to what extent various states will conform to the TCJA or the CARES Act. In addition, under Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change, by value, in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes to offset its post-change income or taxes may be limited. We may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control. If an ownership change occurs and our ability to use our net operating loss carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations.

Changes in our pricing models could adversely affect our revenue, gross profit and financial position.

We have in the past and expect in the future that we will need to change our pricing model or contract length from time to time. For example, in September 2020, we raised our subscription prices for North America. As the market for our platform and applications grows, as new competitors introduce new competitive applications or services, or as we enter into new international markets, we may be unable to attract new customers at the same price or based on the same pricing models we have historically used, or for contract lengths consistent with our historical averages. Pricing and contract length decisions may also impact the adoption of our learning platform and negatively impact our overall revenue. Moreover, larger organizations may demand substantial price concessions or shorter contract duration. As a result, in the future we may be required to reduce our prices or offer shorter contract durations, which could adversely affect our revenue, gross profit and financial position.

The length and unpredictability of the sales cycle for our learning platform could delay new sales and cause our revenue for any given quarter to fail to meet our estimates or market expectations.

The sales cycle between our initial contact with a potential customer and the signing of a subscription agreement varies. As a result of the variability and length of the sales cycle, we have only a limited ability to forecast the timing of sales. A delay in or failure to complete sales could harm our business and financial results, and could cause our financial results to vary significantly from period to period. Our sales cycle varies widely, reflecting differences in our potential customers' decision-making processes, procurement requirements and budget cycles, and is subject to significant risks over which we have little or no control, including:

- customers' budgetary constraints and priorities;
- the timing of our customers' budget cycles;
- the need by some customers for lengthy evaluations that often include both their administrators and faculties; and
- the length and timing of customers' approval processes.

Potential customers typically conduct extensive and lengthy evaluations before committing to our applications and services and generally require us to expend substantial time, effort and money educating them as to the value of our learning platform.

If we fail to effectively develop and expand our sales and marketing capabilities, our ability to increase our customer base and increase the market share of our learning platform and applications could be harmed.

In order to continue to increase the number of customers and market share of our platform and applications, we will need to continue to develop our sales and marketing operations, including our domestic and international sales force. We expect to continue dedicating significant resources to sales and marketing programs for the foreseeable future. The effectiveness of our inbound sales and marketing has varied over time and may vary in the future. Our business will be harmed if our efforts do not generate a correspondingly significant increase in revenue. We may not achieve anticipated revenue growth from expanding our sales force if we are unable to hire, develop and retain talented sales personnel, if our new sales personnel are unable to achieve desired productivity levels in a reasonable period of time or if our sales and marketing programs are not effective.

We face significant competition from both established and new companies, and the risk of new established entrants, offering learning platforms, which may harm our ability to gain new customers, retain existing customers and grow our business.

The learning platform market is evolving and highly competitive, particularly in the Higher Education and K-12 market. With the introduction of new technologies and the potential entry of new competitors into the market, we expect competition to persist and intensify in the future, which could harm our ability to increase sales, maintain or increase renewals and maintain our prices.

We face intense competition from other software companies that develop learning platforms. With respect to LMS, companies such as Blackboard, D2L, Moodle, and Schoology have offerings that compete with certain of our products across our different end markets. We may also in the future face competition from new entrants to our market, some of whom would be able to invest massive resources to develop a unified platform that competes directly with ours or to acquire one or more of our competitors to compete with us. If existing or new companies develop or market a learning platform similar to ours, develop an entirely new software platform for the Higher Education and K-12 sector, acquire one of our existing competitors or form a strategic alliance with one of our competitors or other industry participants, our ability to compete effectively could be significantly impacted, which would have a material adverse effect on our business, results of operations and financial condition.

Competition could significantly impede our ability to sell or renew subscriptions to our platform and applications on terms favorable to us. Our current and potential competitors may develop and market new technologies that render our existing or future solutions less competitive, unmarketable or obsolete. In addition, if these competitors develop platforms and applications with similar or superior functionality to our learning platform, we may need to decrease the prices or accept less favorable terms for our subscriptions in order to remain competitive. If we are unable to maintain our pricing due to competitive pressures, margins will be reduced and operating results will be negatively affected.

Certain competitors have, and potential competitors may have, significantly more financial, technical, marketing and other resources than us, and may be able to devote greater resources to the development, promotion, sale and support of their applications and services, have more extensive customer bases and broader customer relationships, and longer operating histories and greater name recognition than us. As a result, these competitors may be better able to respond quickly to new technologies and to undertake more extensive marketing campaigns. In a few cases, these vendors may also be able to offer additional software at little or no additional cost by bundling them with their existing suite of applications. To the extent any competitor has existing relationships with potential customers for other applications, those customers may be unwilling to purchase our learning platform because of their existing relationships with the competitor. If we are unable to compete with such companies, the demand for our platform and applications could be adversely affected.

Joint ventures, platform partnerships, and strategic alliances may have a material adverse effect on our business, results of operations and prospects.

We may enter into joint ventures, platform partnerships, and strategic alliances as part of our long-term business strategy, including with current and future competitors. Joint ventures, platform partnerships, strategic alliances, and other similar arrangements involve significant investments of both time and resources, and there can be no assurances that they will be successful. They may present significant challenges and risks, including that they may not advance our business strategy, we may get an unsatisfactory return on our investment or lose some or all of our investment, they may distract management and divert resources from our core business, they may expose us to unexpected liabilities, or we may choose a partner that does not cooperate as we expect them to and that fails to meet its obligations or that has economic, business, or legal interests or goals that are inconsistent with ours.

Entry into certain joint ventures, platform partnerships, or strategic alliances now or in the future, particularly if entered into with a current and future competitor, may be subject to government regulation, including review by U.S. or foreign government entities, or restrict our operations. If a joint venture or similar arrangement were subject to regulatory review, such regulatory review might limit our ability to enter into the desired strategic alliance and thus our ability to carry out our long-term business strategy. Additionally, in the event we enter into an arrangement with a particular partner, we may be less likely (or unable) to work with one or more direct competitors of our partner with which we would have worked absent the arrangement.

If we fail to offer high-quality professional services and support, our business and reputation may suffer.

High-quality professional services and support, including training, implementation and consulting services, are important for the successful marketing, sale and use of our learning platform and applications and for the renewal of existing customers. The importance of high-quality professional services and support will increase as we expand our business and pursue new customers. If we do not provide effective ongoing support, our ability to sell additional functionality and services to, or to retain, existing customers may suffer and our reputation with existing or potential customers may be harmed.

Our expense reduction plan may not produce the savings expected and may negatively impact our other initiatives and efforts to grow our business.

We are consistently exploring measures aimed at improving our profitability and maintaining flexibility in our capital resources, including the introduction of our expense reduction plan. For example, in 2020 we began restructuring our mix of onshore and offshore research and development through a variety of initiatives, including moving a portion of our development efforts to Budapest, Hungary. Also in 2020, we simplified our organizational design and aligned the organization with our sole focus on serving education, eliminating low ROI program expenses, and closing and consolidating facilities internationally and within the United States. We expect to continue to take measures to improve our profitability and cash flows from operating activities. However, there can be no assurance that the cost control measures will be successful. In addition, these and any future spending reductions, if any, may negatively impact our other initiatives or our efforts to grow our business, which may negatively impact our future results of operations and increase the burden on existing management, systems, and resources.

Our business outside the U.S. exposes us to risks associated with international operations.

In 2022, 21% of our revenue was derived from outside the United States. We opened our international headquarters in London, England in 2014 and have offices in Sydney, Australia, Hong Kong, Sao Paulo, Brazil, and Budapest, Hungary. Our international efforts strategy focuses on the United Kingdom (the "U.K."), the Nordics, Australia, and New Zealand, and is expected to be bolstered in the future in growing markets such as the Benelux region, Spain, Singapore, Philippines, and Brazil. Our current international operations and future initiatives involve a variety of risks, including:

- more stringent regulations relating to data security and the unauthorized use of, or access to, commercial and personal information, particularly in the European Union (the "EU") and the U.K.;
- technical or latency issues in delivering our platform and applications;
- dependence on certain third parties, including potentially resellers with whom we do not have extensive experience;
- unexpected changes in regulatory requirements, taxes or trade laws;
- differing labor regulations, especially in the EU, where labor laws are generally more advantageous to employees as compared to the U.S., including deemed hourly wage and overtime regulations in these locations;
- challenges inherent in efficiently managing an increased number of employees over large geographic distance, including the need to implement appropriate systems, policies, benefits and compliance programs;
- difficulties in maintaining our company culture with a dispersed and distant workforce;
- difficulties in managing a business in new markets with diverse cultures, languages, customs, legal systems, alternative dispute systems and regulatory systems;
- currency exchange rate fluctuations and the resulting effect on our revenue and expenses, and the cost and risk of entering into hedging transactions if we choose to do so in the future;
- limitations on our ability to reinvest earnings from operations in one country to fund the capital needs of our operations in other countries;
- limited or insufficient intellectual property protection;
- political instability or terrorist activities;
- requirements to comply with foreign privacy and information security laws and regulations and the risks and costs of non-compliance;
- likelihood of potential or actual violations of domestic and international anticorruption laws, such as the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"), and the U.K. Bribery Act 2010, or of U.S. and international export control and sanctions regulations, which likelihood may increase with an increase of sales or operations in foreign jurisdictions and operations in certain industries; and

- adverse tax burdens and foreign exchange controls that could make it difficult to repatriate earnings and cash.

Our limited experience in operating our business internationally increases the risk that any potential future expansion efforts that we may undertake will not be successful. If we invest substantial time and resources to expand our international operations and are unable to do so successfully and in a timely manner, our business and operating results will be harmed.

We rely on our management team and other key employees, and the loss of one or more key employees could harm our business.

Our success and future growth depend upon the continued services of our management team and other key employees in the areas of engineering, marketing, sales, services and general and administrative functions. From time to time, there may be changes in our management team resulting from the hiring or departure of executives. We also are dependent on the continued service of our existing software engineers and information technology personnel because of the complexity of our learning platform, technologies and infrastructure.

Further, we have recently experienced significant changes to our executive leadership team. In 2022, we named a new President and Chief Operating Officer. This type of management change has the potential to disrupt our operations due to the operational and administrative inefficiencies, added costs, increased likelihood of turnover, and the loss of personnel with vital institutional knowledge, experience and expertise, which could result in significant disruptions to our operations. In addition, changes in key leadership positions may temporarily affect our financial performance and results of operations as new leadership becomes familiar with our business.

We may terminate any employee's employment at any time, with or without cause, and any employee may resign at any time, with or without cause. We do not maintain any "key man" insurance for any employee. The loss of one or more of our key employees could harm our business.

If we fail to attract and retain additional qualified personnel, we may be unable to execute our business strategy.

To execute our business strategy, we must attract and retain highly qualified personnel. In particular, we compete with many other companies for software developers with high levels of experience in designing, developing and managing cloud-based software, as well as for skilled information technology, marketing, sales and operations professionals, and we may not be successful in attracting and retaining the professionals we need. In addition, as remote working arrangements continue to become normalized, we anticipate increased competition in attracting and retaining the professionals we need from companies located elsewhere in the U.S. and internationally. Companies based in Silicon Valley may offer remote working arrangements and compete for the same employees in our target markets. We have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining highly skilled employees with appropriate qualifications which may, among other things, impede our ability to execute our software development and sales strategies. Many of the companies with which we compete for experienced personnel have greater resources than we do. In addition, in making employment decisions, particularly in the software industry, job candidates often consider the value of the stock options or other equity incentives they are to receive in connection with their employment. If the price of our stock declines, or experiences significant volatility, our ability to attract or retain qualified employees will be adversely affected. If we fail to attract new personnel or fail to retain and motivate our current personnel, our growth prospects could be harmed.

If we cannot maintain our company culture as we grow, we could lose the innovation, teamwork, passion and focus on execution that we believe contribute to our success and our business may be harmed.

We believe that a critical component to our success has been our company culture, which is based on dedication to openness, relationships, equality, ownership and simplicity. We have invested substantial time and resources in building our team within this company culture. If we fail to preserve our culture our ability to retain and recruit personnel and to effectively focus on and pursue our corporate objectives could be harmed. As we grow, we may find it difficult to maintain these important aspects of our company culture. If we fail to maintain our company culture, our business may be harmed.

Our business is dependent upon our brand recognition and reputation, and if we fail to maintain or enhance our brand recognition or reputation, our business could be harmed.

We believe that maintaining and enhancing our brands and our reputation are critical to our relationships with our customers and to our ability to attract new customers. We also believe that our brands and reputation will be increasingly important as competition in our markets continues to develop. Our success in this area will depend on a wide range of factors, some of which are beyond our control, including the following:

- the efficacy of our marketing efforts;
- our ability to continue to offer high-quality, innovative and error- and bug-free applications;
- our ability to retain existing customers and obtain new customers;
- our ability to maintain high customer satisfaction;

- the quality and perceived value of our applications;
- our ability to successfully differentiate our applications from those of our competitors;
- actions of competitors and other third parties;
- our ability to provide customer support and professional services;
- any misuse or perceived misuse of our applications;
- positive or negative publicity;
- interruptions or delays on our platform or applications;
- cyber-attacks on or security breaches of our platform and applications or the platforms of certain of our subcontractors; and
- litigation, legislative or regulatory-related developments.

If our brand promotion activities are not successful, our operating results and growth may be harmed.

Furthermore, negative publicity, whether or not justified, relating to events or activities attributed to us, our employees, our partners or others associated with any of these parties, may tarnish our reputation and reduce the value of our brand. Damage to our reputation and loss of brand equity may reduce demand for our learning platform and have an adverse effect on our business, operating results and financial condition. Moreover, any attempts to rebuild our reputation and restore the value of our brands may be costly and time consuming, and such efforts may not ultimately be successful.

Our billing and collections processing activities are complex and time-consuming, and any delay in transmitting and collecting payment could have an adverse effect on our future revenue.

Billing for our learning platform is complex, time-consuming and expensive. Depending on the billing arrangement and applicable law, we often bill various entities within a school district, all of which may have different billing requirements. In addition, because many of our customers are educational institutions that provide fundamental services, it is difficult to cease service when bills are not paid, which limits our collection methods. These factors create increased risk in our collection efforts, including long collection cycles and the risk that we may never collect at all, either of which could adversely affect our business, financial condition and results of operations.

Risks Related to our Technology and our Intellectual Property Rights

We rely upon AWS to operate certain aspects of our service and any disruption of or interference with our use of AWS could impair our ability to deliver our learning platform to our customers, resulting in customer dissatisfaction, damage to our reputation, loss of customers and harm to our business.

AWS provides a distributed computing infrastructure platform for business operations, or what is commonly referred to as a cloud computing service. We have designed our learning platform, software and computer systems to use data processing, storage capabilities and other services provided by AWS. Currently, our cloud service infrastructure is run on AWS. Given this, we cannot easily switch our AWS operations to another cloud provider, so any disruption of or interference with our use of AWS would impact our operations and our business would be adversely impacted. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. AWS may terminate the agreement without cause by providing 90 days' prior written notice, and may terminate the agreement with 30 days' prior written notice for cause, including any material default or breach of the agreement by us that we do not cure within the 30-day period. The agreement requires AWS to provide us their standard computing and storage capacity and related support in exchange for timely payment by us. If any of our arrangements with AWS is terminated, we could experience interruptions in our learning platform as well as delays and additional expenses in arranging new facilities and services.

Additionally, if our arrangement with AWS is unable to keep up with our increased needs for capacity, customers may experience delays or interruptions in their use of our learning platform. We plan to continue adapting our arrangement with AWS to meet increased demand, but we may be unable to do so in a timely manner. As our AWS usage demands increase, we will experience higher variable costs and such higher variable costs may disproportionately affect our flat fee arrangements and further be disproportionate to any fee increases for our services, which may harm our business, financial condition, and operating results. We utilize third-party data center hosting facilities operated by AWS, located in various sites within the states of Virginia, Ohio and Oregon. For international customers, we utilize third-party data center hosting facilities operated by AWS located in Dublin, Ireland, Frankfurt, Germany, Sydney, Australia, Montreal, Canada and Singapore.

Our operations depend, in part, on AWS's abilities to protect these facilities against damage or interruption from natural disasters, power or telecommunications failures, criminal acts and similar events. Despite precautions taken at our data centers, the occurrence of spikes in usage volume, a natural disaster, an act of terrorism, vandalism or sabotage, a decision to close a facility without adequate notice, or other unanticipated problems at a facility could result in lengthy interruptions in the availability of our platform. Even with current and planned disaster recovery arrangements, our business could be harmed. Also, in the event of damage or interruption, our insurance policies may not adequately compensate us for any losses that we may incur. These factors in turn could further reduce our revenue, subject us to liability and cause us to issue credits or cause customers to fail to renew their subscriptions, any of which could harm our business or negatively impact our brand.

If we fail to adapt and respond effectively to rapidly changing technology, evolving industry standards and changing customer needs or requirements, our learning platform may become less competitive.

Our future success depends on our ability to adapt and enhance our learning platform. To attract new customers and increase revenue from existing customers, we need to continue to enhance and improve our application offerings, features and enhancements to meet customer needs at prices that our customers are willing to pay. Such efforts will require adding new functionality and responding to technological advancements, which will increase our research and development costs. If we are unable to develop applications that address customers' needs, or enhance and improve our platform in a timely manner, we may not be able to maintain or increase market acceptance of our learning platform. Further, our competitors may expend a considerably greater amount of funds on their research and development programs, and those that do not may be acquired by larger companies that would allocate greater resources to our competitors' research and development programs. If we fail to maintain adequate research and development resources or compete effectively with the research and development programs of our competitors our business could be harmed. Our ability to grow is also subject to the risk of future disruptive technologies. Access and use of our platform and applications is provided via the internet, which, itself, was disruptive to the previous enterprise software model. If new technologies emerge that are able to deliver learning platforms and related applications at lower prices, more efficiently, more conveniently or more securely, such technologies could adversely affect our ability to compete.

If we do not maintain the compatibility of our learning platform with third-party applications that our customers use in their schools or businesses, our revenue will decline.

A significant percentage of our customers choose to integrate our applications and platform with certain capabilities of third-party publishers and software providers using APIs. The functionality and popularity of our platform depends, in part, on our ability to integrate our platform with third-party applications and software. Third-party providers of applications may change the features of their applications and software, restrict our access to their applications and software or alter the terms governing the use of their applications and software and access to those applications and software in an adverse manner. Such changes could functionally limit or terminate our ability to use these third-party applications and software in conjunction with our learning platform, which could negatively impact our offerings and harm our business. If we fail to integrate our platform with new third-party applications and software that our customers utilize, we may not be able to offer the functionality that our customers need, which would negatively impact our ability to generate revenue and adversely impact our business.

If our network or computer systems are breached or unauthorized access to customer or other data is reported to have occurred or information is otherwise actually obtained, our platform and applications may be perceived as insecure and we may lose existing customers or fail to attract new customers, our reputation may be damaged and we may incur significant liabilities.

Use of our learning platform involves the storage, transmission and processing of our customers' data, including personal or identifying information regarding their students or employees. Our systems that house this data are potentially vulnerable to security breaches from inadvertent or intentional actions by our employees, contractors, consultants, business partners, and/or other third parties, or from cyber-attacks by malicious third parties (including the deployment of harmful malware, ransomware, denial-of-service attacks, social engineering and other means to affect service reliability and threaten the confidentiality, integrity and availability of information), which may compromise our system infrastructure or lead to the loss, destruction, alteration or dissemination of, or damage to, our data. For example, due to the COVID-19 pandemic, substantially all of our employees are working remotely. As a result, we may have increased cyber security and data security risks, due to increased use of home Wi-Fi networks and virtual private networks, as well as increased disbursement of physical machines. Cyber-attacks and other accidental or malicious internet-based activities continue to increase generally, and cloud-based platform providers of software and services have been targeted by bad actors. If any unauthorized access to or security breaches of our platform or applications, or those of our service providers, occurs, or is believed to have occurred, such an event or perceived event could result in the loss of or unauthorized processing of data, loss of intellectual property or trade secrets, loss of business, severe reputational or brand damage adversely affecting customer or investor confidence, regulatory investigations and orders, litigation, indemnity obligations, damages for contract breach, penalties for violation of applicable laws, regulations, or contractual obligations, and significant costs for remediation that may include liability for stolen assets or information and repair of system damage that may have been caused, incentives offered to customers or other business partners in an effort to maintain business relationships after a breach, and other liabilities. Additionally, any such event or perceived event could impact our reputation, harm customer confidence, hurt our sales and expansion into existing and new markets, or cause us to lose existing customers. Additionally, actual, potential or anticipated attacks may cause us to incur increasing costs, including costs to deploy additional personnel and protection technologies, train employees and engage third-party experts and consultants. Moreover, failure to maintain effective internal accounting controls related to data security breaches and cybersecurity in general could impact our ability to produce timely and accurate financial statements and could subject us to regulatory scrutiny.

In addition, if customers believe that our platform and applications do not provide adequate security for the storage of personal or other sensitive or confidential information or the transmission of such information over the internet, our business will be harmed. Customers' concerns about security or privacy may deter them from using our platform and applications for activities that involve personal or other sensitive or confidential information.

Although we maintain liability insurance for liabilities incurred as a result of some security and privacy incidents and damages, we cannot be certain that our coverage will be adequate for liabilities actually incurred or that insurance will continue to be available to us on economically reasonable terms, or at all.

Additionally, cybersecurity has become a top priority for regulators around the world, and every state in the U.S. and most other countries have laws in place requiring companies to notify users if there is a security breach that compromises certain categories of their PII. In the U.S., the SEC has proposed rules for mandatory disclosure of cybersecurity incidents suffered by public companies, as well as cybersecurity governance and risk management. Any failure or perceived failure by us to comply with these laws may subject us to significant regulatory fines and private litigation, any of which could harm our business.

Because data security is a critical competitive factor in our industry, we make public statements in our privacy policies describing the security of our learning platform. Should any of these statements be untrue, become untrue, or be perceived to be untrue, even if through circumstances beyond our reasonable control, we may face claims, including claims of unfair or deceptive trade practices, brought by the U.S. Federal Trade Commission (the "FTC"), federal, state, local, or foreign regulators, and private litigants.

Our use of open source software could impose limitations on our ability to commercialize our learning platform or subject us to possible litigation.

Our applications, in particular a substantial portion of Canvas, use open source software that we, in some cases, have obtained from third parties. Open source software is generally freely accessible, usable and modifiable, and is made available to the general public on an "as-is" basis under the terms of a non-negotiable license. The open source software used in our applications may contain real or perceived defects or security vulnerabilities which could adversely affect our reputation or subject us to claims or disputes if our customers are specifically targeted by attackers exploiting such vulnerabilities in our applications. Use and distribution of open source software may entail greater risks than use of third-party commercial software. Open source software licensors generally do not provide warranties or other contractual protections regarding infringement, misappropriation or other violation claims or the quality of the code. In addition, certain open source licenses, like the GNU Affero General Public License (the "AGPL"), may require us to offer for no cost the components of our software that incorporate the open source software, to make available source code for modifications or derivative works we create based upon incorporating or using the open source software, or to license our modifications or derivative works under the terms of the particular open source license. If we are required, under the terms of an open source license, to release the source code of our proprietary software to the public, our competitors could create similar applications with lower development effort and time, which ultimately could result in a loss of sales for us.

We may also face claims alleging noncompliance with open source license terms or infringement or misappropriation of proprietary software. These claims could result in litigation, require us to purchase a costly license or require us to devote additional research and development resources to change our software, any of which would have a negative effect on our business and operating results, including being enjoined from the offering of the components of our software that contained the open source software. In addition, if the license terms for open source software that we use change, and we cannot continue to use the version of such software that we had been using, we may be forced to re-engineer our applications, incur additional costs, or discontinue the sale of applications or services if re-engineering could not be accomplished on a timely basis, or make generally available, in source code form, all or a portion of our proprietary source code, any of which could materially and adversely affect our business and operating results.

We could also be subject to suits by parties claiming ownership of what we believe to be open source software. Litigation could be costly for us to defend, have a negative effect on our operating results and financial condition and require us to devote additional research and development resources to change our applications. Although we monitor our use of open source software to avoid subjecting our applications to unintended conditions, few courts have interpreted open source licenses, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our applications. We cannot guarantee that we have incorporated open source software in our proprietary software in a manner that will not subject us to liability, or in a manner that is consistent with our current policies and procedures, and we may inadvertently use open source software in a manner that we do not intend or that could expose us to claims for breach of contract or intellectual property infringement, misappropriation or other violation.

We make a substantial portion of the source code for Canvas available under the terms of an open source license, and accept contributions of modifications to that source code, each of which could negatively affect our ability to offer our platform and applications or subject us to possible litigation.

To promote our open platform philosophy, we make a substantial portion of the source code for Canvas available to the public on the "GitHub" platform for no charge, under the terms of the AGPL. An individual or entity with the appropriate technical and human resources may choose to use this open source version of Canvas to try to self-host the platform to avoid paying any fees to us. In addition, some individuals or entities may try to use the open source version of Canvas for commercial purposes and directly compete with us for customers. We are aware of a few entities that currently self-host the platform and are aware of some entities that are currently selling hosting and support services. If more customers decide to self-host or other entities use the base code to compete with us, we may experience lower revenue and our business may be harmed.

We accept modifications of the source code for Canvas from contributors who agree to the terms of our contributor agreement. Our contributor agreement provides for assignment of joint ownership in the copyright to the contribution, and a license to any patent rights of the contributor. Contributors must also represent that it is an original work and that the contribution does not violate any third-party intellectual property right. However, we cannot ensure that any of these contributions is free of all third-party rights and claims of intellectual property infringement or misappropriation. By incorporating any contribution into our code base, we may be subject to intellectual property infringement or misappropriation claims, which as discussed elsewhere, are costly to defend and could require costly re-writing of our code base or licensing of replacement third-party solutions. Third-party alternatives may not be available to us on commercially reasonable terms.

We are dependent on the continued availability of the internet and third-party computer and communications systems.

Our ability to provide our platform and applications to our customers depends on our ability to communicate with our customers through the public internet and third-party computer and communications systems. A severe disruption of one or more of these systems could impair our ability to process information, which could impede our ability to provide services to our customers, harm our reputation, subject us to financial penalties and liability under our SLAs, result in a loss of customers and harm our business and operating results.

Real or perceived errors, failures, or bugs in our learning platform could adversely affect our operating results and growth prospects.

We push updates to our platform on a frequent basis. Despite testing by us, errors, failures, bugs or defects may not be found in our platform or applications until after they are deployed to our customers. We have discovered and expect we will continue to discover software errors, failures, bugs or defects in our platform or applications and anticipate that certain of these errors, failures, bugs or defects will only be discovered and remediated after deployment to customers. Real or perceived errors, failures, bugs or defects in our platform and applications could result in negative publicity, loss of or delay in market acceptance of our platform and applications, loss of competitive position, or claims by customers for losses sustained by them. In such an event, we may be required, or may choose, for customer relations or other reasons, to expend significant additional resources in order to help correct the problem.

We implement bug fixes and upgrades as part of our regular system maintenance, which may lead to system downtime. Even if we are able to implement the bug fixes and upgrades in a timely manner, any history of defects or inaccuracies in the data we collect for our customers, or the loss, damage or inadvertent release of confidential data could cause our reputation to be harmed, and customers may elect not to purchase or renew their agreements with us or we may incur increased insurance costs. The costs associated with any material defects or errors in our software or other performance problems may be substantial and could harm our operating results.

Because many of our customers use our applications to store and retrieve critical information, we may be subject to liability claims if our applications do not work properly. We cannot be certain that the limitations of liability set forth in our licenses and agreements would be enforceable or would otherwise protect us from liability for damages. A material liability claim against us, regardless of its merit or its outcome, could result in substantial costs, significantly harm our business reputation and divert management's attention from our operations.

Third-party claims that we are infringing the intellectual property rights of others, whether successful or not, could subject us to costly and time-consuming litigation or require us to purchase expensive licenses, and our business could be harmed.

The software industry is characterized by the existence of a large number of patents, copyrights, trademarks, trade secrets and other intellectual property rights. Companies in the software industry must often defend against litigation claims based on allegations of infringement or other violations of intellectual property rights. Third parties, including our competitors, may own patents or other intellectual property rights that cover aspects of our technology or business methods and may assert patent or other intellectual property rights within the industry. Moreover, in recent years, individuals and groups that are non-practicing entities, commonly referred to as "patent trolls," have purchased patents and other intellectual property assets for the purpose of making claims of infringement in order to extract settlements. From time to time, we may receive threatening letters, notices or "invitations to license," or may be the subject of claims that our learning platform or services and underlying technology infringe or violate the intellectual property rights of others. Responding to such claims, regardless of their merit, can be time consuming, costly to defend in litigation, divert management's attention and resources, damage our reputation and brand and cause us to incur significant expenses. Our technologies may not be able to withstand any third-party claims against their use. Claims of intellectual property infringement or violation might require us to stop using technology found to be in violation of a third-party's rights, redesign our application, which could require significant effort and expense, and cause delays of releases, enter into costly settlement or license agreements or pay costly damage awards, or face a temporary or permanent injunction prohibiting us from marketing or selling our learning platform. If we cannot or do not license the infringed technology on reasonable terms or at all, or substitute similar technology from another source, we could be forced to limit or stop selling our learning platform, we may not be able to meet our obligations to customers under our customer contracts, our revenue and operating results could be adversely impacted, and we may be unable to compete effectively. Additionally, our customers may not purchase our applications if they are concerned that such applications may infringe or violate third-party intellectual property rights. The occurrence of any of these events may harm our business.

In our subscription agreements with our customers, we generally agree to indemnify our customers against any losses or costs incurred in connection with claims by a third party alleging that the customer's use of our learning platform or services infringes the intellectual property rights of the third party. Our customers who are accused of intellectual property infringement may seek indemnification from us. If any claim is successful, or if we are required to indemnify or defend our customers from any of these or other claims, these matters could be disruptive to our business and management and result in additional legal expenses.

The success of our business depends in part on our ability to protect and enforce our intellectual property and proprietary rights.

Our success is dependent, in part, upon protecting our proprietary technology. We rely on a combination of patents, copyrights, trademarks, service marks, trade secret laws and contractual restrictions to establish and protect our intellectual property and proprietary rights in our applications and services. However, the steps we take to protect our intellectual property and proprietary rights may be inadequate. We will not be able to protect our intellectual property and proprietary rights if we are unable to enforce our rights or if we do not detect unauthorized use of our intellectual property and proprietary rights. Any of our trademarks or other intellectual property or proprietary rights may be challenged by others or invalidated through administrative process or litigation. Furthermore, legal standards relating to the validity, enforceability and scope of protection of intellectual property and proprietary rights are uncertain. Despite our precautions, it may be possible for unauthorized third parties to copy our technology and use information that we regard as proprietary to create applications and services that compete with ours. Some license provisions protecting against unauthorized use, copying, transfer and disclosure of our offerings may be unenforceable under the laws of certain jurisdictions and foreign countries. Our corporate name and the name of our platform and applications have not been trademarked in each market where we operate and plan to operate. If we do not secure registrations for our trademarks, we may encounter more difficulty in enforcing them against third parties. Effective copyright, trademark and trade secret protection may not be available in every country in which our platform and applications are available. To the extent we expand our international operations, our exposure to unauthorized copying and use of our technology and proprietary information may increase. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating, or violating, our technology and intellectual property and proprietary rights.

Although we enter into confidentiality and invention assignment agreements with our employees and consultants and enter into confidentiality agreements with the parties with whom we have strategic relationships and business alliances, no assurance can be given that these agreements will be effective in controlling access to and distribution of our applications and proprietary information or prevent reverse engineering. Further, these agreements may not prevent our competitors from independently developing technologies that are substantially equivalent or superior to our learning platform.

We may be required to spend significant resources to monitor and protect our intellectual property and proprietary rights. Litigation may be necessary in the future to enforce our intellectual property and proprietary rights and to protect our trade secrets. Such litigation could be costly, time consuming and distracting to management and could result in the impairment or loss of portions of our intellectual property and proprietary rights. Furthermore, our efforts to enforce our intellectual property and proprietary rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property and proprietary rights. We may not prevail in any lawsuits that we initiate. Any litigation, whether or not resolved in our favor, could subject us to substantial costs, divert resources and the attention of management and technical personnel from our business and adversely affect our business. Our inability to protect our proprietary technology against unauthorized copying or use, as well as any costly litigation, could delay further sales or the implementation of our learning platform, impair the functionality of our learning platform, delay introductions of new features or enhancements, result in our substituting inferior or more costly technologies into our learning platform, or injure our reputation.

Incorrect or improper use of our solutions or our failure to properly train customers on how to use our solutions could result in customer dissatisfaction and negatively affect our business.

Our solutions are complex and the proper use of such solutions requires training of the customer and end user. If our solutions are not used correctly or as intended, inadequate performance may result. Because our customers rely on our solutions, services and maintenance support to manage a wide range of operations, the incorrect or improper use of our solutions, our failure to properly train customers on how to efficiently and effectively use our solutions, or our failure to properly provide maintenance services to our customers may result in negative publicity or legal claims against us.

Risks Related to Laws and Regulations

We are subject to governmental laws, regulation and other legal obligations, particularly related to privacy, data protection and information security, and such laws, regulation and other legal obligations continue to evolve, and any actual or perceived failure to comply with such obligations could harm our business.

Privacy and information security are significant issues in the U.S. and the other jurisdictions where we offer our learning platform. The legislative and regulatory framework for privacy and security issues worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. The education technology community has been the subject of particular scrutiny. For instance, in 2019, a letter was circulated by certain members of the U.S. Senate to various educational technology companies, including us, reiterating its concerns about the amount of data being collected regarding students and the potential safety and security risks to children. Our handling of data is subject to a variety of laws and regulations, including laws and regulations enforced by various government agencies, such as the FTC and various federal, state, local and foreign agencies. We collect PII and other data from our employees, customers and users. We use this information to provide services to our customers and users and to operate, support, expand and improve our business. We may also share customers' or users' PII with third parties as allowed by applicable law and agreements, as authorized by the customer, or as described in our privacy policies.

The U.S. federal and various state and foreign governments have adopted or proposed limitations on the collection, distribution, use storage and other processing of PII. In the U.S., the FTC and many state attorneys general are applying federal and state consumer protection laws to impose standards on the online collection, use, dissemination, processing and security of data. Furthermore, many states have enacted laws that apply directly to the operators of online services that are intended for Higher Education and K-12 purposes or are proposing legislation to mandate privacy and data security obligations on the collection, use, disclosure, processing and security of PII generally. For example, the California Consumer Privacy Act of 2018 (the "CCPA"), which took effect on January 1, 2020, and the California Privacy Rights Act (the "CPRA"), which went into effect in January 2023, impose a number of additional privacy and security obligations on companies who collect, use, disclose or otherwise process PII of California residents. The law broadly defines PII, gives California residents expanded privacy rights, allows consumers to opt out of certain data sharing with third parties, and provides for civil penalties for violations, and includes a private right of action for data breaches, which may increase the likelihood and cost of data breach litigation. Similarly, the states of Connecticut, Colorado, Virginia and Utah have enacted comprehensive privacy laws that go into effect at different times in 2023. The effects of this legislation are potentially far-reaching and may require us to modify our data management practices and to incur substantial expense in an effort to comply.

Many foreign countries and governmental bodies, including Australia, Canada, the EU, and other jurisdictions, have laws and regulations concerning the collection, use, disclosure, processing and security of PII obtained from their residents or by businesses operating within their jurisdiction. These laws and regulations often are more restrictive than those in the U.S. laws and regulations in these jurisdictions may apply broadly to the collection, use, storage, disclosure, processing and security of data that identifies or may be used to identify or locate an individual and other personal information, such as names, email addresses and Internet Protocol addresses and other online identifiers. We publicly post our privacy policies and practices concerning our collection, use, disclosure and other processing of PII. Our publication of our privacy policy and other statements we publish that provide promises and assurances about privacy and security can subject us to potential state and federal action if they are found to be deceptive or misrepresentative of our practices.

In the EU, where companies must meet specified privacy and security standards, the General Data Protection Regulation (the "GDPR") introduced new and enhanced data protection requirements throughout the EU and significant penalties of up to the greater of 4% of worldwide turnover or €20 million for violations of data protection rules. The GDPR notably has extra-territorial reach and has a significant impact on 'data controllers' and 'data processors' either with an establishment in the EU, or which offer goods or services to EU data subjects or monitor EU data subjects' behavior within the EU. As GDPR enforcement evolves, we may find it necessary to establish systems to maintain EU-origin data in the European Economic Area (the "EEA"), or to amend agreements with our customers which may involve substantial expense and distraction from other aspects of our business. In addition, data protection authorities in each member state of the EU have the ability to interpret certain aspects of the GDPR, which has the potential to create inconsistencies on a country-by-country basis. Ongoing implementation of the GDPR could require us to change certain business practices and result in increased costs. Further, the EU's draft proposed Regulation on Privacy and Electronic Communications (the "ePrivacy Regulation"), which remains under debate, would alter rules on third-party cookies, web beacons and similar technologies, and significantly increase penalties for non-compliance. The ePrivacy Regulation is unlikely to come into effect before the end of 2023, and we cannot yet determine the impact such future laws, regulations, and standards may have on our business.

Following the U.K.'s departure from the EU, the EU GDPR's data protection obligations continue to apply in the U.K. in substantially unvaried form combining the GDPR and the U.K.'s Data Protection Act of 2018 (the "U.K. GDPR"). In June 2021, the European Commission published a decision finding that the U.K. ensures an adequate level of data protection, permitting PI to be transferred between the EU to the U.K. However, the U.K. adequacy decision will automatically expire in June 2025 unless the European Commission re-assesses and renews/extends that decision, and it remains under review by the European Commission during this interim period, resulting in uncertainty as to how U.K. data protection laws and regulations will develop in the near- and long-term. Divergence in application, interpretation or enforcement of the GDPR between the U.K. and the EU could lead to an increase in data protection compliance costs.

Additionally, the Court of Justice of the European Union (the "CJEU"), in its landmark judgment in Schrems II, invalidated the EU-U.S. Privacy Shield with immediate effect, but upheld the European Commission's standard contractual clauses ("SCCs") as a means for legitimizing the transfer of PII by U.S. companies doing business in the EU from the EEA to the U.S. While the use of SCCs was upheld, the CJEU held that compliance with the SCCs must be closely monitored by parties and the data exporter relying on them must perform a case-by-case assessment as to whether the laws of the country of importation of personal data provide adequate protection, as under EU data protection laws. The decision in Schrems II has impacted our current and planned business activities which involve transfers of PII outside of the EEA (both intra-group and to third parties) and requires ongoing monitoring of the latest legal and regulatory developments and as such, may involve compliance costs to address any changes required. We may experience hesitancy, reluctance, or refusal by European or multi-national customers to continue to use our services due to the potential risk exposure to such customers as a result of the uncertainty around the legality of cross-border data transfer methods on which we rely. Ongoing legal challenges to the SCCs may render either or both methods invalid or could result in further limitations on the ability to transfer data across borders. Additionally, certain countries have passed or are considering passing laws requiring local data residency, and two new SCCs with revised set of clauses were published June 4, 2021.

Although we endeavor to comply with those federal, state, and foreign laws and regulations, industry standards, contractual obligations and other legal obligations that apply to us, those laws, regulations, standards and obligations are evolving, particularly in our industry, and may be modified, interpreted and applied in an inconsistent manner from one jurisdiction to another, and may conflict with one another, other requirements or legal obligations, our practices or the features of our learning platform. Any failure or perceived failure by us to comply with federal, state or foreign laws or regulations, industry standards, contractual obligations or other legal obligations, or any actual or suspected security incident, whether or not resulting in unauthorized access to, or acquisition, release or transfer of PII or other data, may result in governmental enforcement actions and prosecutions, private litigation, fines and penalties or adverse publicity and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business. Any inability to adequately address privacy and security concerns, even if unfounded, or comply with applicable laws, regulations, policies, industry standards, contractual obligations, or other legal obligations could result in liability to us, damage our reputation, inhibit sales, and materially adversely affect our business.

We also expect that this will continue to be a point of focus for legislation and there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security in the U.S. and globally, and we cannot yet determine the impact such future laws, regulations and standards may have on our business. Future laws, regulations, standards and other obligations, and changes in the interpretation of existing laws, regulations, standards and other obligations could impair our or our customers' ability to collect, use, disclose or process information relating to consumers, which could decrease demand for our applications, increase our costs and impair our ability to maintain and grow our customer base and increase our revenue. If we fail to comply with federal, state and international data privacy laws and regulations our ability to successfully operate our business and pursue our business goals could be harmed.

We also may find it necessary or desirable to join industry or other self-regulatory bodies or other privacy- or data protection-related organizations that require compliance with their rules pertaining to privacy and data protection. We also may be bound by additional, more stringent contractual obligations relating to our collection, use, disclosure and processing of personal, financial and other data.

We are subject to contractual clauses that require us to comply with certain provisions of the Family Educational Rights and Privacy Act and we are subject to the Children's Online Privacy Protection Act, and if we fail to comply with these laws, our reputation and business could be harmed.

The Family Educational Rights and Privacy Act ("FERPA") generally prohibits educational institutions that receive federal funding from disclosing PII from a student's education records without the student's consent. Through our learning platform, our customers and users disclose to us certain information that may originate from or comprise a student education record, as the term is defined under FERPA. As an entity that provides services to institutions, we are often subject to contractual clauses that impose restrictions derived from FERPA on our ability to collect, process, transfer, disclose, and store student data. If we violate our obligations to any of our educational institution customers relating to the privacy of student records subject to FERPA, such a violation could constitute material breach of contract with one or more of our customers and could harm our reputation and business. Further, in the event that we disclose student information in a manner that results in a violation of FERPA by one of our educational customers, the U.S. Department of Education could require that customer to suspend our access to the customer's student information that is covered under FERPA for a period of at least five years.

We are also subject to the Children's Online Privacy Protection Act ("COPPA"), which applies to operators of commercial websites and online services directed to U.S. children under the age of 13 that collect PII from children, and to operators of general audience websites with actual knowledge that they are collecting information from U.S. children under the age of 13. Our learning platform is directed, in part, at children under the age of 13. Through our learning platform, we collect certain PII, including names and email addresses from children. COPPA is subject to interpretation by courts and other governmental authorities, including the FTC, and the FTC is authorized to promulgate, and has promulgated, revisions to regulations implementing provisions of COPPA, and provides non-binding interpretive guidance regarding COPPA that changes periodically with little or no public notice. Although we strive to ensure that our platform and applications are compliant with applicable COPPA provisions, these provisions may be modified, interpreted, or applied in new manners that we may be unable to anticipate or prepare for appropriately, and we may incur substantial costs or expenses in attempting to modify our systems, platform, applications, or other technology to address changes in COPPA or interpretations thereof. If we fail to accurately anticipate the application, interpretation or legislative expansion of COPPA we could be subject to governmental enforcement actions, litigation, fines and penalties or adverse publicity and we could be in breach of our customer contracts and our customers could lose trust in us, which could harm our reputation and business.

In addition to government regulation, privacy advocates and industry groups may propose self-regulatory standards, such as the Student Privacy Pledge, from time to time. These and other industry standards may legally or contractually apply to us, or we may elect to comply with such standards or to facilitate our customer's compliance with such standards. Following these privacy standards and adapting to future standards involves significant operational challenges. In addition, any inability or decision not to join these industry initiatives could damage our reputation, inhibit sales, slow our sales cycles and adversely affect our business.

Because the interpretation and application of many privacy and data protection laws along with contractually imposed industry standards are uncertain, it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our existing data management practices or the features of our learning platform and platform capabilities. If so, in addition to the possibility of fines, lawsuits and other claims and penalties, we could be required to fundamentally change our business activities and practices or modify our learning platform and platform capabilities, which could have an adverse effect on our business. Any inability to adequately address privacy and security concerns, even if unfounded, or comply with applicable privacy and data security laws, regulations and policies, could result in additional cost and liability to us, damage our reputation, inhibit sales, and adversely affect our business.

We could face liability, or our reputation might be harmed, as a result of the activities of our customers or users, the content in our platform or the data they store on our servers.

As a provider of cloud-based software, we may be subject to potential liability for the activities of our customers or users on or in connection with the data they store on our servers. Although our customer terms of use prohibit illegal use of our services by our customers and permit us to take down content or take other appropriate actions for illegal use, customers may nonetheless engage in prohibited activities or upload or store content with us in violation of applicable law or the customer's own policies, which could subject us to liability or harm our reputation.

Various U.S. federal statutes may apply to us with respect to various customer activities. The Digital Millennium Copyright Act of 1998 ("DMCA") provides recourse for owners of copyrighted material who believe that their rights under U.S. copyright law have been infringed on the internet. Under the DMCA, based on our current business activity as an internet service provider that does not own or control website content posted by our customers, we generally are not liable for infringing content posted by our customers or other third parties, provided that we follow the procedures for handling copyright infringement claims set forth in the DMCA. Generally, if we receive a proper notice from, or on behalf, of a copyright owner alleging infringement of copyrighted material located on websites we host, and we fail to expeditiously remove or disable access to the allegedly infringing material or otherwise fail to meet the requirements of the safe harbor provided by the DMCA, the copyright owner may seek to impose liability on us. Technical mistakes in complying with the detailed DMCA take-down procedures, or if we fail to otherwise comply with the other requirements of the safe harbor, could subject us to liability for copyright infringement.

Although statutes and case law in the U.S. have generally shielded us from liability for customer activities to date, court rulings in pending or future litigation may narrow the scope of protection afforded us under these laws. In addition, laws governing these activities are unsettled in many international jurisdictions, or may prove difficult or impossible for us to comply with in some international jurisdictions. Also, notwithstanding the exculpatory language of these bodies of law, we may become involved in complaints and lawsuits which, even if ultimately resolved in our favor, add cost to our doing business and may divert management's time and attention. Finally, other existing bodies of law, including the criminal laws of various states, may be deemed to apply or new statutes or regulations may be adopted in the future, any of which could expose us to further liability and increase our costs of doing business.

Additionally, our customers could use our learning platform to store or process PII, including sensitive PII, without our knowledge of such storage or processing. In the event that our systems experience a data security incident, or an individual or entity accesses information without, or in excess of, proper authorization, we could be subject to data security incident notification laws, as described elsewhere, which may require prompt remediation and notification to individuals. If we are unaware of the data and information stored on our systems, we may be unable to appropriately comply with all legal obligations, and we may be exposed to governmental enforcement or prosecution actions, private litigation, fines and penalties or adverse publicity and these incidents could cause our customers to lose trust in us, which could harm our reputation and business.

Changes in tax laws or regulations that are applied adversely to us or our customers could increase the costs of our learning platform and adversely impact our business.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time. Any new taxes could adversely affect our domestic and international business operations, and our business and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. For example, the TCJA, as modified by the CARES Act, enacted many significant changes to the U.S. tax laws. Future guidance from the U.S. Internal Revenue Service and other tax authorities with respect to the TCJA, the CARES Act, the Inflation Reduction Act (the "IRA") or other tax legislation may affect us, and certain aspects of any such tax legislation could be repealed or modified in future legislation. In addition, it is uncertain if and to what extent various states will conform to the TCJA, the CARES Act or any newly enacted federal tax legislation. Changes in corporate tax rates, the realization of net deferred tax assets relating to our operations, the taxation of foreign earnings, and the deductibility of expenses under the TCJA, the CARES Act or future reform legislation could have a material impact on the value of our deferred tax assets, could result in significant one-time charges, and could increase our future U.S. tax expense. These events could require us or our customers to pay additional tax amounts on a prospective or retroactive basis, as well as require us or our customers to pay fines or penalties and interest for past amounts deemed to be due. If we raise our prices to offset the costs of these changes, existing and potential future customers may elect not to purchase our learning platform in the future. Additionally, new, changed, modified or newly interpreted or applied tax laws could increase our customers' and our compliance, operating and other costs, as well as the costs of our learning platform. Any or all of these events could harm our business and operating results.

In addition, the public schools we contract with are financed with government funding from federal, state and local taxpayers. Our business may be adversely affected by changes in tax laws, statutes, rules, regulations, or ordinances or by diminished tax revenues which could lead to significant declines in public school funding. The results of federal, state and local elections can also result in shifts in education policy and the amount of funding available for various education programs. Any decreased funding for schools may harm our recurring and new business materially if our customers are not able to find and obtain alternative sources of funding.

We are subject to export controls and economic sanctions laws, and our customers and channel partners are subject to import controls that could subject us to liability if we are not in full compliance with applicable laws.

Certain of our solutions are subject to U.S. export controls and we are permitted to export such solutions to certain countries outside the U.S. only by first obtaining an export license from the U.S. government or by utilizing an existing export license exception. Obtaining the necessary export license for a particular export may be time-consuming and may result in the delay or loss of sales opportunities. Furthermore, U.S. export control laws and economic sanctions, including economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control, prohibit the sale or supply of our solutions and services to U.S. embargoed or sanctioned countries, regions, governments, persons and entities.

Although we take precautions to prevent our solutions from being provided in violation of U.S. export control and economic sanctions laws, our solutions may have been in the past, and could in the future be, provided inadvertently in violation of such laws. If we were to fail to comply with U.S. export law requirements,

U.S. customs regulations, U.S. economic sanctions or other applicable U.S. laws, we could be subject to substantial civil and criminal penalties, including fines, incarceration for responsible employees and managers and the possible loss of export or import privileges. U.S. export controls, sanctions and regulations apply to our channel partners as well as to us. Any failure by our channel partners to comply with such laws, regulations or sanctions could have negative consequences, including reputational harm, government investigations and penalties.

Also, various countries, in addition to the United States, regulate the import and export of certain encryption and other technology, including import and export licensing requirements, and have enacted laws that could limit our ability to distribute our products or could limit our end-customers' ability to implement our products in those countries. Changes in our solutions or changes in export and import regulations may create delays in the introduction of our solutions into international markets, prevent our customers with international operations from deploying our solutions globally or, in some cases, prevent the export or import of our solutions to certain countries, governments or persons altogether. In addition, any change in export or import regulations, economic sanctions or related legislation, shift in the enforcement or scope of existing regulations, or change in the countries, governments, persons or technologies targeted by such regulations, could result in decreased use of our solutions by, or in our decreased ability to export or sell our solutions to, existing or potential customers with international operations. Any decreased use of our solutions or limitation on our ability to export or sell our solutions would likely adversely affect our business, financial condition and operating results.

We are subject to anti-corruption, anti-bribery and similar laws, and non-compliance with such laws can subject us to criminal penalties or significant fines and harm our business and reputation.

We are subject to anti-corruption and anti-bribery and similar laws, such as the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, the U.K. Bribery Act 2010 and other anti-corruption, anti-bribery and anti-money laundering laws in countries in which we conduct activities. Anti-corruption and anti-bribery laws have been enforced aggressively in recent years and are interpreted broadly and prohibit companies and their employees and agents from promising, authorizing, making, offering, soliciting, or accepting, directly or indirectly, improper payments or other improper benefits to or from any person whether in the public or private sector. As we increase our international sales and business, our risks under these laws may increase. Noncompliance with these laws could subject us to investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, adverse media coverage and other consequences. Any investigations, actions or sanctions could adversely affect our business, results of operations and financial condition. These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions. While we have policies and procedures to address compliance with such laws, we cannot assure you that our third-party business partners or intermediaries, employees, representatives, contractors, and agents will not take actions in violation of our policies and applicable law, for which we may be ultimately held responsible.

Our failure to comply with a variety of complex procurement rules and regulations could damage our reputation and result on our being liable for penalties, including termination of our government contracts, disqualification from bidding on future government contracts, suspension or debarment from government contracting.

We must comply with laws and regulations relating to government contracts, which affect how we do business with our customers and may impose added costs on our business. Some significant laws and regulations that affect us include:

- federal, state and local laws and regulations (including the Federal Acquisition Regulation) regarding the formation, administration and performance of government contracts;
- the Civil False Claims Act (and similar state and local false claims acts), which provides for substantial civil penalties for violations, including for submission of a false or fraudulent claim to the U.S. government for payment or approval; and
- federal, state and local laws and regulations regarding procurement integrity including gratuity, bribery and anti-corruption requirements as well as limitations on political contributions and lobbying.

Any failure to comply with applicable laws and regulations could result in contract termination, damage to our reputation, price or fee reductions or suspension or debarment from contracting with the government, each of which could materially adversely affect our business, results of operations and financial condition.

In addition, federal, state and local government entities may revise existing contract rules and regulations or adopt new contract rules and regulations at any time and may also face restrictions or pressure regarding the type and amount of services that they may obtain from private contractors. Any of these changes could impair our ability to obtain new contracts or renew contracts under which we currently perform when those contracts are eligible for recompetition.

Litigation against us could damage our reputation and be costly and time-consuming to defend.

We are subject, from time to time, to legal proceedings and claims that arise in the ordinary course of business, such as claims brought by our customers in connection with commercial disputes or employment claims made by current or former employees, including as a result of actions taken by us in response to the COVID-19 pandemic. Litigation, regardless of merit, could result in reputational damage and substantial costs and may divert management's attention and resources, which might adversely impact our business, overall financial condition and results of 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 reducing our results of operations and leading analysts or potential investors to reduce their expectations of our performance, which could reduce the value of our common stock. While we currently are not aware of any material pending or threatened litigation against us, we can make no assurances the same will continue to be true in the future.

Risks Related to Being a Public Company

The requirements of being a public company may strain our resources and distract our management, which could make it difficult to manage our business.

As a recent public company, we incur legal, accounting and other expenses that we did not incur as a private company. We are now subject to the reporting requirements of the Exchange Act and the Sarbanes-Oxley Act, the listing requirements of NYSE and other applicable securities rules and regulations. Compliance with these rules and regulations has and will continue to increase our legal and financial compliance costs, make some activities more difficult, time-consuming or costly and increase demand on our systems and resources. The Exchange Act requires that we file annual, quarterly and current reports with respect to our business, financial condition, results of operations, cash flows and prospects. The Sarbanes-Oxley Act requires, among other things, that we establish and maintain effective internal controls and procedures for financial reporting. Furthermore, the need to continue establishing the corporate infrastructure demanded of a public company may divert our management's attention from implementing our growth strategy, which could prevent us from improving our business, financial condition, results of operations, cash flows and prospects. We have made, and will continue to make, changes to our internal controls and procedures for financial reporting and accounting systems to meet our reporting obligations as a public company. However, the measures we take may not be sufficient to satisfy our obligations as a public company. These additional obligations could have a material adverse effect on our business, financial condition, results of operations, cash flows and prospects.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of our management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and there could be a material adverse effect on our business, financial condition, results of operations, cash flows and prospects.

As a result of becoming a public company, we are obligated to develop and maintain proper and effective internal control over financial reporting in order to comply with Section 404 of the Sarbanes- Oxley Act. We may not complete our analysis of our internal control over financial reporting in a timely manner, or these internal controls may not be determined to be effective, which may adversely affect investor confidence in us and, as a result, the value of our common stock.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. 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 in accordance with GAAP. As a prior reporting company, the framework of our system and processing documentation is established; however, we continue to update as necessary to perform the evaluation needed to comply with Section 404 of the Sarbanes-Oxley Act. If, during the evaluation and testing process, we are unable to assert that our internal control over financial reporting is effective, we could lose investor confidence in the accuracy and completeness of our financial reports, which could cause the price of our common stock to decline, and we may be subject to investigation or sanctions by the SEC.

We are required, pursuant to Section 404 of the Sarbanes-Oxley Act, to annually furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. This assessment will need to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. We are also required to disclose changes made in our internal control and procedures on a quarterly basis. Our independent registered public accounting firm is also required to report on the effectiveness of our internal control over financial reporting pursuant to Section 404 of the Sarbanes-Oxley Act. It is possible that our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating.

Additionally, the existence of any material weakness or significant deficiency would require management to devote significant time and incur significant expense to remediate any such material weaknesses or significant deficiencies and management may not be able to remediate any such material weaknesses or significant deficiencies in a timely manner. The existence of any material weakness in our internal control over financial reporting could also result in errors in our financial statements that could require us to restate our financial statements, cause us to fail to meet our reporting obligations and cause stockholders to lose confidence in our reported financial information, all of which could materially and adversely affect our business and stock price.

Our management team has limited experience managing a public company.

Many members of our management team, including our Chief Executive Officer and Chief Financial Officer, have limited experience managing a publicly-traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage us as a public company that is subject to significant regulatory oversight and reporting obligations under the federal securities laws and the continuous scrutiny of securities analysts and investors. These new obligations and constituents require significant attention from our senior management and could divert their attention away from the day-to-day management of our business, which could adversely affect our business, results of operations and financial condition.

Risks Related to Our Indebtedness

Our existing indebtedness could adversely affect our business and growth prospects.

As of December 31, 2022 and December 31, 2021, we had total current and long-term indebtedness outstanding of approximately $496.3 million and $500.0 million, respectively, in term loans and unamortized debt issuance costs of $5.8 million and $6.7 million, respectively. Our indebtedness, or any additional indebtedness we may incur, could require us to divert funds identified for other purposes for debt service and impair our liquidity position. If we cannot generate sufficient cash flow from operations to service our debt, we may need to refinance our debt, dispose of assets or issue equity to obtain necessary funds. We do not know whether we would be able to take any of these actions on a timely basis, on terms satisfactory to us or at all.

Our indebtedness, the cash flow needed to satisfy our debt and the covenants contained in our credit agreement, dated as of October 29, 2021, with a syndicate of lenders and JPMorgan Chase Bank, N.A, as administrative agent (the “2021 Credit Agreement”), have important consequences, including:

- limiting funds otherwise available for financing our capital expenditures by requiring us to dedicate a portion of our cash flows from operations to the repayment of debt and the interest on this debt;
- limiting our ability to incur or prepay existing indebtedness, pay dividends or distributions, dispose of assets, engage in mergers and consolidations, make acquisitions or other investments and make changes in the nature of the business, among other things;
- making us more vulnerable to rising interest rates, as substantially all of our borrowings, including borrowings under the Senior Secured Credit Facilities, bear variable rates of interest; and

- making us more vulnerable in the event of a downturn in our business.

Our level of indebtedness may place us at a competitive disadvantage to our competitors that are not as highly leveraged. Fluctuations in interest rates can increase borrowing costs. Increases in interest rates may directly impact the amount of interest we are required to pay and reduce earnings accordingly. In addition, tax laws, including the disallowance or deferral of tax deductions for interest paid on outstanding indebtedness, could have an adverse effect on our liquidity and our business, financial condition, results of operations, cash flows and prospects. Further, our 2021 Credit Agreement contains customary affirmative and negative covenants and certain restrictions on operations that could impose operating and financial limitations and restrictions on us, including restrictions on our ability to enter into particular transactions and to engage in other actions that we may believe are advisable or necessary for our business.

Interest rates under the 2021 Credit Agreement are based partly on the London interbank offered rate ("LIBOR"). LIBOR is currently expected to be phased out by the middle of 2023. The U.S. Federal Reserve is publishing a Secured Overnight Funding Rate to serve as an alternative reference rate to LIBOR. There can be no assurance that the application of, or transition to, SOFR or any other alternative reference rate will not increase our interest expense or will not introduce operational risks in our accounting or financial reporting and other aspects of our business. Further, we may need to renegotiate our agreements or any other borrowings that utilize LIBOR as a factor in determining the interest rate to replace LIBOR with the new standard that is established.

We expect to use cash flow from operations to meet current and future financial obligations, including funding our operations, debt service requirements and capital expenditures. The ability to make these payments depends on our financial and operating performance, which is subject to prevailing economic, industry and competitive conditions and to certain financial, business, economic and other factors beyond our control.

Despite current indebtedness levels, we may incur substantially more indebtedness, which could further exacerbate the risks associated with our substantial indebtedness.

We may incur significant additional indebtedness in the future. We may also consider investments in joint ventures or acquisitions, which may increase our indebtedness. If new debt is added to our current indebtedness levels, the related risks that we face could intensify.

Variable rate indebtedness that we have incurred or may in the future incur will subject us to interest rate risk, which could cause our debt service obligations to increase significantly.

Substantially all of our borrowings, including borrowings under our Senior Secured Credit Facilities, bear variable rates of interest. An increase in prevailing interest rates would increase our debt service obligations, which would have a negative impact on our net income and cash flows, including cash available for servicing our indebtedness. As of December 31, 2022, these interest rates have not had a material effect on our financial condition and cash flows.

We may not be able to generate sufficient cash flow to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under such indebtedness, which may not be successful.

Our ability to make scheduled payments or to refinance outstanding debt obligations depends on our financial and operating performance, which will be affected by prevailing economic, industry and competitive conditions and by financial, business and other factors beyond our control. We may not be able to maintain a sufficient level of cash flow from operating activities to permit us to pay the principal, premium, if any, and interest on our indebtedness. Any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a reduction of our credit worthiness, which would also harm our ability to incur additional indebtedness.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay capital expenditures and acquisitions, sell assets, seek additional capital or seek to restructure or refinance our indebtedness. Any refinancing of our indebtedness could be at higher interest rates and may require us to comply with more onerous covenants. Refinancing may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such cash flows and resources, we could face substantial liquidity problems and might be required to sell material assets or operations to attempt to meet our debt service obligations. The financing documents governing our Senior Secured Credit Facilities include certain restrictions on our ability to conduct asset sales and/or use the proceeds from asset sales for certain purposes. We may not be able to consummate these asset sales to raise capital or sell assets at prices and on terms that we believe are fair and any proceeds that we do receive may not be adequate to meet any debt service obligations then due. If we cannot meet our debt service obligations, the holders of our indebtedness may accelerate such indebtedness and, to the extent such indebtedness is secured, foreclose on our assets. In such an event, we may not have sufficient assets to repay all of our indebtedness.

The terms of the financing documents governing our Senior Secured Credit Facilities restrict our current and future operations, particularly our ability to respond to changes or to take certain actions.

The financing documents governing our Senior Secured Credit Facilities contain a number of restrictive covenants that impose significant operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interests, including restrictions on our ability to:

- incur additional indebtedness;
- incur liens;
- merge, dissolve, liquidate, amalgamate, consolidate or sell all or substantially all of our assets;
- declare or pay certain dividends, payments or distribution or repurchase or redeem certain capital stock;
- permit our subsidiaries to enter into agreements restricting their ability to pay dividends, make loans, incur liens and sell assets; and
- make certain investments.

These restrictions could limit, potentially significantly, our operational flexibility and affect our ability to finance our future operations or capital needs or to execute our business strategy.

We may be unable to refinance our indebtedness.

Our Senior Secured Credit Facilities mature on October 29, 2028. In addition, we may need to refinance all or a portion of our indebtedness before maturity. Our ability to repay, refinance, replace or extend these facilities by their maturity dates will be dependent on, among other things, business conditions, our financial performance and the general condition of the financial markets. If a financial disruption were to occur at the time that we are required to repay indebtedness outstanding under these facilities, we could be forced to undertake alternate financings, including a sale of additional common stock, negotiate for an extension of the maturity of the applicable facility or sell assets and delay capital expenditures in order to generate proceeds that could be used to repay indebtedness. There can be no assurance that we will be able to obtain sufficient funds to enable us to repay or refinance our debt obligations on commercially reasonable terms, or at all.

Risks Related to Our Common Stock

Thoma Bravo controls us, and its interests may conflict with ours or yours in the future.

As of December 31, 2022, Thoma Bravo held approximately 85.4% of the voting power of our outstanding common stock, which means that, based on its percentage voting power, Thoma Bravo controls the vote of all matters submitted to a vote of our stockholders. This control enables Thoma Bravo to control the election of the members of our board of directors (the “Board”) and all other corporate decisions. Even when Thoma Bravo ceases to control a majority of the total voting power, for so long as Thoma Bravo continues to own a significant percentage of our common stock, Thoma Bravo will still be able to significantly influence the composition of our Board and the approval of actions requiring stockholder approval. Accordingly, for such period of time, Thoma Bravo will have significant influence with respect to our management, business plans and policies, including the appointment and removal of our officers, decisions on whether to raise future capital and amending our charter and bylaws, which govern the rights attached to our common stock. In particular, for so long as Thoma Bravo continues to own a significant percentage of our common stock, Thoma Bravo will be able to cause or prevent a change of control of us or a change in the composition of our Board and could preclude any unsolicited acquisition of us. The concentration of ownership could deprive you of an opportunity to receive a premium for your shares of common stock as part of a sale of us and ultimately might affect the market price of our common stock.

In addition, we have entered into a Director Nomination Agreement with Thoma Bravo that provides it the right to designate:(i) all of the nominees for election to our Board for so long as Thoma Bravo beneficially owns 40% or more of the total number of shares of our common stock beneficially owned by Thoma Bravo upon completion of our initial public offering (“IPO”), as adjusted for any reorganization, recapitalization, or such amount of shares, as adjusted (the “Original Amount”) (ii) a number of directors (rounded up to the nearest whole number) equal to 40% of the total directors for so long as Thoma Bravo beneficially owns at least 30% and less than 40% of the Original Amount; (iii) a number of directors (rounded up to the nearest whole number) equal to 30% of the total directors for so long as Thoma Bravo beneficially owns at least 20% and less than 30% of the Original Amount; (iv) a number of directors (rounded up to the nearest whole number) equal to 20% of the total directors for so long as Thoma Bravo beneficially owns at least 10% and less than 20% of the Original Amount; and (v) one director for so long as Thoma Bravo beneficially owns at least 5% of the Original Amount. The Director Nomination Agreement also provides that Thoma Bravo may assign such right to an affiliate. The Director Nomination Agreement prohibits us from increasing or decreasing the size of our Board without the prior written consent of Thoma Bravo.

Thoma Bravo and its affiliates engage in a broad spectrum of activities, including investments in our industry generally. In the ordinary course of their business activities, Thoma Bravo and its affiliates may engage in activities where their interests conflict with our interests or those of our other stockholders, such as investing in or advising businesses that directly or indirectly compete with certain portions of our business or are suppliers or customers of ours. Our certificate of incorporation provides that none of Thoma Bravo, any of its affiliates or any director who is not employed by us (including any non-employee director who serves as one of our officers in both his or her director and officer capacities) or its affiliates have any duty to refrain from engaging, directly or indirectly, in the same business activities or similar business activities or lines of business in which we operate. Thoma Bravo also may pursue acquisition opportunities that may be complementary to our business, and, as a result, those acquisition opportunities may not be available to us. In addition, Thoma Bravo may have an interest in pursuing acquisitions, divestitures and other transactions that, in their judgment, could enhance their investment, even though such transactions might involve risks to you or may not prove beneficial.

We are a "controlled company" within the meaning of the rules of NYSE and, as a result, we qualify for, and intend to rely on, exemptions from certain corporate governance requirements. You do not have the same protections as those afforded to stockholders of companies that are subject to such governance requirements.

Thoma Bravo controls a majority of the voting power of our outstanding common stock. As a result, we are a "controlled company" within the meaning of the corporate governance standards of NYSE. Under these rules, a company of which more than 50% of the voting power for the election of directors is held by an individual, group or another company is a "controlled company" and may elect not to comply with certain corporate governance requirements, including:

- the requirement that a majority of our Board consist of independent directors;
- the requirement that we have a nominating and corporate governance committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities;
- the requirement that we have a compensation committee that is composed entirely of independent directors with a written charter addressing the committee's purpose and responsibilities; and
- the requirement for an annual performance evaluation of the nominating and corporate governance and compensation committees.

We have, and intend to continue utilizing these exemptions. As a result, we do not, and may not in the future, have a majority of independent directors on our Board, our compensation and nominating and corporate governance committees do not, and may not in the future, consist entirely of independent directors and our compensation and nominating and corporate governance committees do not, and may not in the future, be subject to annual performance evaluations. Accordingly, you will not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance requirements of NYSE.

Provisions of our corporate governance documents could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our current management, even if beneficial to our stockholders.

Our certificate of incorporation and bylaws and the Delaware General Corporation Law (the "DGCL") contain provisions that could make it more difficult for a third party to acquire us, even if doing so might be beneficial to our stockholders. Among other things, these provisions:

- allow us to authorize the issuance of undesignated preferred stock, the terms of which may be established and the shares of which may be issued without stockholder approval, and which may include supermajority voting, special approval, dividend, or other rights or preferences superior to the rights of stockholders;
- provide for a classified board of directors with staggered three-year terms;
- provide that, at any time when Thoma Bravo controls, in the aggregate, less than 40% in voting power of our stock entitled to vote generally in the election of directors, directors may only be removed for cause, and only by the affirmative vote of holders of at least sixty-six and two-thirds percent (66⅔%) in voting power of all the then-outstanding shares of our stock entitled to vote thereon, voting together as a single class;
- prohibit stockholder action by written consent from and after the date on which Thoma Bravo controls, in the aggregate, less than 35% in voting power of our stock entitled to vote generally in the election of directors;

- provide that for as long as Thoma Bravo controls, in the aggregate, at least 50% in voting power of our stock entitled to vote generally in the election of directors, any amendment, alteration, rescission or repeal of our bylaws by our stockholders will require the affirmative vote of a majority in voting power of the outstanding shares of our capital stock and at any time when Thoma Bravo controls, in the aggregate, less than 50% in voting power of all outstanding shares of our stock entitled to vote generally in the election of directors, any amendment, alteration, rescission or repeal of our bylaws by our stockholders will require the affirmative vote of the holders of at least sixty-six and two-thirds percent (66⅔%) in voting power of all the then-outstanding shares of our stock entitled to vote thereon, voting together as a single class; and
- establish advance notice requirements for nominations for elections to our Board or for proposing matters that can be acted upon by stockholders at stockholder meetings; provided, however, at any time when Thoma Bravo controls, in the aggregate, at least 10% in voting power of our stock entitled to vote generally in the election of directors, such advance notice procedure will not apply to Thoma Bravo.

We have opted out of Section 203 of the DGCL, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any interested stockholder for a period of three years following the date on which the stockholder became an interested stockholder. However, our certificate of incorporation contains a provision that provides us with protections similar to Section 203, and prevents us from engaging in a business combination with a person (excluding Thoma Bravo and any of their direct or indirect transferees and any group as to which such persons are a party) who acquires at least 15% of our common stock for a period of three years from the date such person acquired such common stock, unless board or stockholder approval is obtained prior to the acquisition. These provisions could discourage, delay or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for you and other stockholders to elect directors of your choosing and cause us to take other corporate actions you desire, including actions that you may deem advantageous, or negatively affect the trading price of our common stock. In addition, because our Board is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team.

These and other provisions in our certificate of incorporation, bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our Board or initiate actions that are opposed by our then-current Board, including actions to delay or impede a merger, tender offer or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and limit opportunities for you to realize value in a corporate transaction.

Our certificate of incorporation designates the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation that may be initiated by our stockholders and the federal district courts of the U.S. as the exclusive forum for litigation arising under the Securities Act, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Pursuant to our certificate of incorporation, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for any claims in state court for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (3) any action asserting a claim against us arising pursuant to any provision of the DGCL, our certificate of incorporation or our bylaws or (4) any other action asserting a claim against us that is governed by the internal affairs doctrine; *provided* that for the avoidance of doubt, the forum selection provision that identifies the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation, including any "derivative action," will not apply to suits to enforce a duty or liability created by the Securities Act, the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Our certificate of incorporation also provides that, unless we consent in writing to the selection of an alternative forum, the federal district courts of the U.S. shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act. Our certificate of incorporation further provides that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the provisions of our certificate of incorporation described above. The forum selection provisions in our certificate of incorporation may have the effect of discouraging lawsuits against us or our directors and officers and may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us. If the enforceability of our forum selection provisions were to be challenged, we may incur additional costs associated with resolving such challenge. While we currently have no basis to expect any such challenge would be successful, if a court were to find our forum selection provisions to be inapplicable or unenforceable with respect to one or more of these specified types of actions or proceedings, we may incur additional costs associated with having to litigate in other jurisdictions, which could have an adverse effect on our business, financial condition, results of operations, cash flows and prospects and result in a diversion of the time and resources of our employees, management and Board.

An active, liquid trading market for our common stock may not be sustained, which may limit your ability to sell your shares.

Although we have listed our common stock on the NYSE under the trading symbol "INST," an active trading market for our shares may not be sustained. A public trading market having the desirable characteristics of depth, liquidity and orderliness depends upon the existence of willing buyers and sellers at any given time, such existence being dependent upon the individual decisions of buyers and sellers over which neither we nor any market maker has control. The failure of an active and liquid trading market to develop and continue would likely have a material adverse effect on the value of our common stock. The market price of our common stock may decline and you may not be able to sell your shares of common stock above the price you paid, or at all. An inactive market may also impair our ability to raise capital to continue to fund operations by issuing additional shares of our common stock or other equity or equity-linked securities and may impair our ability to acquire other companies or technologies by using any such securities as consideration.

Substantial blocks of our total outstanding shares may be sold into the market. If there are substantial sales of shares, or the perception of such sales, the price of our common stock could decline.

The price of our common stock could decline if there are substantial sales of shares of our common stock, particularly sales by our directors, executive officers and significant stockholders, if there is a large number of shares of our common stock available for sale, or if there is a perception that these sales could occur. As of December 31, 2022, there were 142,917,080 outstanding shares of common stock. All of the shares of common stock sold in our IPO are available for sale in the public market. In addition, we have also registered shares of common stock in connection with our equity compensation plans, these shares can be freely sold in the public market upon issuance. Shares held by directors, executive officers and other affiliates are subject to volume limitations under Rule 144 under the Securities Act and various vesting agreements.

In connection with our IPO, we entered into a registration rights agreement with Thoma Bravo which requires us to effect the registration of Thoma Bravo's shares in certain circumstances. If Thoma Bravo exercises its rights under this agreement to resell a significant amount of its shares of our common stock, we will not receive any proceeds from those offerings.

Because we have no current plans to pay regular cash dividends on our common stock for the foreseeable future, you may not receive any return on investment unless you sell your common stock for a price greater than that which you paid for it.

We do not anticipate paying any regular cash dividends on our common stock for the foreseeable future. Any decision to declare and pay dividends in the future will be made at the discretion of our Board and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that our Board may deem relevant. In addition, our ability to pay dividends is, and may be, limited by covenants of existing and any future outstanding indebtedness we or our subsidiaries incur, including under our 2021 Credit Agreement. Therefore, any return on investment in our common stock is solely dependent upon the appreciation of the price of our common stock on the open market, which may not occur.

Our quarterly operating results and other metrics may vary significantly and be unpredictable, which could cause the trading price of our stock to decline.

Our quarterly operating results are likely to fluctuate in the future. In addition, securities markets worldwide have experienced, and are likely to continue to experience, significant price and volume fluctuations, including as a result of slowing economy or recession, or periods of economic uncertainty. This market volatility, as well as general economic, market or political conditions, could subject the market price of our common stock to wide price fluctuations regardless of our operating performance. Our operating results and the trading price of our common stock may fluctuate in response to various factors, including:

- adverse macroeconomic conditions, including heightened inflation, increased interest rates, and an economic downturn that could affect IT spending;
- changes in spending on learning platforms by our current or prospective customers;
- pricing our applications effectively so that we are able to attract and retain customers without compromising our operating results;
- attracting new customers and increasing our customers' use of our applications;
- customer renewals and the amounts for which agreements are renewed;
- awareness of our brand;
- changes in the competitive dynamics of our market, including consolidation among competitors or customers and the introduction of new applications or application enhancements;
- changes to the commission plans, quotas and other compensation-related metrics for our sales representatives;
- the amount and timing of payment for operating expenses, particularly research and development, sales and marketing expenses and employee benefit expenses;
- our ability to manage our existing business and future growth, including increases in the number of customers on our platform and the introduction and adoption of our platform in new markets outside of the U.S.;
- unforeseen costs and expenses related to the expansion of our business, operations and infrastructure, including disruptions in our hosting network infrastructure and privacy and data security.
- insolvency or credit difficulties confronting our customers, affecting their ability to purchase or pay for our learning platform;
- litigation-related costs, settlements or adverse litigation judgments;
- our ability to maintain scalable internal systems for reporting, order processing, license fulfillment, solution delivery, purchasing, billing and general accounting, among other functions;
- significant security breaches of, technical difficulties with, or interruptions to, the delivery and use of our offerings
- foreign currency exchange rate fluctuations;
- general economic and political conditions in our domestic and international markets;
- costs related to the acquisition of businesses, talent, technologies or intellectual property by us, including potentially significant amortization costs and possible write-downs; and
- future accounting pronouncements or changes in our accounting policies.

Any one of the factors above or the cumulative effect of some of the factors referred to above may result in significant fluctuations in our financial and other operating results, including fluctuations in our key metrics. Fluctuations in our quarterly operating results could limit or prevent investors from readily selling their shares of common stock and may otherwise negatively affect the market price and liquidity of our shares of common stock. In addition, in the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management from our business, which could significantly harm our profitability and reputation.

If securities or industry analysts do not publish research or reports about our business, if they publish unfavorable research or reports, or adversely change their recommendations regarding our common stock or if our results of operations do not meet their expectations, our stock price and trading volume could decline.

The trading market of our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. We do not have any control over these analysts or the information contained in their reports. As a newly public company, we may be slow to attract research coverage. In the event we obtain securities or industry analyst coverage, if any of the analysts who cover us provide inaccurate or unfavorable research, issue an adverse opinion regarding our stock price or if our results of operations do not meet their expectations, our stock price could decline. Moreover, if one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline.

We may issue shares of preferred stock in the future, which could make it difficult for another company to acquire us or could otherwise adversely affect holders of our common stock, which could depress the price of our common stock.

Our certificate of incorporation authorizes us to issue one or more series of preferred stock. Our Board has the authority to determine the preferences, limitations and relative rights of the shares of preferred stock and to fix the number of shares constituting any series and the designation of such series, without any further vote or action by our stockholders. Our preferred stock could be issued with voting, liquidation, dividend and other rights superior to the rights of our common stock. The potential issuance of preferred stock may delay or prevent a change in control of us, discouraging bids for our common stock at a premium to the market price, and materially adversely affect the market price and the voting and other rights of the holders of our common stock.

General Risk Factors

Certain estimates of market opportunity and forecasts of market growth included in this Annual Report on Form 10-K may prove to be inaccurate.

This Annual Report on Form 10-K includes estimates of the addressable market for our learning platform. Market opportunity estimates and growth forecasts, whether obtained from third-party sources or developed internally, are subject to significant uncertainty and are based on assumptions and estimates that may prove to be inaccurate as a result of carious factors, including the economic uncertainty. The estimates and forecasts in this Annual Report on Form 10-K relating to the size and expected growth of our target market, market demand and adoption, capacity to address this demand and pricing may also prove to be inaccurate. In particular, our estimates regarding our current and projected market opportunity are difficult to predict. The addressable market we estimate may not materialize for many years, if ever, and even if the markets in which we compete meet the size estimates and growth forecasted herein, our business could fail to grow at similar rates, if at all.

Our business is subject to the risks of fire, floods and other natural catastrophic events, and to interruption by man-made problems such as power disruptions, computer viruses, data security breaches or terrorism.

A significant natural disaster, such as a fire or flood, occurring at our headquarters, at one of our other facilities, at any of our cloud hosting provider facilities, or where a business partner is located, as a result of climate change or otherwise, could adversely affect our business, results of operations and financial condition. Prolonged health concerns or political or governmental developments in countries in which we or our customers, partners and service providers operate could result in further economic, social or labor instability, slow our sales process, result in customers not purchasing or renewing our learning platform or failing to make payments, and could otherwise have a material adverse effect on our business and our results of operations and financial condition.

Further, if a natural disaster or man-made incident were to affect Internet service providers, this could adversely affect the ability of our customers to use our learning platform. Although we maintain incident management and disaster response plans, in the event of a major disruption caused by a natural disaster or man-made incident, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our development activities and lengthy interruptions in service, any of which could adversely affect our business, results of operations and financial condition.

Our failure to raise additional capital or generate cash flows necessary to expand our operations and invest in new technologies in the future could reduce our ability to compete successfully and harm our competitive position and results of operations.

We may need to raise additional funds, and we may not be able to obtain additional debt or equity financing on favorable terms or at all. If we raise additional equity financing, our security holders may experience significant dilution of their ownership interests. If we engage in additional debt financing, we may be required to accept terms that restrict our ability to incur additional indebtedness, force us to maintain specified liquidity or other ratios or restrict our ability to pay dividends or make acquisitions. If we need additional capital and cannot raise it on acceptable terms, or at all, we may not be able to, among other things:

- develop and enhance our solution offerings;
- continue to expand our organization;
- hire, train and retain employees;
- respond to competitive pressures or unanticipated working capital requirements; or
- pursue acquisition opportunities.

In addition, if we issue additional equity to raise capital, your interest in us will be diluted.

Increasing scrutiny and changing expectations from investors, lenders, customers, and other market participants with respect to our Environmental, Social and Governance ("ESG") policies and activities may impose additional costs on us or expose us to additional risks.

Companies across all industries and around the globe are facing increasing scrutiny relating to their ESG policies, initiatives and activities by investors, lenders, customers, and other market participants. Regulatory requirements related to ESG have been issued in the EE, its Member States and other countries, particularly with respect to climate change, emission reduction and environmental stewardship. In the U.S., amongst other regulatory efforts, in March 2021, the SEC announced the creation of a Climate and ESG Task Force in the Division of Enforcement and in March 2022, the SEC proposed rules that would require public companies to disclose certain climate-related information in periodic filings with the SEC. We expect regulatory requirements related to ESG matters to continue to expand globally and increase our costs of compliance. We risk damage to our brand and reputation, impacts to our ability to secure government contracts, or limited access to capital markets and loans if we fail to adapt to, or comply with, investor, lender, customer or other stakeholder expectations and standards and potential government regulation with respect to ESG matters, including in areas such as diversity and inclusion, environmental stewardship, support for local communities and corporate governance and transparency.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters are in Salt Lake City, Utah, where we lease multiple floors in a single building, totaling 153,196 square feet of office space under leases that expire in February 2025 (with a five year option to renew) and October 2027, which we use for research and development, sales, marketing and administrative purposes. We have additional office locations in the United States and in various international countries with leases that expire through 2028. These additional international locations include offices in London, England (our international headquarters), Sydney, Australia, Sao Paulo, Brazil, and Budapest, Hungary. We believe our facilities are adequate for our current needs.

Item 3. Legal Proceedings.

We are, and from time to time may be, party to litigation and subject to claims incident to the ordinary course of business. As our growth continues, we may become party to an increasing number of litigation matters and claims. The outcome of litigation and claims cannot be predicted with certainty, and the resolution of these matters could materially affect our future results of operations, cash flows or financial position. With the potential exception of the below matter (which we believe is without merit and which we intend to vigorously defend against), we are not presently party to any legal proceedings that in the opinion of management, if determined adversely to us, would individually or taken together have a material adverse effect on our business, operating results, financial condition or cash flows.

In February 2021, Oklahoma Law Enforcement Retirement System and Q. Wade Billings filed in the Delaware Court of Chancery a class action lawsuit against Instructure Holdings, LLC, certain Thoma Bravo entities and certain directors and officers of Instructure Holdings, LLC relating to the Take Private Transaction. The litigation is captioned Oklahoma Law Enforcement Retirement System v. Goldsmith et al., C.A. No. 2021-0092-KSJM. The complaint alleges that such directors and officers breached their fiduciary duties in connection with the Take Private Transaction, and that Instructure Holdings, LLC and Thoma Bravo aided and abetted such breaches. Plaintiffs seek damages of an unidentified amount, interest, and attorneys' and experts' fees and expenses.

On January 6, 2023, the Court dismissed the plaintiff's complaint in full.

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

Our common stock began trading on the New York Stock Exchange under the symbol "INST" on July 22, 2021.

Holders

As of February 13, 2023, there were approximately 96 holders of record of our common stock. The actual number of stockholders is 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.

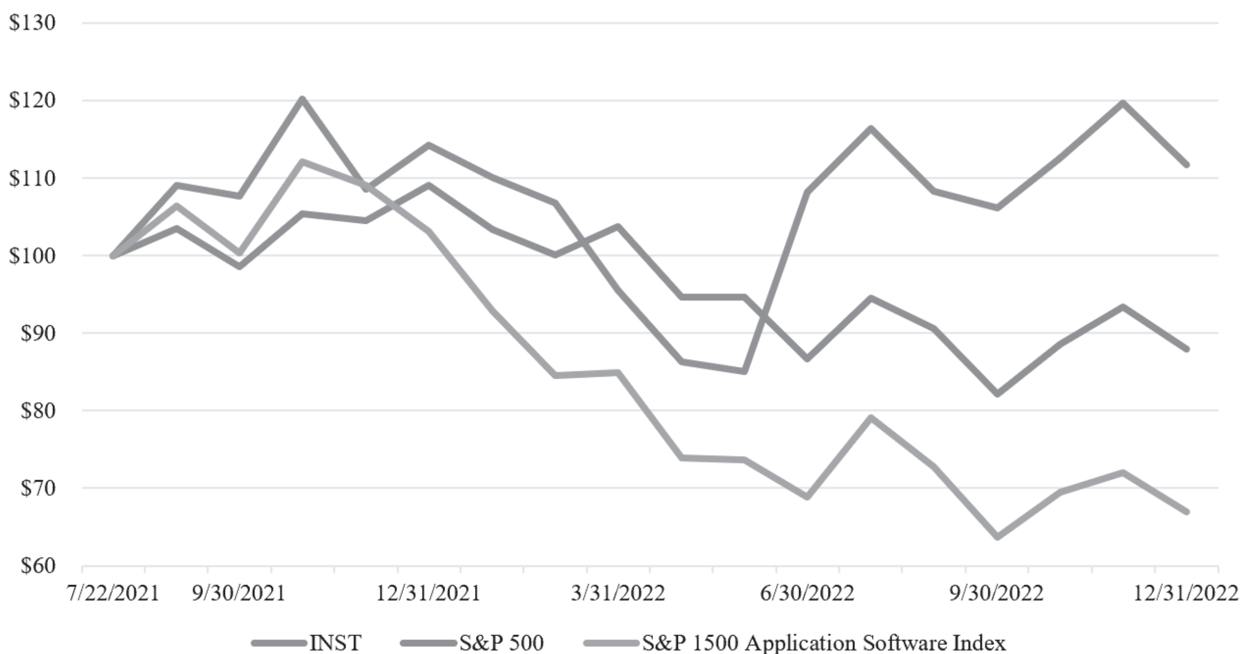
Dividend Policy

We have never declared or paid cash dividends on our capital stock. We intend to retain all available funds and future earnings, if any, to fund the development and expansion of our business and we do not anticipate paying any cash dividends in the foreseeable future. The terms of our credit facility also restrict our ability to pay dividends, and we may also enter into debt instruments in the future that will restrict our ability to declare or pay cash dividends on our common stock. Any future determination related to dividend policy will be made at the discretion of our board of directors and will be dependent on a number of factors, including our earnings, capital requirements and overall financial condition.

Performance Graph

This information under "Performance Graph" is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference in any filing of Instructure Holdings, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K and irrespective of any general incorporation language in those filings.

The following graph compares the performance of our common stock for the period indicated with the performance of the S&P 500 and the S&P 1500 Application Software Index. This graph assumes an investment of $100 at the close of market on July 22, 2021 in each of our common stock, the S&P 500 and the S&P 1500 Application Software Index, and assumes reinvestment of dividends, if any. The stock price performance shown on the graph below is not necessarily indicative of future stock price performance.



Sales of Unregistered Securities

None.

Issuer Purchase of Equity Securities

The number and average price of shares purchased in each fiscal month of the fourth quarter during the year ended December 31, 2022 are as follows:

	Total Number of Shares Purchased[(1)]	Average Price Paid Per Share[(1)]	Total Number of Shares Purchased as Part of Publicly Announced Program	Dollar Value of Shares that May Yet Be Purchased Under the Program
October 1, 2022 - October 31, 2022	—	$ —	—	$ —
November 1, 2022 - November 30, 2022	—	—	—	—
December 1, 2022 - December 31, 2022	74,873	25.89	—	—
Total	74,873	$ 25.89	—	$ —

(1) These shares represent repurchases pursuant to the Instructure Holdings, Inc. 2021 Omnibus Incentive Plan (the "2021 Plan"). Under the 2021 Plan, participants may surrender shares as payment of applicable tax withholding on the vesting of restricted stock awards. Participants in the 2021 Plan may also exercise stock options by surrendering shares of common stock that the participants already own as payment of the exercise price. Shares so surrendered by participants in the 2021 Plan are repurchased pursuant to the terms of the plan and applicable award agreement and not pursuant to publicly announced share repurchase programs.

Item 6. Reserved

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

You should read the following discussion and analysis together with the financial statements and the related notes to those statements included elsewhere in this Annual Report. This discussion contains forward-looking statements that involve risks and uncertainties. As a result of many factors, such as those set forth in the section of this Annual Report captioned "Risk Factors" and elsewhere in this report, our actual results may differ materially from those anticipated in these forward-looking statements.

Overview

From the inception of a teacher's lesson through a student's mastery of a concept, Instructure personalizes, simplifies, organizes, and automates the entire learning lifecycle through the power of technology. Our learning platform delivers the elements that leaders, teachers, and learners need – a next-generation LMS, robust assessments for learning, actionable analytics, and engaging, dynamic course content. Schools standardize on Instructure's solutions as the core of their learning platform because we bring together all of the tools that students, teachers, parents, and administrators need to create an accessible, engaging and modern learning environment. Our platform is cloud-native, built on open technologies, and scalable across thousands of institutions and tens of millions of users worldwide. We are the LMS market share leader in both Higher Education and paid K-12, with 7,436 global customers, representing Higher Education institutions and K-12 districts and schools in more than 100 countries. We are maniacally focused on our customers and enhancing the teaching and learning experience. As such, we continuously innovate to grow the functionality and capabilities of our platform, including through our earlier acquisitions to add online skills portfolio capabilities for Higher Education students and assessment and analytics capabilities. More recently, we acquired Eesysoft (rebranded to "Impact by Instructure" subsequent to acquisition, or "Impact") to allow educators to evaluate the impact education technologies have on student engagement and outcome, Kimono LLC (rebranded to "Elevate Data Sync" subsequent to acquisition) to secure data syncing capabilities across applications within a school environment, Concentric Sky, the maker of Badgr, (rebranded to "Canvas Credentials" subsequent to acquisition) to empower institutions to help learners navigate their personal learning journeys through stackable digital credentialing technology that allows them to carry proof of their academic achievements and skills development, and LearnPlatform to empower educational organizations to evaluate and manage ongoing usage and effectiveness of digital learning products. Our platform becomes the invaluable digital infrastructure behind our customers' instructional workflows.

Since our founding in 2008, we have expanded our platform from the core LMS to include a broad set of offerings targeting all aspects of teaching and learning. As our platform has grown, we have become more strategic to schools as they seek vendor consolidation, best of breed solutions, and integrated offerings to serve teachers and students.

Our Business Model

We generate revenue primarily from two main sources: (1) subscription and support revenue, which is comprised of software-as-a-service ("SaaS") fees from customers accessing our learning platform and from customers purchasing additional support beyond the standard support that is included in the basic SaaS fees; and (2) related professional services revenue, which is comprised of training, implementation services and other types of professional services.

Subscription revenue is derived from customers using our learning platform and is driven primarily by the number of customers, the number of users at each customer, and the price of our applications. Support revenue is derived from customers purchasing additional support beyond the standard support that is included in the basic SaaS fee. We sell annual and multi-year contracts, which typically vary in length between one and five years. Subscriptions and support are non-cancelable and are billed in advance on an annual basis. Subscription and support revenue represented 91% of total revenue for 2022.

Due to the nature of our multi-year subscription contracts, it is common that at any point in a contract term there can be amounts that we have not yet been contractually able to invoice, which along with our billed amounts are considered part of our remaining performance obligations ("RPO"). While we expect our RPO to fluctuate from period to period for a variety of reasons, we believe that it provides us high levels of revenue visibility.

We sell our applications and services primarily through a direct sales force. Our sales organization includes technical sales engineers who serve as experts in the technical aspects of our applications and customer implementations. Many of our sales efforts require us to respond to request for proposals, particularly in the Higher Education space and to a lesser extent in K-12. Our sales force targets statewide systems for Higher Education and K-12, as well individual colleges and universities and K-12 schools. As we grow internationally, we have added an indirect sales motion in order to penetrate certain international markets.

As of December 31, 2022, we had 7,436 customers representing Higher Education institutions and K-12 districts and schools in more than 100 countries, compared to 6,908 customers in more than 100 countries as of December 31, 2021. Our customers include State Universities of California, Florida, and Utah, all of the Ivy League universities, the entire Higher Education systems for Sweden and Norway, many of the largest K-12 systems in the U.S., and international K-12 systems. We continue to see growth opportunities in the K-12 market and have made incremental investments in the assessments space, which we expect to represent a meaningful portion of our business moving forward. We also continue to expand our international business, evidenced by our acquisition of Impact, which we believe will be an important factor in our continued growth. In 2022, revenue derived from outside of the U.S. increased 24% on a year-on-year basis, driven primarily by increases in demand across Western European, Asia-Pacific, and Latin American markets.

The majority of our academic customers implement Canvas widely within their institutions and across school districts, where applicable. We define a customer as an entity with an active subscription contract. In situations where there is a single contract that applies to an entity with multiple subsidiaries or divisions, universities, or schools, only the entity that has contracted for our platform is counted as a customer. For example, a contracting school district is counted as a single customer even though the school district encompasses multiple schools. In 2022, no single customer represented more than 10% of our revenue.

We have a history of attracting new customers and generally increasing their annual spend with us over time. In Higher Education, the depth of our solution and demonstrated scalability allow us to sell to a single institution or university and then deploy extensively across schools (i.e., medical, law, business, undergraduate), departments (i.e., economics, math, art), or entire state systems, and reach students beyond the walls of the classroom by extending into Continuing Education and online learning.

Take-Private Transaction

On March 24, 2020, we were acquired in an all-cash Take-Private Transaction by Thoma Bravo. The Take-Private Transaction was accounted for in accordance with ASC 805 (Business Combinations) and Instructure Parent, LP was determined to be the accounting acquirer. For accounting purposes, management has designated the Acquisition Date as March 31, 2020, as the operating results and change in financial position for the intervening period is not material. In the accompanying consolidated financial statements, references to Predecessor refer to the results of operations and cash flows of Instructure, Inc. prior to and including March 31, 2020. References to Successor refer to the consolidated financial position of Instructure Holdings, Inc. as of December 31, 2020, and all subsequent periods. The Successor period also includes the results of operations and cash flows of the business acquired in the Take-Private Transaction for the period from April 1, 2020 to December 31, 2020. The Predecessor and Successor consolidated financial information presented herein is not comparable primarily due to the application of acquisition accounting in the Successor financial statements as of March 31, 2020, as further described in Note 1—Description of Business and Summary of Significant Accounting Policies to the consolidated financial statements.

Initial Public Offering ("IPO")

On July 9, 2021, the Company effected a 126,239.815-for-1 stock split of its issued and outstanding shares of common stock and made comparable and equitable adjustments to its equity awards in accordance with the terms of the awards. The par value of the common stock was not adjusted as a result of the stock split. Accordingly, all share and per share amounts for all periods presented in the accompanying consolidated financial statements and notes thereto have been adjusted retrospectively, where applicable, to reflect this stock split. In connection with the stock split, on July 9, 2021, the Company's board of directors and stockholders approved the Certificate of Amendment to the Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock from 2,000 shares to 500,000,000 shares and to increase the number of authorized shares of preferred stock from zero shares to 50,000,000 shares. No preferred stock has been issued or outstanding.

On July 26, 2021, the Company completed its IPO of 12,500,000 shares of common stock at an offering price of $20.00 per share. The Company received net proceeds of $234.0 million after deducting underwriting discounts and commissions. On August 19, 2021, the underwriters partially exercised their over-allotment option and purchased an additional 1,675,000 shares of common stock at the offering price of $20.00 per share. The Company received additional net proceeds of $31.4 million after deducting underwriting discounts and commissions.

Impacts of Macroeconomic Conditions, COVID-19 Update, Trends

Adverse macroeconomic conditions, including but limited to heighted inflation, slower economic growth or recession, changes to fiscal and monetary policy, higher interest rates, currency fluctuations and challenges in supply chain could impact our business and customer spending. Certain of our customers may be negatively impacted by these events.

We believe that the COVID-19 pandemic accelerated adoption of our learning platform, which we expect will continue to generate additional opportunities for us in the future.

In 2022, we continued to experience high usage on our learning platform, even as North American K-12 students have returned to the classroom on a full-time basis. Since our customers have transitioned back to the classroom, the demand for our network and data storage capacity, inclusive of third-party cloud hosting, has come down from peak pandemic levels. However, our customers continue to embrace remote learning platforms and demand for our products remains significantly higher than pre-pandemic levels. These factors have generated a positive impact to our gross margin.

As of December 31, 2022, our pipeline of new contracts and cross-sell opportunities remained healthy and state budgets for digital transformation projects were robust with approximately 70% of the Elementary and Secondary School Emergency Relief ("ESSER") fund yet to be invested according to the Department of Education. However, record teacher retirements and strained capacity began slowing decision-making and impacted K-12 sales cycles. We expect this dynamic to be temporary, and to date, have not experienced material adverse impacts to our results of operations.

During 2022, the U.S. dollar strengthened against foreign currencies. The U.S dollar may continue to strengthen against foreign currencies as the U.S. Federal Reserve further raises the federal funds interest rate, which could further impact our reported expenses. Similarly, as a result of increased federal funds interest rates, the interest rate applicable to our Senior Term Loan increased from 3.25% as of December 31, 2021 to 6.12% as of December 31, 2022, impacting our cost of debt. These items have not had a material impact on our results of operations to date.

Key Factors Affecting Our Performance

Our historical financial performance has been, and we expect our financial performance in the future to be, driven by the following trends and our ability to:

Increase Adoption of Cloud-Based Software by Higher Education and K-12 Institutions

Our ability to increase market adoption of our platform is driven by the overall adoption of cloud applications and infrastructure by academic institutions. We believe that Higher Education and K-12 institutions are poised to accelerate the pace of cloud adoption to support near-term online educational needs, as a result of, and following the COVID-19 pandemic, and to withstand future challenges. Academic institutions that relied upon on-premises solutions to support remote operations faced significant delays at the height of the pandemic. In order to continue providing a high-quality education and support in-person, remote, and hybrid learning, institutions must make a fundamental shift to adopt cloud-based collaboration solutions. As the leader in the market for cloud-based learning technology, we believe the imperative for these institutions to adopt cloud infrastructure will increase demand for our platform and broaden our customer base.

Grow Our Customer Base

We believe there is significant opportunity to grow our customer base in Higher Education and K-12. The growth of our Higher Education customer base is primarily dependent on the replacement of legacy systems with our cloud-native platform in North America and our continued expansion efforts internationally. The growth of our K-12 customer base is primarily dependent on our ability to surround currently implemented free solutions with our learning platform and, in connection therewith, monetize demand for our broad capabilities. We intend to expand our customer base by continuing to make targeted and prudent investments in sales and marketing and customer support.

Cross-sell into our Existing Customer Base

Most of our customers initially engage with us using our Canvas LMS solution, and then we are generally able to cross-sell our other solutions as these customers become aware of the benefits of our broad capabilities, including learning, assessments, analytics, student success, program management, digital courseware, and global online learning. Our future revenue growth is dependent upon our ability to expand our customers' use of our learning platform. Our ability to increase sales to existing customers depends on a number of factors, including customer satisfaction, competition, pricing, economic conditions, and spending by customers.

Key Business Metrics

In addition to our GAAP financial information, we review a number of operating and financial metrics, including the following key metrics, to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans, and make strategic decisions.

Number of Customers

We evaluate the number of customers who use our products to measure and monitor the growth of our business and the success of our sales and marketing activities. We believe that the growth of our customer base is indicative of our revenue growth potential. We define a customer as an entity with an active subscription contract. In situations where there is a single contract that applies to an entity with multiple subsidiaries or divisions, universities or schools, only the entity that has contracted for our platform is counted as a customer. For example, a contracting school district is counted as a single customer even though the school district encompasses multiple schools. We had 6,095, 6,908, and 7,436 customers contracted to use our platform as of December 31, 2020, 2021, and 2022, respectively. The increase in customers from December 31, 2020 to December 31, 2021 was primarily driven by the continued effects of COVID-19 pandemic and the accelerated need for continued digital transformation in education and targeted sales and marketing efforts in new and existing markets. The increase in customers from December 31, 2021 to December 31, 2022 was primarily driven by the continued digital transformation in education and targeted sales and marketing efforts in new and existing markets.

Net Revenue Retention Rate; Gross Revenue Retention Rate

Our net revenue retention rate calculation begins with a customer cohort base as of a given month in the immediately preceding year and compares the ARR for that same cohort group in that given month for the current year. We calculate our net revenue retention rate by dividing the ARR obtained from a particular customer cohort in a given month by the ARR from that same customer cohort from the same month in the immediately preceding year. If a customer has any ARR in a given month, such customer is included in a "customer cohort." This calculation contemplates all changes to ARR for the designated customer cohort, which includes customer terminations and non-renewals, customer consolidations, changes in quantities of users, changes in pricing, additional applications purchased or applications no longer used. We calculate the net revenue retention for our entire customer base at a given point in time. We believe our net revenue retention rate is an important metric to measure the long-term value of customer agreements and our ability to retain our customers. Our net revenue retention rate was 117%, 109% and 106% as of December 31, 2020, 2021 and 2022, respectively.

We calculate gross revenue retention rate by subtracting downgrades and cancellations over a 12-month period from ARR at the beginning of the corresponding 12-month period for a particular customer cohort and dividing the result by the ARR from the beginning of the same 12-month period. Our gross revenue retention rate was 96%, 95% and 94% at December 31, 2020, 2021 and 2022, respectively.

The most significant positive drivers of changes in our net revenue retention rate each year have historically been our ability to up-sell or cross-sell new solutions or additional licenses to our existing customer base and secure multi-year contracts containing periodic pricing term increases.

Remaining Performance Obligations ("RPO")

We monitor RPO as a key metric to help us evaluate the health of our business. RPO represents the amount of our contracted future revenue that has not yet been recognized, including both deferred revenue and non-cancelable contracted amounts that will be invoiced and recognized as revenue in future periods. RPO is not necessarily indicative of future revenue growth because it does not account for the timing of customers' consumption or their consumption of more than their contracted capacity. Moreover, RPO is influenced by several factors, including the timing of renewals, the timing of purchases of additional capacity, average contract terms, and seasonality. Due to these factors, it is important to review RPO in conjunction with revenue and other financial metrics disclosed elsewhere in this Annual Report.

RPO was $569.0 million, $698.0 million and $760.1 million as of December 31, 2020, 2021 and 2022, respectively. We may experience variations in our RPO from period to period, but RPO has generally increased over the long-term as a result of contracts with new customers and increasing the value of contracts with existing customers. These increases are partially offset by revenue recognized on existing contracts during a particular period.

Key Components of Results of Operations

Revenue

We generate revenue primarily from two main sources: (1) subscription and support revenue, which is comprised of SaaS fees from customers accessing our learning platform and from customers purchasing additional support beyond the standard support that is included in the basic SaaS fees; and (2) related professional services revenue, which is comprised of training, implementation services and other types of professional services.

Subscription revenue is derived from customers using our learning platform and is driven primarily by the number of customers, the number of users at each customer, the price of our applications and renewals. Support revenue is derived from customers purchasing additional support beyond the standard support that is included in the basic SaaS fee. Our contracts typically vary in length between one and five years. Subscriptions and support are non-cancelable and are billed in advance on an annual basis. All subscription and support fees billed are initially recorded in deferred revenue and recognized ratably over the subscription term.

Professional services and other revenue are derived primarily from implementation, training, and other consulting fees. Implementation services includes training and consulting services that generally take anywhere from 30 to 90 days to complete depending on customer-side complexity and timelines. It includes regularly scheduled and highly-structured activities to ensure customers progress toward better utilizing our applications. Most of these interactions take place over the phone and through the use of web meeting technology. Because we have determined the implementation services are distinct, they are recognized over time as the services are rendered, using an efforts-expended input method. Implementation services also include nonrefundable upfront setup fees, which are allocated to the remaining performance obligations.

We include training with every implementation and offer additional training for a fee. The training offered is focused on creating confidence among users so they can be successful with our applications. Most training is performed remotely using web meeting technology. Because we have determined that trainings are distinct, we record training revenue upon the delivery of the training. Training is recognized ratably in the same manner as subscription and support revenue described above.

In addition to our implementation and training offerings, we provide consulting services for custom application development, integrations, content services and change management consulting. These services are architected to boost customer adoption of our applications and to drive usage of features and capabilities that are unique to our company. We have determined that these services are distinct. Professional services revenue is typically recognized over time as the services are rendered, using an efforts-expended input method.

Cost of Revenue

Cost of subscription and support revenue consists primarily of the costs of our cloud hosting provider and other third-party service providers, employee-related costs including payroll, benefits and stock-based compensation expense for our operations and customer support teams, amortization of capitalized software development costs and acquired technology, and allocated overhead costs, which we define as rent, facilities and costs related to IT. Our acquired technology is amortized over the estimated useful life, which is five years.

Cost of professional services and other revenue consists primarily of personnel costs of our professional services organization, including salaries, benefits, travel, bonuses and stock-based compensation, as well as allocated overhead costs.

Operating Expenses

Sales and Marketing. Sales and marketing expenses consist primarily of personnel costs of our sales and marketing employees, including sales commissions and incentives, benefits and stock-based compensation expense, marketing programs, including lead generation, costs of our annual InstructureCon user conference, acquisition-related amortization expenses and allocated overhead costs. We defer and amortize on a straight-line basis sales commission costs related to acquiring new contracts over a period of benefit that we have determined to be generally four years. Customer relationships represent the estimated fair value of the acquired customer bases and are amortized over the estimated useful life of seven years. The trade names acquired are amortized over the estimated useful lives ranging from one to ten years.

Research and Development. Research and development expenses consist primarily of personnel costs of our development team, including payroll, benefits and stock-based compensation expense and allocated overhead costs. We capitalize certain software development costs that are attributable to developing new applications, features and adding incremental functionality to our platform. We amortize these costs to subscription and support cost of revenue in the consolidated statements of operations and comprehensive loss over the estimated life of the new application or incremental functionality, which is generally three years.

General and Administrative. General and administrative expenses consist of personnel costs and related expenses for executive, finance, legal, human resources, recruiting, employee-related information technology, administrative personnel, including payroll, benefits and stock-based compensation expense; professional fees for external legal, accounting and other consulting services; and allocated overhead costs.

Other Income (Expense), net

Other income (expense), net consists primarily of interest income, interest expense, and the impact of foreign currency transaction gains and losses. Interest expense is related to fees incurred to have access to our credit facilities. As we have expanded our international operations, our exposure to fluctuations in foreign currencies has increased.

Income Tax Benefit (Expense)

We are subject to income taxes in the United States and foreign jurisdictions in which we do business. These foreign jurisdictions have statutory tax rates different from those in the United States. Accordingly, our effective tax rates will vary depending on the relative proportion of foreign to U.S. income and changes in tax laws. The tax benefit at December 31, 2022 consists of decreases in U.S. Federal and state deferred tax liabilities due to current year pretax book loss, domestic valuation allowances recorded, and the benefit related to foreign tax rate changes.

Results of Operations

The following tables set forth our results of operations for the periods presented and as a percentage of our total revenue for those periods.

	Successor			Predecessor
(dollars in thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Revenue:				
Subscription and support	$ 430,661	$ 367,781	$ 209,148	$ 65,968
Professional services and other	44,533	37,580	21,525	5,421
Total revenue	475,194	405,361	230,673	71,389
Cost of revenue:				
Subscription and support(1)(2)(3)	146,546	148,923	108,603	19,699
Professional services and other(1)(3)	25,748	20,942	15,547	4,699
Total cost of revenue	172,294	169,865	124,150	24,398
Gross profit	302,900	235,496	106,523	46,991
Operating expenses:				
Sales and marketing(1)(2)(3)	181,744	162,544	125,650	27,010
Research and development(1)(3)	77,189	63,771	51,066	19,273
General and administrative(1)(3)	60,447	54,911	62,572	17,295
Impairment on held-for-sale goodwill(3)	—	—	29,612	—
Impairment on disposal group(3)	—	1,218	10,166	—
Total operating expenses	319,380	282,444	279,066	63,578
Loss from operations	(16,480)	(46,948)	(172,543)	(16,587)
Other income (expense):				
Interest income	1,679	29	49	313
Interest expense	(24,595)	(50,360)	(50,921)	(8)
Other income (expense), net(3)	(2,978)	(2,695)	1,510	(5,738)
Loss on extinguishment of debt	—	(22,424)	—	—
Total other income (expense), net	(25,894)	(75,450)	(49,362)	(5,433)
Loss before income tax benefit (expense)	(42,374)	(122,398)	(221,905)	(22,020)
Income tax benefit (expense)	8,132	33,719	43,924	(183)
Net loss	$ (34,242)	$ (88,679)	$ (177,981)	$ (22,203)

(1) Includes stock-based compensation as follows:

	Successor			Predecessor
(dollars in thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Cost of revenue:				
Subscription and support	$ 1,348	$ 899	$ 1,020	$ 301
Professional services and other	1,742	959	687	285
Sales and marketing	11,050	6,936	7,580	1,977
Research and development	11,467	6,943	9,903	1,874
General and administrative	14,172	10,048	30,972	2,672
Total stock-based compensation	$ 39,779	$ 25,785	$ 50,162	$ 7,109

(2) Includes amortization of acquisition-related intangibles as follows:

(dollars in thousands)	Successor Year Ended December 31, 2022	Successor Year Ended December 31, 2021	Successor Period from April 1 to December 31, 2020	Predecessor Period from January 1 to March 31, 2020
Cost of revenue:				
Subscription and support	$ 63,386	$ 62,060	$ 44,167	$ 1,293
Sales and marketing	73,324	71,934	51,143	1,293
Total amortization of acquisition-related intangibles	$ 136,710	$ 133,994	$ 95,310	$ 2,586

(3) Includes transaction costs, sponsor costs, impairment charges, other non-recurring costs, and effects of foreign currency transaction gains and losses costs as follows:

(dollars in thousands)	Successor Year Ended December 31, 2022	Successor Year Ended December 31, 2021	Successor Period from April 1 to December 31, 2020	Predecessor Period from January 1 to March 31, 2020
Cost of revenue:				
Subscription and support	$ 168	$ 2,132	$ 2,235	$ —
Professional services and other	127	913	902	66
Sales and marketing	2,007	2,671	7,395	556
Research and development	3,954	4,041	4,760	1,273
General and administrative	6,749	10,589	11,889	6,465
Impairment on held-for-sale goodwill	—	—	29,612	—
Impairment on disposal group	—	1,218	10,166	—
Other income (expense), net	(2,514)	(1,916)	1,510	(5,757)
Total costs for transaction, sponsor, impairment, other non-recurring, and foreign currency gains and losses	$ 15,519	$ 23,480	$ 65,449	$ 14,117

(as a percentage of total revenue)	Successor Year Ended December 31, 2022	Successor Year Ended December 31, 2021	Successor Period from April 1 to December 31, 2020	Predecessor Period from January 1 to March 31, 2020
Revenue:				
Subscription and support	91%	91%	91%	92%
Professional services and other	9	9	9	8
Total revenue	100	100	100	100
Cost of revenue:				
Subscription and support	31	37	47	27
Professional services and other	5	5	7	7
Total cost of revenue	36	42	54	34
Gross profit	64	58	46	66
Operating expenses:				
Sales and marketing	38	40	55	38
Research and development	16	16	22	27
General and administrative	13	14	27	24
Impairment on held-for-sale goodwill	—	—	13	—
Impairment on disposal group	—	—	4	—
Total operating expenses	67	70	121	89
Loss from operations	(3)	(12)	(75)	(23)
Other income (expense):				
Interest income	—	—	—	—
Interest expense	(5)	(12)	(22)	—
Other income (expense), net	(1)	(1)	1	(8)
Loss on extinguishment of debt	—	(6)	—	—
Total other income, net	(6)	(19)	(21)	(8)
Loss before income tax benefit (expense)	(9)	(31)	(96)	(31)
Income tax benefit (expense)	2	8	19	—
Net loss	(7)%	(23)%	(77)%	(31)%

Year Ended December 31, 2022 Compared to the Year Ended December 31, 2021

Revenue

	Successor Year ended December 31, 2022	Successor Year ended December 31, 2021	Change Amount	Change %
	(dollars in thousands)			
Subscription and support	$ 430,661	$ 367,781	$ 62,880	17%
Professional services and other	$ 44,533	$ 37,580	6,953	19
Total revenue	$ 475,194	$ 405,361	$ 69,833	17%

Subscription and support revenue increased $62.9 million for the year ended December 31, 2022. The increase in revenue is due to expanded use of our solutions, including among new and existing customers. For the year ended December 31, 2022, revenue from new customers increased by $39.0 million and revenue from existing customers increased by $23.9 million. International markets contributed 21% of the total revenue for the year ended December 31, 2022, an increase of $19.1 million. Use of our solutions expanded as a result of the need for continued digital transformation in education and targeted sales and marketing efforts in new and existing markets.

Professional services and other revenue increased $7.0 million for the year ended December 31, 2022. The increase is due to the expanded use of our solutions as discussed above.

Cost of Revenue and Gross Margin

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
Cost of revenue:				
Subscription and support	$ 146,546	$ 148,923	$ (2,377)	(2)%
Professional services and other	25,748	20,942	4,806	23
Total cost of revenue	$ 172,294	$ 169,865	$ 2,429	1%
Gross margin percentage				
Subscription and support revenue	66%	60%		
Professional services and other	42	44		
Total gross margin	64	58		

Total cost of revenue increased $2.4 million for the year ended December 31, 2022. Total cost of revenue consists of employee-related costs, web hosting and third-party software license costs, amortization of developed technology and third-party contractor costs.

Subscription and support cost of revenue decreased $2.4 million for the year ended December 31, 2022 due to a decrease of $1.9 million related to exiting leased property, which occurred in the first quarter of 2021, and decreases in rent and related expenses of $0.2 million. Web hosting expenses and software license expenses decreased $2.6 million, systems and hardware costs decreased $1.3 million, and third-party consultants and contractors decreased $0.5 million. These decreases were offset by an increase in amortization of acquisition-related intangibles of $2.0 million, an increase in salaries, wages, and related benefits of $2.0 million, and an increase in other employee-related expenses, including travel, of $0.2 million.

Professional services and other cost of revenue increased $4.8 million for the year ended December 31, 2022 due to an increase in salaries, wages, and related benefits of $3.9 million, an increase in systems and hardware costs of $0.5 million, an increase in other employee-related expenses, including travel, of $0.4 million, an increase in third-party consultants and contractors of $0.5 million, an increase in software expenses of $0.2 million, and other insignificant increases of $0.1 million. These increases were offset by a decrease of $0.8 million related to exiting leased property, which occurred in the first quarter of 2021.

Operating Expenses

Sales and Marketing

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
Sales and marketing	$ 181,744	$ 162,544	$ 19,200	12%

Sales and marketing expenses increased $19.2 million for the year ended December 31, 2022 due to an increase in salaries, wages, and related benefits of $7.9 million, commissions of $4.5 million, and stock-based compensation expense of $4.2 million. Additional increases included an increase in marketing expenses such as trade shows and partnerships of $1.0 million, other employee-related expenses, including travel, of $1.9 million, an increase in third-party software license costs of $0.5 million, an increase in third-party consultants and contractors of $0.1 million, an increase in acquisition-related intangibles of $1.4 million, and other insignificant increases of $0.2 million. These increases were offset by a decrease of $2.0 million related to exiting leased property, which occurred in the first quarter of 2021, and a decrease in systems and hardware expenses of $0.5 million.

Research and Development

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
Research and development	$ 77,189	$ 63,771	$ 13,418	21%

Research and development expenses increased $13.4 million for the year ended December 31, 2022 due to an increase in salaries, wages, related benefits of $2.8 million, stock-based compensation of $4.5 million, an increase in third-party consultants and contractors of $4.8 million, an increase in systems and hardware costs of $1.6 million, an increase in other employee-related expenses, including travel, of $0.6 million, an increase in third-party software license costs of $0.2 million, and an increase in office building rent of $0.2 million. These increases were offset by a decrease of $1.4 million related to exiting leased property, which occurred in the first quarter of 2021.

General and Administrative

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
General and administrative	$ 60,447	$ 54,911	$ 5,536	10%

General and administrative expenses increased $5.5 million for the year ended December 31, 2022 due to an increase in salaries, wages, and related benefits of $2.5 million, and an increase in stock-based compensation of $4.0 million, which increases were offset by a decrease in bonuses of $1.7 million. General and administrative expenses also increased as a result of an increase in insurance expenses of $1.6 million, an increase in franchise and property taxes of $0.8 million, an increase in bad debt expense of $0.7 million, an increase of $0.5 million in systems and hardware costs, and increases in other employee-related expenses, including travel, of $0.3 million. These increases were offset by a decrease of $0.7 million related to exiting leased property, which occurred in the first quarter of 2021, and decreases in third-party consultants and contractors of $2.6 million.

Impairment on Disposal Group

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
Impairment on disposal group	$ —	$ 1,218	$ (1,218)	(100)%

Impairment on disposal group decreased $1.2 million for the year ended December 31, 2022. The decrease is due to our decision to market and sell getBridge, LLC (“Bridge”), the Company’s corporate learning platform and wholly-owned subsidiary.

Other Expense, net

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
Other expense, net	$ (25,894)	$ (75,450)	$ 49,556	(66)%

Other expense, net decreased $49.6 million for the year ended December 31, 2022. The decrease in expense is due to a loss on extinguishment of debt of $22.4 million which occurred in the 2021, decreased interest expense of $25.8 million due to reduced interest rates on our Term Loan and Senior Term Loan, as well as the overall reduction in principal following our IPO and Refinancing, and an increase $1.7 million of interest income, offset by an increase in expense of $0.3 million related to the disposal of fixed assets.

Income Tax Benefit

	Successor Year ended December 31,		Change	
	2022	2021	Amount	%
	(dollars in thousands)			
Income tax benefit	$ 8,132	$ 33,719	$ (25,587)	(76)%

Income tax benefit decreased $25.6 million for the year ended December 31, 2022. Income tax benefit consists of current and deferred taxes for U.S. and foreign income taxes. The decrease in the income tax benefit was due to the 2022 reduction in pretax book loss, domestic valuation allowance recorded, and changes in foreign tax rates.

Year Ended December 31, 2021 Compared to the Successor 2020 Period and Predecessor 2020 Period

A discussion regarding our financial condition and results of operations for the years ended December 31, 2021 and 2020 can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 23, 2022.

Liquidity and Capital Resources

As of December 31, 2022 and December 31, 2021, our principal sources of liquidity were cash, cash equivalents and restricted cash totaling $190.3 million and $169.2 million, respectively, which was held for working capital purposes, as well as the available balance of our Senior Secured Credit Facilities and Credit Facilities, respectively (each as defined below). As of December 31, 2022 and December 31, 2021, our cash equivalents were comprised of money market funds. We expect our operating cash flows to improve as we increase our operational efficiency and experience economies of scale.

We have historically financed our operations through cash received from operations, and in 2021, our IPO and the Refinancing (as defined below). We believe our existing cash and cash equivalents, our Senior Secured Credit Facilities and cash provided by sales of our solutions and services will be sufficient to meet our working capital, capital expenditure and cash needs for the next 12 months and beyond. Our future capital requirements will depend on many factors including our growth rate, the timing and extent of spending to support development efforts, the expansion of sales and marketing activities, the introduction of new and enhanced products and services offerings, and the continuing market acceptance of our products. In the future, we may enter into arrangements to acquire or invest in complementary businesses, services and technologies.

Our material cash requirements from known contractual and other obligations primarily consists of our Senior Term Loan and operating facility lease obligations, including certain letters of credit. Expected timing of these payments are as follows:

(in thousands)	Total	Next 12 months	Beyond 12 months
Senior Term Loan - principal	$ 496,250	$ 5,000	$ 491,250
Senior Term Loan – interest (1)	179,965	35,910	144,055
Operating facility lease obligations (2)	27,546	8,826	18,720
Total	$ 703,761	$ 49,736	$ 654,025

(1) Interest payments that relate to the Senior Term Loan are calculated and estimated for the periods presented based on the expected principal balance for each period and the effective interest rate at December 31, 2022 of 6.12%, given that our debt is at floating interest rates. Excluded from these payments is the amortization of debt issuance costs related to our indebtedness.

(2) As of December 31, 2022 and December 31, 2021, we had a total of $4.3 million and $4.2 million, respectively, of letters of credit outstanding that were issued for purposes of securing certain of the Company's obligations under facility leases and other contractual arrangements.

We may be required to seek additional equity or debt financing. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we are unable to raise additional capital or generate cash flows necessary to expand our operations and invest in new technologies, this could reduce our ability to compete successfully and harm our results of operations.

A portion of our customers pay in advance for subscriptions, a portion of which is recorded as deferred revenue. Deferred revenue consists of the unearned portion of billed fees for our subscriptions, which is later recognized as revenue in accordance with our revenue recognition policy. As of December 31, 2022, we had deferred revenue of $289.4 million, of which $275.6 million was recorded as a current liability and is expected to be recorded to revenue in the next 12 months, provided all other revenue recognition criteria have been met. As of December 31, 2021, we had deferred revenue of $255.7 million, of which $240.9 million was recorded as a current liability.

The following table shows our cash flows for the year ended December 31, 2022, year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period:

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
(in thousands)				
Net cash provided by (used in) operating activities	$ 140,271	$ 105,143	$ 36,884	$ (57,058)
Net cash provided by (used in) investing activities	(115,291)	15,228	(2,026,790)	14,871
Net cash provided by (used in) financing activities	(1,714)	(102,171)	2,082,156	(346)

Our cash flows are subject to seasonal fluctuations. A significant portion of our contracts have terms that coincide with our academic customers' typical fiscal year-end of June 30. Historical experience has shown an increase in new and renewed contracts as well as anniversary billings, all of which immediately precede the beginning of our customers' typical fiscal year-end. We typically invoice SaaS fees annually upfront with credit terms of net 30 or 60 days. In turn, our cash flows from operations are affected by this seasonality and are typically reflected in higher cash flow, accounts receivable and deferred revenue balances for the second and third quarter of each year.

Credit Facility

On March 24, 2020, we entered into a credit agreement with a syndicate of lenders and Golub Capital Markets LLC, as administrative agent and collateral agent, and Golub Capital Markets LLC and Owl Rock Capital Advisors LLC, as joint bookrunners and joint lead arrangers (the "Credit Agreement"). The Credit Agreement provided for a senior secured term loan facility (the "Initial Term Loan") in an original aggregate principal amount of $775.0 million, which was supplemented by an incremental term loan pursuant to the First Incremental Amendment and Waiver to Credit Agreement, dated as of December 22, 2020, in a principal amount of $70.0 million (the "Incremental Term Loan" and, together with the Initial Term Loan, the "Term Loan"). The maturity date for the Term Loan was March 24, 2026, with the remaining principal due in full on the maturity date. The Credit Agreement also provided for a senior secured revolving credit facility in an aggregate principal amount of $50.0 million (the "Revolving Credit Facility" and, together with the Term Loan, the "Credit Facilities"). The Revolving Credit Facility included a $10.0 million sublimit for the issuance of letters of credit.

The Credit Agreement required us to repay the principal of the Term Loan in equal quarterly repayments equal to 0.25% of the aggregate original principal amount of the Term Loan, reduced as a result of the application of prepayments. In connection with the Company's IPO, the Company made a principal prepayment in August 2021 of $224.3 million on its outstanding Term Loan. In connection with the underwriters' exercise of their over-allotment option in August 2021, the Company made an additional principal prepayment in August 2021 of $30.8 million on its outstanding Term Loan. The Company also incurred a 1.5% prepayment premium in conjunction with each principal prepayment.

The Company incurred fees with respect to the Revolving Credit Facility, including a commitment fee of 0.50% per annum of unused commitments under the Revolving Credit Facility.

On October 29, 2021, we entered into a credit agreement (the "2021 Credit Agreement") with JPMorgan Chase Bank, N.A. ("JPMorgan"), as administrative agent, governing our senior secured credit facilities (the "Senior Secured Credit Facilities"), consisting of a $500.0 million senior secured term loan facility (the "Senior Term Loan") and a $125.0 million senior secured revolving credit facility (the "Senior Revolver"). The proceeds from the Senior Secured Credit Facilities were used, in addition to cash on hand, (1) to refinance, in full, all existing indebtedness under the Credit Agreement (the "Refinancing"), (2) to pay certain fees and expenses incurred in connection with the entry into the 2021 Credit Agreement and the Refinancing, and (3) to finance working capital needs of the Company and its subsidiaries for general corporate purposes.

All of the Company's obligations under the Senior Secured Credit Facilities are guaranteed by the subsidiary guarantors named therein (the "Subsidiary Guarantors"). The Senior Revolver includes a $10.0 million sublimit for the issuance of letters of credit. Any issuance of letters of credit will reduce the amount available under the Senior Revolver. As of December 31, 2022, we had no outstanding borrowings under our Senior Revolver.

The Senior Term Loan has a seven-year maturity and the Senior Revolver has a five-year maturity. We are required to repay the Senior Term Loan portion of the Senior Secured Credit Facilities in quarterly principal installments of 0.25% of the aggregate original principal amount of the Senior Term Loan at closing, with the balance payable at maturity. Borrowings under the Senior Secured Credit Facilities bear interest, at the Company's option, at: (i) Base Rate equal to the greater of (a) the Federal Funds Rate plus 1/2 of 1.00%, (b) the rate of interest in effect for such day as publicly announced from time to time by the administrative agent as its "prime rate," (c) a Eurocurrency Rate for such date plus 1.00% and (d) 1.00%; or (ii) the Eurocurrency Rate (provided that the Eurocurrency Rate applicable to the Senior Term Loan shall not be less than 0.50% per annum). The Applicable Rate for the Senior Term Loan with respect to Eurocurrency Rate Loans is 2.75% per annum and 1.75% per annum for Base Rate Loans. The Applicable Rate for the Senior Revolver with respect to Eurocurrency Rate Loans, SONIA Loans, and Alternative Currency Term Rate Loans ranges from 2.00% to 2.5% subject to the Company's Consolidated First Lien Net Leverage Ratio, while the Applicable Rate for Base Rate Loans ranges from 1.00% to 1.50% subject to the Company's Consolidated First Lien Net Leverage Ratio. We are also required to pay an unused commitment fee to the lenders under the Senior Revolver at the Applicable Commitment Fee of the average daily unutilized commitments. The Applicable Commitment Fee ranges from 0.40% to 0.50% subject to the Company's Consolidated First Lien Never Leverage Ratio.

As of December 31, 2022, we had outstanding borrowings of $496.3 million on the Senior Term Loan, no outstanding borrowings under our Senior Revolver and $4.3 million outstanding under letters of credit.

Operating Activities

Net cash provided by operating activities consists primarily of net loss adjusted for certain non-cash items, including stock-based compensation, depreciation and amortization and other non-cash charges, net.

Net cash provided by operating activities during 2022 was $140.3 million, which primarily reflected our net loss of $34.2 million, offset by non-cash expenses that included $33.6 million of stock-based compensation, $141.2 million of depreciation and amortization, $1.2 million of amortization of deferred financing costs, and $3.7 million of other non-cash items. These amounts were offset by a decrease to deferred income taxes of $10.2 million. Working capital sources of cash included a net increase of $5.8 million in deferred revenue and accounts receivable primarily resulting from the seasonality of our business where a significant number of customer agreements occur in the second and third quarter of each year, a $5.9 million increase in prepaid expenses and other assets, and $4.9 million in right-of-use assets. These sources were partially offset by a decrease in accounts payable and accrued liabilities of $2.2 million, a decrease in deferred commissions of $0.6 million, a decrease in lease liabilities of $6.8 million, and a decrease in other liabilities of $1.8 million.

Net cash provided by operating activities during 2021 was $105.1 million, which primarily reflected our net loss of $88.7 million, offset by non-cash expenses that included $18.1 million of stock-based compensation, $137.7 million of depreciation and amortization, $22.4 million of loss on extinguishment of debt, $2.4 million of amortization of deferred financing costs, $1.2 million of impairment on disposal group, and $1.7 million of other non-cash items. These amounts were offset by a decrease to deferred income taxes of $36.5 million. Working capital sources of cash included a net increase of $44.2 million in deferred revenue and accounts receivable primarily resulting from the seasonality of our business where a significant number of customer agreements occur in the second and third quarter of each year, a $8.0 million increase in accounts payable and accrued liabilities, a $2.1 million increase in prepaid expenses and other assets, and $8.7 million in right-of-use assets. These sources were partially offset by a decrease in deferred commissions of $8.4 million, a decrease in lease liabilities of $6.4 million, and a decrease in other liabilities of $1.6 million.

Investing Activities

Our investing activities have consisted primarily of business acquisitions, purchases and maturities of marketable securities, property and equipment purchases for computer-related equipment and capitalization of software development costs. Capitalized software development costs are related to new applications or improvements to our existing software platform that expand the functionality for our customers.

Net cash used in investing activities during 2022 was $115.3 million, consisting of our acquisitions of Canvas Credentials and LearnPlatform of $19.5 million and $89.5 million, respectively, and purchases of property and equipment of $6.3 million.

Net cash provided by investing activities during 2021 was $15.2 million, consisting of $46.0 million due to the sale of Bridge, which was offset by our acquisitions of Impact and Elevate Data Sync of $16.9 million and $9.7 million, respectively, and purchases of property and equipment of $4.3 million.

Financing Activities

Our financing activities have consisted of borrowings of long-term debt, capital contributions received from stockholders, repurchasing shares for tax withholdings on vesting of restricted stock, proceeds from issuance of our common stock, and selling our common stock from our IPO.

Net cash used in financing activities during 2022 was $1.7 million, which consisted of $5.3 million of shares repurchased for tax withholdings on vesting of restricted stock, $3.8 million of principal payments made on our Credit Facilities, offset by $7.3 million of proceeds from issuance of common stock from employee equity plans.

Net cash used in financing activities during 2021 was $102.2 million, which consisted of $839.2 million of principal payments made on our Credit Facilities, $11.9 million of prepayment premiums paid in connection with our principal debt payments, $1.6 million of shares repurchased for tax withholdings on vesting of restricted stock, and distributions to stockholders of $0.9 million. These cash outflows were offset by $492.2 million in total borrowings related to the Senior Secured Credit Facilities net of debt discount and issuance costs, as well as $259.3 million of IPO proceeds, net of offering costs paid of $6.1 million.

Year Ended December 31, 2021 Compared to the Successor 2020 Period and Predecessor 2020 Period

A discussion regarding our net cash provided by and used in operating activities, investing activities and financing activities for the years ended December 31, 2021 and 2020 can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K filed with the Securities and Exchange Commission on February 23, 2022.

Indemnification Agreements

In the ordinary course of business, we enter into agreements of varying scope and terms pursuant to which we agree to indemnify customers, including, but not limited to, losses arising out of the breach of such agreements, services to be provided by us or from intellectual property infringement claims made by third parties. In addition, we have entered into indemnification agreements with our directors and certain officers and employees that require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. No demands have been made upon us to provide indemnification under such agreements and there are no claims that we are aware of that could have a material effect on our consolidated balance sheets, consolidated statements of operations and comprehensive loss, or consolidated statements of cash flows.

Critical Accounting Estimates

Our management's discussion and analysis of financial condition and results of operations is based on our consolidated financial statements which have been prepared in accordance with GAAP. In preparing our financial statements, we make estimates, assumptions and judgments that can have a significant impact on our reported revenue, results of operations and net income or loss, as well as on the value of certain assets and liabilities on our balance sheet during and as of the reporting periods. These estimates, assumptions and judgments are necessary because future events and their effects on our results and the value of our assets cannot be determined with certainty and are made based on our historical experience and on other assumptions that we believe to be reasonable under the circumstances. These estimates may change as new events occur or additional information is obtained, and we may periodically be faced with uncertainties, the outcomes of which are not within our control and may not be known for a prolonged period of time. Because the use of estimates is inherent in the financial reporting process, actual results could differ from those estimates.

While our significant accounting policies are more fully described in Note 1—Description of Business and Summary of Significant Accounting Policies, we believe the following critical accounting estimates, assumptions and judgments have the most significant impact on our consolidated financial statements are described below.

Revenue Recognition

We generate revenue primarily from two main sources: (1) subscription and support revenue, which is comprised of SaaS fees from customers accessing our learning, assessment and talent management systems and from customers purchasing additional support beyond the standard support that is included in the basic SaaS fees; and (2) related professional services revenue, which is comprised of training, implementation services and other types of professional services. Revenue is recognized when control of these services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those services.

We determined revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer
- Identification of the performance obligations in the contract
- Determination of the transaction price

- Allocation of the transaction price to the performance obligations in the contract
- Recognition of revenue when, or as, we satisfy a performance obligation

We recognize revenue for subscription contracts on a ratable basis over the contract term based on the number of calendar days in each period, beginning on the date that our service is made available to the customer. Unearned revenue results from revenue amounts billed to customers in advance or cash received from customers in advance of the satisfaction of performance obligations. Determining the transaction price often involves judgments and estimates that can have a significant impact on the timing and amount of revenue reported. At times, the Company may adjust billing under a contract based on the addition of services or other circumstances, which are accounted for as variable consideration. The Company estimates these amounts based on historical experience and reduces revenue recognized.

Subscription and support revenue is derived from fees from customers to access our learning, assessment and talent management systems and support beyond the standard support that is included with all subscriptions. Subscription and support revenue is generally recognized on a ratable basis over the contract term.

Our professional services are typically considered distinct from the related subscription services as the promise to transfer the subscription can be fulfilled independently from the promise to deliver the professional services (i.e., customer receives standalone functionality from the subscription and the customer obtains the intended benefit of the subscription without the professional services). Professional services revenue is typically recognized over time as the services are rendered, using an efforts-expended (labor hours) input method.

Many of our contracts with customers contain multiple performance obligations. We account for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price ("SSP") basis. We determine the standalone selling prices based on our overall pricing objectives by reviewing our significant pricing practices, including discounting practices, geographical locations, the size and volume of our transactions, the customer type, price lists, our pricing strategy, and historical standalone sales. Standalone selling price is analyzed on a periodic basis to identify if we have experienced significant changes in our selling prices.

Identifying the performance obligations, allocation of the transaction price, and the period over which revenue is recognized requires judgment and the use of estimates by management. Any changes to our estimates could materially impact our revenue recognition.

Deferred Commissions

Deferred commissions are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be generally four years. We determined the period of benefit by taking into consideration our customer contracts, our technology and other factors. Amortization of deferred commissions is included in sales and marketing expenses in the accompanying consolidated statements of operations and comprehensive loss.

Stock-Based Compensation

Successor

Prior to our IPO, we determined the grant date fair value for all unit-based awards granted to employees and nonemployees by using an option-pricing model. Because we were not a publicly traded company prior to our IPO, estimating grant date fair value required us to make assumptions, including the value of our equity, expected time to liquidity, and expected volatility. Stock-based compensation costs for granted units were recognized as expense over the requisite service period, which was generally the vesting period for awards, on a straight-line basis for awards with only a service condition. For granted units subject to performance conditions, the Company recorded expense when the performance condition became probable. Forfeitures were accounted for as they occurred.

We use the Black-Scholes option pricing model to determine the fair value of purchase rights issued to employees under our 2021 Employee Stock Purchase Plan ("2021 ESPP"). The Black-Scholes option pricing model is affected by the unit price and a number of assumptions, including the award's expected life, risk-free interest rate, the expected volatility of the underlying stock and expected dividends. Any change to the stock-based compensation assumptions could have a material impact on our consolidated financial statements.

These assumptions are estimated as follows:

- *Fair Value of Our Common Stock.* We rely on the closing price of our common stock as reported by the New York Stock Exchange on the date of grant to determine the fair value of our common stock.
- *Risk-Free Interest Rate.* We base the risk-free interest rate used in the Black-Scholes option pricing model on the implied yield available on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options.
- *Expected Term.* For the 2021 ESPP, we used an expected term of 0.6 years for the first offering period and used an expected term of 0.5 years for subsequent offering periods.
- *Volatility.* For the first offering period, we estimated the price volatility factor based on the historical volatilities of our comparable companies as we did not have a sufficient trading history for our common stock. To determine our comparable companies, we considered public enterprise cloud-based application providers and selected those that were similar to us in size, stage of life cycle, and financial leverage. Beginning with the second offering period we began using the trading history of our own common stock to determine expected volatility.
- *Expected Dividend Yield.* We have not paid and do not expect to pay dividends for the foreseeable future.

Predecessor

For the Predecessor 2020 Period, we accounted for all stock options and awards granted to employees and nonemployees using a fair value method. Stock-based compensation was recognized as an expense and measured at the fair value of the award. The measurement date for employee awards was generally the date of the grant. Stock-based compensation costs were recognized as expense over the requisite service period, which was generally the vesting period for awards, on a straight-line basis for awards with only a service condition. Forfeitures were accounted for as they occurred.

During the Predecessor 2020 Period, we used the Black-Scholes option pricing model to determine the fair value of stock options issued to our employees, as well as purchase rights issued to employees under our 2015 Employee Stock Purchase Plan ("2015 ESPP"). The Black-Scholes option pricing model is affected by the unit price and a number of assumptions, including the award's expected life, risk-free interest rate, the expected volatility of the underlying stock and expected dividends.

These assumptions were estimated as follows:

- *Fair Value of Our Common Stock.* We relied on the closing price of our common stock as reported by the New York Stock Exchange on the date of grant to determine the fair value of our common stock.
- *Risk-Free Interest Rate.* We based the risk-free interest rate used in the Black-Scholes option pricing model on the implied yield available on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options.
- *Expected Term.* We estimated the expected term for stock options using the simplified method due to the lack of historical exercise activity for our Company. The simplified method calculated the expected term as the mid-point between the vesting date and the contractual expiration date of the award. For the 2015 ESPP, we used an expected term of 0.5 years to match the offering period.

- *Volatility.* For the first offering period, we estimated the price volatility factor based on the historical volatilities of our comparable companies as we did not have a sufficient trading history for our common stock. To determine our comparable companies, we considered public enterprise cloud-based application providers and select those that are similar to us in size, stage of life cycle, and financial leverage. We applied this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of our own common stock share price became available in connection with our initial IPO (as defined herein). For the remaining offering periods of the 2015 ESPP, we used the trading history of our own common stock to determine expected volatility.
- *Expected Dividend Yield.* We did not pay and did not expect to pay dividends for the foreseeable future.

Business Combinations

We estimate the fair value of assets acquired and liabilities assumed in a business combination. Goodwill as of the acquisition date is measured as the excess of consideration transferred over the net of the acquisition date fair values of the assets acquired and the liabilities assumed. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Significant estimates in valuing certain intangible assets include, but are not limited to, future expected cash flows from acquired customer bases, acquired technology and acquired trade names, useful lives, royalty rates, and discount rates.

The estimates are inherently uncertain and subject to refinement during the measurement period for an acquisition, which may last up to one year from the acquisition date. During the measurement period, we may record adjustments to the fair value of tangible and intangible assets acquired and liabilities assumed, with a corresponding offset to goodwill. After the conclusion of the measurement period or the final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to earnings. Historically, there have been no significant changes in our estimates or assumptions.

Goodwill, Acquisition Intangibles and Other Long-Lived Assets - Impairment Assessment

Goodwill represents the excess of consideration transferred over the net of the acquisition date fair values of the assets acquired and the liabilities assumed. We assess goodwill for impairment for our reporting unit on an annual basis during our fourth fiscal quarter using an October 1 measurement date unless circumstances require a more frequent measurement.

When evaluating goodwill for impairment, we may first perform an assessment qualitatively whether it is more likely than not that our reporting unit's carrying amount exceeds its fair value, referred to as a “step zero” approach. If, based on the review of the qualitative factors, we determine it is not more likely than not that the fair value of our reporting unit is less than its carrying value, we would bypass the two-step impairment test. Events and circumstances we consider in performing the “step zero” qualitative assessment include significant underperformance relative to historical or projected future operating results, significant changes in our use of acquired assets or the strategy for our overall business, significant negative industry or economic trends, and significant declines in our stock price for a sustained period. If we conclude that it is more likely than not that our reporting unit's fair value is less than its carrying amount, we would perform the first step (“step one”) of the two-step impairment test and calculate the estimated fair value of the reporting unit by using discounted cash flow valuation models and by comparing our reporting unit to guideline publicly traded companies. These methods require estimates of our future revenues, profits, capital expenditures, working capital, and other relevant factors, as well as selecting appropriate guideline publicly traded companies for our reporting unit. We estimate these amounts by evaluating historical trends, current budgets, operating plans, industry data, and other relevant factors. Alternatively, we may bypass the qualitative assessment described above for our reporting unit in any period and proceed directly to performing step one of the goodwill impairment test.

We performed a step zero qualitative analysis for our assessment of goodwill impairment for fiscal years 2022 and 2021. After evaluating and weighing all relevant events and circumstances, we concluded that it is not more likely than not that the fair value of our reporting unit was less than its carrying amount. Consequently, we did not perform a step one quantitative analysis and determined goodwill was not impaired for our reporting unit for fiscal years 2022 and 2021.

Our intangible assets that have finite useful lives and other long-lived assets are assessed for potential impairment when there is evidence that events and circumstances related to our financial performance and economic environment indicate the carrying amount of the assets may not be recoverable. When impairment indicators are identified, we test for impairment using undiscounted cash flows. If such tests indicate impairment, then we measure and record the impairment as the difference between the carrying value of the asset and the fair value of the asset. Significant management judgment is required in forecasting future operating results used in the preparation of the projected cash flows. Should different conditions prevail, material write downs of our intangible assets or other long-lived assets could occur. We review the estimated remaining useful lives of our acquired intangible assets at each reporting period. A reduction in our estimate of remaining useful lives, if any, could result in increased annual amortization expense in future periods. With exception to the factors related to Bridge as discussed in Note 3—Acquisitions and Disposals, we did not recognize any impairment charges on intangible assets that have finite useful lives or other long-lived assets in fiscal years 2022 and 2021.

Income Taxes

We use the asset and liability method of accounting for income taxes. Under this method, income tax expense is recognized for the amount of taxes payable or refundable for the current year. In addition, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial reporting and tax basis of assets and liabilities, and for operating losses and tax credit carryforwards. Management must make assumptions, judgments and estimates to determine our current provision for income taxes and our deferred tax assets and liabilities.

We record a valuation allowance to reduce our deferred tax assets to the net amount that we believe is more likely than not to be realized. Accordingly, the need to establish such allowance is assessed periodically by considering matters such as future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and results of recent operations. The evaluation of recoverability of the deferred tax assets requires that we weigh all positive and negative evidence to reach a conclusion that it is more likely than not that all or some portion of the deferred tax assets will not be realized. The weight given to the evidence is commensurate with the extent to which it can be objectively verified.

We account for uncertainty in tax positions by recognizing a tax benefit from uncertain tax positions when it is more likely than not that the position will be sustained upon examination. Evaluating our uncertain tax positions, and determining our provision for (benefit from) income taxes are inherently uncertain and require making judgments, assumptions, and estimates.

While we believe that we have adequately reserved for our uncertain tax positions, no assurance can be given that the final tax outcome of these matters will not be different. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit. To the extent that the final tax outcome of these matters is different than the amounts recorded, such differences will impact the provision for (benefit from) income taxes and the effective tax rate in the period in which such determination is made.

The (provision for) benefit from income taxes includes the impact of reserve provisions and changes to reserves as well as the related net interest and penalties. In addition, we are subject to the continuous examination of our income tax returns by the United States Internal Revenue Service and other tax authorities that may assert assessments against us. We regularly assess the likelihood of adverse outcomes resulting from these examinations and assessments to determine the adequacy of our (provision for) benefit from income taxes.

Recent Accounting Pronouncements

For information on recent accounting pronouncements, see *Recent Accounting Pronouncements* in Note 1—Description of Business and Summary of Significant Accounting Policies in the notes to the consolidated financial statements.

Non-GAAP Financial Measures

In addition to our results determined in accordance with U.S. GAAP, we believe the following non-GAAP measures are useful in evaluating our operating performance and liquidity. We believe that non-GAAP financial information, when taken collectively, may be helpful to investors because it provides consistency and comparability with past financial performance and assists in comparisons with other companies, some of which use similar non-GAAP financial information to supplement their U.S. GAAP results. The non-GAAP financial information is presented for supplemental informational purposes only and should not be considered a substitute for financial information presented in accordance with U.S. GAAP, and may be different from similarly-titled non-GAAP measures used by other companies. A reconciliation is provided below for each non-GAAP financial measure to the most directly comparable financial measure stated in accordance with U.S. GAAP. Investors are encouraged to review the related U.S. GAAP financial measures and the reconciliation of these non-GAAP financial measures to their most directly comparable U.S. GAAP financial measures.

Non-GAAP Operating Income

We define non-GAAP operating income as loss from operations excluding the impact of stock-based compensation, transaction costs, sponsor costs, impairment charges, other non-recurring costs, amortization of acquisition-related intangibles, and the impact of fair value adjustments to acquired unearned revenue relating to the Take-Private Transaction and Certica, Impact and Elevate Data Sync acquisitions that we do not believe are reflective of our ongoing operations. We believe non-GAAP operating income is useful in evaluating our operating performance compared to that of other companies in our industry, as this metric generally eliminates the effects of certain items that may vary for different companies for reasons unrelated to overall operating performance. Although we exclude the amortization of acquisition-related intangibles from this non-GAAP measure, management believes it is important for investors to understand that such intangible assets were recorded as part of purchase accounting and contribute to revenue generation.

The following table provides a reconciliation of loss from operations to non-GAAP operating income for each of the periods indicated:

	Successor			Predecessor
(dollars in thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Loss from operations	$ (16,480)	$ (46,948)	$ (172,543)	$ (16,587)
Stock-based compensation	39,779	25,785	50,162	7,109
Transaction costs [1]	9,123	9,090	11,896	4,879
Sponsor costs [2]	517	414	446	739
Impairment charges [3]	—	8,116	46,127	—
Other non-recurring costs [4]	3,365	3,944	8,490	2,742
Amortization of acquisition related intangibles	136,710	133,994	95,310	2,586
Fair value adjustment in connection with purchase accounting	868	9,322	22,751	—
Non-GAAP operating income	$ 173,882	$ 143,717	$ 62,639	$ 1,468

(1) Represents expenses incurred with third parties as part of the Company's merger and acquisition activity, including due diligence, closing and post-close integration activities.

(2) Represent expenses incurred for services provided by Thoma Bravo and their affiliates.

[3] Includes impairment charges as follows:

	Successor			Predecessor
(dollars in thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Impairment on Bridge held-for-sale goodwill	$ —	$ —	$ 29,612	$ —
Impairment on Bridge disposal group	—	1,218	10,166	—
Impairment of leased properties	—	6,898	6,349	—
Total impairment charges	$ —	$ 8,116	$ 46,127	$ —

(4) Includes other non-recurring costs as follows:

(dollars in thousands)	Successor Year Ended December 31, 2022	Successor Year Ended December 31, 2021	Successor Period from April 1 to December 31, 2020	Predecessor Period from January 1 to March 31, 2020
Professional services related to sale of Bridge	$ —	$ 1,185	$ 867	$ 67
Loss on exit of leased properties	—	66	641	—
Contract modification fees	230	9	2,570	—
Employee severance	744	1,761	3,753	2,675
Workforce realignment costs	1,388	—	—	—
Other insignificant non-recurring costs	1,003	923	659	—
Total other non-recurring costs	$ 3,365	$ 3,944	$ 8,490	$ 2,742

Free Cash Flow

We define free cash flow as net cash provided by (used in) operating activities less purchases of property and equipment and intangible assets, net of proceeds from disposals of property and equipment. We believe free cash flow facilitates period-to-period comparisons of liquidity. We consider free cash flow to be an important measure because it measures the amount of cash we generate and reflects changes in working capital. We use free cash flow in conjunction with traditional U.S. GAAP measures as part of our overall assessment of our liquidity, including the preparation of our annual operating budget and quarterly forecasts, to evaluate the effectiveness of our business strategies, and to communicate with our board of directors concerning our liquidity.

The following table provides a reconciliation of net cash provided by (used in) operating activities to free cash flow for each of the periods indicated:

(dollars in thousands)	Successor Year Ended December 31, 2022	Successor Year Ended December 31, 2021	Successor Period from April 1 to December 31, 2020	Predecessor Period from January 1 to March 31, 2020
Net cash provided by (used in) operating activities	$ 140,271	$ 105,143	$ 36,884	$ (57,058)
Purchases of property and equipment and intangible assets	(6,321)	(4,259)	(1,634)	(732)
Proceeds from disposals of property and equipment	43	53	81	19
Free cash flow	$ 133,993	$ 100,937	$ 35,331	$ (57,771)

Adjusted EBITDA

EBITDA is defined as earnings before debt-related costs, including interest and loss on debt extinguishment, benefit for taxes, depreciation, and amortization. We further adjust EBITDA to exclude certain items of a significant or unusual nature, including stock-based compensation, transaction costs, sponsor costs, impairment charges, other non-recurring costs, effects of foreign currency transaction gains and losses, amortization of acquisition-related intangibles, and the impact of fair value adjustments to acquired unearned revenue relating to the Take-Private Transaction and Certica, Impact, and Elevate Data Sync acquisitions. Although we exclude the amortization of acquisition-related intangibles from this non-GAAP measure, management believes that it is important for investors to understand that such intangible assets were recorded as part of purchase accounting and contribute to revenue generation.

We believe that adjusted EBITDA provides useful information to investors and others in understanding and evaluating our operating results in the same manner as our management team and Board. In addition, it provides a useful measure for period-to-period comparisons of our business, as it removes the effect of certain non-cash expenses and certain variable charges.

Adjusted EBITDA has limitations as a financial measure, should be considered as supplemental in nature, and is not meant as a substitute for the related financial information prepared in accordance with U.S. GAAP.

The following table presents a reconciliation of net loss to adjusted EBITDA for each of the periods indicated:

(dollars in thousands)	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Net Loss	$ (34,242)	$ (88,679)	$ (177,981)	$ (22,203)
Interest on outstanding debt and loss on debt extinguishment	24,591	72,775	50,921	—
Provision (benefit) for taxes	(8,132)	(33,719)	(43,924)	183
Depreciation	4,491	3,713	3,630	2,982
Amortization	7	7	7	35
Stock-based compensation	39,779	25,785	50,162	7,109
Transaction costs (1)	9,123	9,090	11,896	4,878
Sponsor costs (2)	517	414	446	739
Impairment charges (3)	—	8,116	46,127	—
Other non-recurring costs (4)	3,365	3,944	10,333	6,874
Effects of foreign currency transaction (gains) and losses	2,514	1,916	(3,353)	1,626
Amortization of acquisition-related intangibles	136,710	133,994	95,310	2,586
Fair value adjustments to deferred revenue in connection with purchase accounting	868	9,322	22,751	—
Adjusted EBITDA	$ 179,591	$ 146,678	$ 66,325	$ 4,809

(1) Represents expenses incurred with third parties as part of the Company's merger and acquisition activity, including due diligence, closing and post-close integration activities.

(2) Represent expenses incurred for services provided by Thoma Bravo and their affiliates.

(3) Includes impairment charges as follows:

(dollars in thousands)	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Impairment on Bridge held-for-sale goodwill	$ —	$ —	$ 29,612	$ —
Impairment on Bridge disposal group	—	1,218	10,166	—
Impairment of leased properties	—	6,898	6,349	—
Total impairment charges	$ —	$ 8,116	$ 46,127	$ —

(4) Includes other non-recurring costs as follows:

(dollars in thousands)	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Professional services related to sale of Bridge	$ —	$ 1,185	$ 867	$ 67
Loss on exit of leased properties	—	66	2,484	4,132
Contract modification fees	230	9	2,570	—
Employee severance	744	1,761	3,753	2,675
Workforce realignment costs	1,388	—	—	—
Other insignificant non-recurring costs	1,003	923	659	—
Total other non-recurring costs	$ 3,365	$ 3,944	$ 10,333	$ 6,874

Allocated Combined Receipts

We define Allocated Combined Receipts as the combined receipts of our Company and companies that we have acquired allocated to the period of service delivery. We calculate Allocated Combined Receipts as the sum of (i) revenue and (ii) the impact of fair value adjustments to acquired unearned revenue related to the Take-Private Transaction and Certica, Impact and Elevate Data Sync acquisitions that we do not believe are reflective of our ongoing operations. Management uses this measure to evaluate organic growth of the business period over period, as if the Company had operated as a single entity and excluding the impact of acquisitions or adjustments due to purchase accounting. Organic growth in current and future periods is driven by sales to new customers and the addition of additional subscriptions and functionality to existing customers, offset by customer cancellations or reduced subscriptions upon renewal.

We believe that it is important to evaluate growth on this organic basis, as it is an indication of the success of our services from the customer's perspective that is not impacted by corporate events such as acquisitions or the fair value estimates of acquired unearned revenue. We believe this measure is useful to investors because it illustrates the trends in our organic revenue growth and allows investors to analyze the drivers of revenue on the same basis as management.

The following table presents a reconciliation of revenue to Allocated Combined Receipts for each of the periods indicated:

	Successor			Predecessor
(dollars in thousands)	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Revenue	$ 475,194	$ 405,361	$ 230,673	$ 71,389
Fair value adjustments to deferred revenue in connection with purchase accounting	868	9,322	22,751	—
Allocated Combined Receipts	$ 476,062	$ 414,683	$ 253,424	$ 71,389

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

We are exposed to market risk in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in foreign currency exchange rates and interest rates and inflation. We do not hold or issue financial instruments for trading purposes.

Foreign Currency Exchange Risk

Our reporting currency is the U.S. dollar. Due to our international operations, we have foreign currency risks related to operating expense denominated in currencies other than the U.S. dollar, particularly the euro. Most of our sales are denominated in U.S. dollars, and therefore our revenue is not currently subject to significant foreign currency risk. Our operating expenses are denominated in the currencies of the countries in which our operations are located, which are primarily in the United States, Europe, Australia, and New Zealand. Our consolidated results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to changes in foreign exchange rates. To date, we have not entered into any hedging arrangements with respect to foreign currency risk or other derivative financial instruments. During the year ended December 31, 2022, a hypothetical 10% change in foreign currency exchange rates applicable to our business would not have had a material impact on our consolidated financial statements.

Interest Rate Risk

We had cash, cash equivalents and restricted cash of $190.3 million as of December 31, 2022, consisting of cash and money market accounts in highly rated financial institutions. With the exception of cash, these interest-earning instruments carry a degree of interest rate risk. To date, fluctuations in our interest income have not been significant. We do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate risk exposure. Due to the short-term nature of these investments, we have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates.

At December 31, 2022, we had in place a $125.0 million Senior Revolver, with availability of $125.0 million, and approximately $496.3 million outstanding under the Senior Term Loan. The Senior Revolver bears interest at 2.5% whereas the Senior Term Loan bears interest at 2.75% plus a variable applicable rate. As a result of increased federal funds interest rates, the interest rate applicable to our Senior Term Loan increased from 3.25% as of December 31, 2021 to 6.12% as of December 31, 2022, impacting our cost of debt.

We have an agreement to maintain cash balances at a financial institution of no less than $4.2 million as collateral for several letters of credit for purposes of securing certain of the Company's obligations under facility leases and other contractual arrangements.

Inflation Risk

We do not believe that inflation has had a material effect on our business, financial condition or results of operations in our fiscal year ended December 31, 2022 because substantially all of our sales are denominated in U.S. dollars, which have not been subject to material currency inflation, and our operating expenses that are denominated in currencies other than U.S. dollars have not been subject to material currency inflation.

Item 8. Financial Statements and Supplementary Data.

INSTRUCTURE HOLDINGS, INC.

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Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Instructure Holdings, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Instructure Holdings, Inc. (the Successor or the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows for the years ended December 31, 2022 and December 31, 2021, and the period from April 1, 2020 through December 31, 2020, and the related notes. We have also audited the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows of the Predecessor for the period from January 1, 2020 through March 31, 2020, and the related notes. These are collectively referred to as the "consolidated financial statements". In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for the years ended December 31, 2022 and December 31, 2021 and the period from April 1, 2020 through December 31, 2020, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the consolidated financial statements present fairly, in all material respects, the results of operations and cash flows of the Predecessor for the period from January 1, 2020 through March 31, 2020, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission 2013 framework and our report dated February 17, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB. We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the financial statements that was communicated or required to be communicated to the audit committee and that: (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of the critical audit matter 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Allocating revenue in contracts with multiple performance obligations

Description of the Matter	As described in Note 1 to the consolidated financial statements, many of the Company's contracts with customers contain multiple performance obligations, which are accounted for separately when recognizing revenue if they are distinct. In such cases, the transaction price is allocated to the separate performance obligations based on their relative standalone selling prices. Management estimates the standalone selling prices based on the Company's overall pricing objectives and considers significant pricing practices, including discounting, geographical location, the size and volume of transactions, the customer type, contract pricing, and historical standalone sales. The Company analyzes standalone selling prices on a periodic basis to identify if it has experienced significant changes in standalone selling prices. In contracts that include multiple products or services, auditing the identification of distinct performance obligations and the allocation of transaction price is challenging. For example, judgment is required to identify distinct performance obligations in the contract and the appropriate timing of revenue recognition for each performance obligation. Management's estimates of the standalone selling prices used to allocate the transaction price are sensitive to changes in management's business practices, such as pricing strategies. Such changes can have a significant impact on the determination of standalone selling price.
How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process to identify performance obligations and allocate the transaction price to those performance obligations, including the underlying assumptions related to the estimation of standalone selling prices. Our audit procedures also included, among others, an evaluation of management's contract assessment and identification of performance obligations. We inspected a sample of customer contracts and reviewed management's contract assessment and identification of performance obligations. We then tested the period over which management determined the revenue associated with each performance obligation should be recognized, as well as the standalone selling prices assigned to those performance obligations for purposes of allocating the transaction price. In testing the Company's estimate of standalone selling prices, we assessed the appropriateness of the methodology applied, tested the clerical accuracy of the calculations, and evaluated the accuracy and completeness of the underlying data used in management's analysis. This evaluation included assessing the effect of the Company's current and historical pricing and discounting practices for various transaction sizes and volumes across different customer types and geographical locations.

/s/ Ernst & Young LLP
We have served as the Company's auditor since 2012.

Salt Lake City, Utah
February 17, 2023

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Instructure Holdings, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Instructure Holdings, Inc.'s internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Instructure Holdings, Inc. (the Successor or the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

As indicated in the accompanying Management's Annual Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of LearnPlatform, Inc., which is included in the 2022 consolidated financial statements of the Company and constituted 4.7% of consolidated total assets as of December 31, 2022 and 0.1% of consolidated revenues for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting of LearnPlatform, Inc.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the accompanying consolidated balance sheets of Instructure Holdings, Inc. (the Successor or the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows for the years ended December 31, 2022 and December 31, 2021, and the period from April 1, 2020 through December 31, 2020, and the related notes. We have also audited the related consolidated statements of operations and comprehensive loss, stockholders' equity and cash flows of the Predecessor for the period from January 1, 2020 through March 31, 2020, and the related notes. Our report dated February 17, 2023 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

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

Definition and Limitations of Internal Control Over Financial Reporting

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

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

/s/ Ernst & Young LLP

Salt Lake City, Utah
February 17, 2023

INSTRUCTURE HOLDINGS, INC.

Consolidated Balance Sheets
(in thousands, except per share data)

	December 31, 2022	December 31, 2021
Assets		
Current assets:		
Cash and cash equivalents	$ 185,954	$ 164,928
Accounts receivable—net	71,428	51,607
Prepaid expenses	11,120	15,475
Deferred commissions	13,390	11,418
Other current assets	3,144	3,384
Total current assets	285,036	246,812
Property and equipment, net	12,380	10,792
Right-of-use assets	13,575	18,175
Goodwill	1,266,402	1,194,221
Intangible assets, net	542,679	629,746
Noncurrent prepaid expenses	871	1,553
Deferred commissions, net of current portion	18,781	20,105
Deferred tax assets	8,143	6,477
Other assets	5,622	5,901
Total assets	$ 2,153,489	$ 2,133,782
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 18,792	$ 18,324
Accrued liabilities	28,483	28,408
Lease liabilities	7,205	6,666
Long-term debt, current	4,013	2,763
Deferred revenue	275,564	240,936
Total current liabilities	334,057	297,097
Long-term debt, net of current portion	486,471	490,500
Deferred revenue, net of current portion	13,816	14,740
Lease liabilities, net of current portion	16,610	23,678
Deferred tax liabilities	24,702	29,851
Other long-term liabilities	1,706	3,531
Total liabilities	877,362	859,397
Stockholders' equity:		
Common stock, par value $0.01 per share; 500,000 shares authorized as of December 31, 2022 and December 31, 2021, 142,917 and 140,741 shares issued and outstanding as of December 31, 2022 and December 31, 2021, respectively.	1,429	1,407
Additional paid-in capital	1,575,600	1,539,638
Accumulated deficit	(300,902)	(266,660)
Total stockholders' equity	1,276,127	1,274,385
Total liabilities and stockholders' equity	$ 2,153,489	$ 2,133,782

Share amounts and per share data give retroactive effect to the forward stock split described in the Description of Business and Basis of Presentation footnote effective July 9, 2021.

See accompanying notes.

INSTRUCTURE HOLDINGS, INC.

Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except per share amounts)

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Revenue:				
Subscription and support	$ 430,661	$ 367,781	$ 209,148	$ 65,968
Professional services and other	44,533	37,580	21,525	5,421
Total revenue	475,194	405,361	230,673	71,389
Cost of revenue:				
Subscription and support	146,546	148,923	108,603	19,699
Professional services and other	25,748	20,942	15,547	4,699
Total cost of revenue	172,294	169,865	124,150	24,398
Gross profit	302,900	235,496	106,523	46,991
Operating expenses:				
Sales and marketing	181,744	162,544	125,650	27,010
Research and development	77,189	63,771	51,066	19,273
General and administrative	60,447	54,911	62,572	17,295
Impairment on held-for-sale goodwill	—	—	29,612	—
Impairment on disposal group	—	1,218	10,166	—
Total operating expenses	319,380	282,444	279,066	63,578
Loss from operations	(16,480)	(46,948)	(172,543)	(16,587)
Other income (expense):				
Interest income	1,679	29	49	313
Interest expense	(24,595)	(50,360)	(50,921)	(8)
Other income (expense), net	(2,978)	(2,695)	1,510	(5,738)
Loss on extinguishment of debt	—	(22,424)	—	—
Total other income (expense), net	(25,894)	(75,450)	(49,362)	(5,433)
Loss before income tax benefit (expense)	(42,374)	(122,398)	(221,905)	(22,020)
Income tax benefit (expense)	8,132	33,719	43,924	(183)
Net loss and comprehensive loss	$ (34,242)	$ (88,679)	$ (177,981)	$ (22,203)
Net loss per common share, basic and diluted	$ (0.24)	$ (0.67)	$ (1.41)	$ (0.58)
Weighted-average common shares used in computing basic and diluted net loss per common share attributable to common stockholders	141,815	132,387	126,235	38,369

Share amounts and per share data give retroactive effect to the forward stock split described in the Description of Business and Basis of Presentation footnote effective July 9, 2021.

See accompanying notes.

INSTRUCTURE HOLDINGS, INC.

Consolidated Statements of Stockholders' Equity
(in thousands)

	Common Stock, $0.0001 Par Value		Common Stock, $0.01 Par Value		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount	Shares	Amount			
Predecessor Balances at December 31, 2019	38,257	$ 3	—	$ —	$ 493,795	$ (348,241)	$ 145,557
Exercise of common stock options	131	—	—	—	1,067	—	1,067
Vesting of restricted stock units	233	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	7,308	—	7,308
Shares withheld for tax withholding on vesting of restricted stock units	(29)	—	—	—	(1,413)	—	(1,413)
Net loss	—	—	—	—	—	(22,203)	(22,203)
Predecessor Balances at March 31, 2020	38,592	3	—	—	500,757	(370,444)	130,316
Cancellation of Predecessor equity	(38,592)	(3)	—	—	(500,757)	370,444	(130,316)
Take-Private Transaction	—	—	126,240	1,262	1,139,526	—	1,140,788
Repurchase of TopCo Units	—	—	(21)	—	—	—	—
Additional capital contribution	—	—	—	—	116,452	—	116,452
Stock-based compensation	—	—	—	—	8,725	—	8,725
Net loss	—	—	—	—	—	(177,981)	(177,981)
Successor Balances at December 31, 2020	—	—	126,219	1,262	1,264,703	(177,981)	1,087,984
Repurchase of TopCo Units	—	—	(220)	(2)	(928)	—	(930)
Issuance of common stock in connection with initial public offering, net of underwriters' discounts and commissions and issuance costs	—	—	14,175	142	259,112	—	259,254
Vesting of restricted stock units	—	—	634	6	(6)	—	—
Shares withheld for tax withholding on vesting of restricted stock units	—	—	(67)	(1)	(1,567)	—	(1,568)
Stock-based compensation	—	—	—	—	18,324	—	18,324
Net loss	—	—	—	—	—	(88,679)	(88,679)
Successor Balances at December 31, 2021	—	—	140,741	1,407	1,539,638	(266,660)	1,274,385
Vesting of restricted stock units	—	—	1,987	20	(20)	—	—
Purchase of ESPP shares	—	—	418	4	7,322	—	7,326
Restricted stock withheld for taxes	—	—	(229)	(2)	(5,269)	—	(5,271)
Stock-based compensation	—	—	—	—	33,929	—	33,929
Net loss	—	—	—	—	—	(34,242)	(34,242)
Successor Balances at December 31, 2022	—	$ —	142,917	$ 1,429	$ 1,575,600	$ (300,902)	$ 1,276,127

Share amounts and per share data give retroactive effect to the forward stock split described in the Description of Business and Basis of Presentation footnote effective July 9, 2021.

See accompanying notes.

INSTRUCTURE HOLDINGS, INC.

Consolidated Statements of Cash Flows
(in thousands)

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Operating Activities:				
Net loss	$ (34,242)	$ (88,679)	$ (177,981)	$ (22,203)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:				
Depreciation of property and equipment	4,491	3,713	3,630	2,982
Amortization of intangible assets	136,717	134,003	95,315	2,620
Amortization of deferred financing costs	1,178	2,435	1,508	—
Impairment on disposal group	—	1,218	10,166	—
Impairment on held-for-sale goodwill	—	—	29,612	—
Loss on extinguishment of debt	—	22,424	—	—
Stock-based compensation	33,585	18,072	8,685	7,109
Deferred income taxes	(10,222)	(36,485)	(43,924)	—
Other	3,669	1,685	1,641	1,959
Changes in assets and liabilities:				
Accounts receivable, net	(18,454)	(4,314)	(19,947)	11,903
Prepaid expenses and other assets	5,940	2,094	26,948	(25,121)
Deferred commissions	(648)	(8,358)	(24,537)	1,469
Right-of-use assets	4,888	8,729	7,989	4,509
Accounts payable and accrued liabilities	(2,227)	8,038	(4,499)	2,187
Deferred revenue	24,238	48,543	122,157	(36,983)
Lease liabilities	(6,817)	(6,363)	(2,836)	(7,489)
Other liabilities	(1,825)	(1,612)	2,957	—
Net cash provided by (used in) operating activities	140,271	105,143	36,884	(57,058)
Investing Activities:				
Purchases of property and equipment	(6,321)	(4,259)	(1,634)	(732)
Proceeds from sale of property and equipment	43	53	81	19
Proceeds from sale of Bridge	—	46,018	—	—
Business acquisitions, net of cash acquired	(109,013)	(26,584)	(2,025,237)	—
Maturities of marketable securities	—	—	—	15,584
Net cash provided by (used in) investing activities	(115,291)	15,228	(2,026,790)	14,871
Financing Activities:				
IPO proceeds, net of offering costs paid of $5,719	—	259,254	—	—
Proceeds from issuance of common stock from employee equity plans	7,327	—	—	1,067
Shares repurchased for tax withholdings on vesting of restricted stock units	(5,272)	(1,568)	—	(1,413)
Proceeds from issuance of term debt, net of discount	—	493,090	830,729	—
Proceeds from contributions from stockholders	—	—	1,257,240	—
Distributions to stockholders	—	(930)	—	—
Repayments of long-term debt	(3,750)	(839,187)	(5,813)	—
Term Loan prepayment premium	—	(11,893)	—	—
Payments of financing costs	(19)	(937)	—	—
Net cash provided by (used in) financing activities	(1,714)	(102,171)	2,082,156	(346)
Foreign currency impacts on cash and cash equivalents	(2,153)	—	—	—
Net increase (decrease) in cash, cash equivalents and restricted cash	21,113	18,200	92,250	(42,533)
Cash, cash equivalents and restricted cash, beginning of period	169,153	150,953	58,703	101,236
Cash, cash equivalents and restricted cash, end of period	$ 190,266	$ 169,153	$ 150,953	$ 58,703
Supplemental cash flow disclosure:				
Cash paid for taxes	$ 3,102	$ 646	$ 296	$ 32
Interest paid	$ 18,073	$ 48,058	$ 49,227	$ —
Non-cash investing and financing activities:				
Capital expenditures incurred but not yet paid	$ 67	$ 83	$ —	$ 79

See accompanying notes.

INSTRUCTURE HOLDINGS, INC.

Consolidated Statements of Cash Flows
(in thousands)

The following provides a reconciliation of cash, cash equivalents and restricted cash to the amounts reported on the consolidated balance sheets. Restricted cash has been disclosed in Other assets as it is associated with letters of credit obtained to secure office space from our various lease agreements and other contractual arrangements:

	Successor			Predecessor
	December 31, 2022	December 31, 2021	December 31, 2020	March 31, 2020
Cash and equivalents	$ 185,954	$ 164,928	$ 146,212	$ 53,889
Restricted cash	4,312	4,225	4,741	4,814
Total cash, cash equivalents and restricted cash	$ 190,266	$ 169,153	$ 150,953	$ 58,703

See accompanying notes.

INSTRUCTURE HOLDINGS, INC.

Notes to Consolidated Financial Statements

1. Description of Business and Summary of Significant Accounting Policies

Organization

On March 24, 2020, Instructure Parent, L.P. ("TopCo") acquired 100 percent of Instructure, Inc.'s equity. Instructure Intermediate Holdings I, Inc. was a wholly-owned subsidiary of TopCo and was formed on January 14, 2020 by Thoma Bravo for the purpose of purchasing Instructure, Inc. and had no operations prior to the Take-Private Transaction. On May 26, 2021, Instructure Intermediate Holdings I, Inc. changed its name to Instructure Holdings, Inc ("Instructure" or the "Company"). As a result of the Take-Private Transaction, the accompanying consolidated financial statements are presented in two distinct periods to indicate the application of two different bases of accounting between the periods presented and are therefore not comparable. The period prior to March 31, 2020 includes all of the accounts of Instructure, Inc. ("Predecessor 2020 Period") and the periods beginning April 1, 2020 include all of the accounts of Instructure Holdings, Inc. (Successor), with the period ending December 31, 2020 being the Successor 2020 Period. For accounting purposes, the "Acquisition Date" for the Take-Private Transaction has been designated as March 31, 2020, as the operating results and change in financial position for the intervening period from March 24, 2020 to March 31, 2020 is not material. Except as otherwise stated, the financial information, accounting policies, and activities of the Successor and the Predecessor are referred to as those of the Company.

Instructure is an education technology company dedicated to elevating student access, amplifying the power of teaching, and inspiring everyone to learn together. Instructure's learning platform delivers a next-generation learning management system ("LMS"), robust assessments for learning, actionable analytics, and engaging, dynamic content. Instructure offers its learning platform through a Software-as-a-Service, or SaaS, business model. Instructure, Inc. was incorporated in the state of Delaware in September 2008. We are headquartered in Salt Lake City, Utah, and have wholly-owned subsidiaries in the United Kingdom, Australia, the Netherlands, Hong Kong, Sweden, Brazil, Mexico, Hungary, and Singapore.

Basis of Presentation

The consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States, or U.S. GAAP. The accompanying consolidated financial statements include our accounts and those of our wholly-owned subsidiaries. All intercompany transactions have been eliminated in consolidation.

On July 9, 2021, the Company effected a 126,239.815-for-1 stock split of its issued and outstanding shares of common stock and made comparable and equitable adjustments to its equity awards in accordance with the terms of the awards. The par value of the common stock was not adjusted as a result of the stock split. Accordingly, all share and per share amounts for all periods presented in the accompanying consolidated financial statements and notes thereto have been adjusted retrospectively, where applicable, to reflect this stock split. In connection with the stock split, on July 9, 2021, the Company's board of directors and stockholders approved the Certificate of Amendment to the Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock from 2,000 shares to 500,000,000 shares and to increase the number of authorized shares of preferred stock from zero shares to 50,000,000 shares. No preferred stock has been issued or outstanding.

On July 26, 2021, the Company completed its IPO of 12,500,000 shares of common stock at an offering price of $20.00 per share. The Company received net proceeds of $234.0 million after deducting underwriting discounts and commissions. On August 19, 2021, the underwriters partially exercised their over-allotment option and purchased an additional 1,675,000 shares of common stock at the offering price of $20.00 per share. The Company received additional net proceeds of $31.4 million after deducting underwriting discounts and commissions.

Use of Estimates

The preparation of the consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect reported amounts and disclosures. Accordingly, actual results could differ from those estimates. Such estimates, which we evaluate on an on-going basis, include provisions for credit losses, useful lives for property and equipment and intangible assets, valuation allowances for net deferred income tax assets, valuation of stock-based compensation and common stock, acquisition related estimates, our assessment for impairment of goodwill, intangible assets, and other long-lived assets, the standalone selling price of performance obligations, timing of professional services revenue recognition, and the determination of the period of benefit for deferred commissions. We base our estimates on historical experience and on various other assumptions which we believe to be reasonable.

Operating Segments

We operate in a single operating segment, cloud-based learning management, assessment and performance systems. Operating segments are defined as components of an enterprise for which separate financial information is regularly evaluated by the chief operating decision makers ("CODMs"), which are our chief executive officer and chief financial officer, in deciding how to allocate resources and assess performance. Our CODMs evaluate our financial information and resources and assess the performance of these resources on a consolidated basis. Since we operate in one operating segment, all required financial segment information can be found on the consolidated financial statements.

Net Loss Per Share Attributable to Common Stockholders

Basic net loss per share attributable to common stockholders for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period is computed by dividing net loss attributable to common stockholders by the weighted-average number of common shares outstanding for the period. Diluted net loss per share attributable to common stockholders is computed by giving effect to all potential dilutive common stock equivalents outstanding for the period. For purposes of this calculation, options to purchase common stock are considered to be common stock equivalents in the Predecessor 2020 Period. Restricted stock units are considered to be common stock equivalents in the year ended December 31, 2022, the year ended December 31, 2021, and Predecessor 2020 Period. Shares purchased through the employee stock purchase plan are considered to be common stock equivalents in the year ended December 31, 2022, the year ended December 31, 2021, and Predecessor 2020 Period. There were no restricted stock units outstanding during the Successor 2020 Period.

A reconciliation of the denominator used in the calculation of basic and diluted net loss per share is as follows (in thousands, except per share amounts):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Numerator:				
Net loss	$ (34,242)	$ (88,679)	$ (177,981)	$ (22,203)
Denominator:				
Weighted-average common shares outstanding—basic	141,815	132,387	126,235	38,369
Total weighted-average common shares outstanding—basic	141,815	132,387	126,235	38,369
Dilutive effect of share equivalents resulting from stock options and unvested restricted stock units	—	—	—	—
Weighted-average common shares outstanding-diluted	141,815	132,387	126,235	38,369
Net loss per common share, basic and diluted	$ (0.24)	$ (0.67)	$ (1.41)	$ (0.58)

For the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period, we incurred net losses and, therefore, the effect of our outstanding options to purchase common stock, restricted stock units, and rights to purchase common stock through the employee stock purchase plan, were not included in the calculation of diluted net loss per share as the effect would be anti-dilutive. The following table contains share totals with a potentially dilutive impact (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Options to purchase common stock	—	—	—	470
Restricted stock units	4,846	4,723	—	2,116
Employee stock purchase plan	129	176	—	—
Total	4,975	4,899	—	2,586

Concentration of Credit Risk, Significant Customers and International Operations

Financial instruments that potentially subject us to a concentration of credit risk consist principally of cash, cash equivalents and accounts receivable. We deposit cash with high credit quality financial institutions, which at times, may exceed federally insured amounts. We have not experienced any losses on our deposits. We perform ongoing credit evaluations of our customers' financial condition and generally require no collateral from our customers. We review the expected collectability of accounts receivable and record a provision for credit losses for amounts that we determine are not collectible.

There were no customers with revenue as a percentage of total revenue exceeding 10% for the periods presented.

As of December 31, 2022, there were no customers with outstanding net accounts receivable balances as a percentage of total outstanding net accounts receivable greater than 10%. As of December 31, 2021, our largest customer's outstanding net accounts receivable balance as a percentage of total outstanding net accounts receivable represented 10.5%. There were no other customers with outstanding net accounts receivable balances as a percentage of the total outstanding net accounts receivable balance greater than 10% as of December 31, 2021.

Cash and Cash Equivalents

We consider all short-term highly liquid investments purchased with original maturities of three months or less at the time of acquisition to be cash equivalents.

Provision for Credit Losses

Provision for credit losses consist of bad debt expense associated with our accounts receivable balance. These losses are recorded in general and administrative in our consolidated statements of operations and comprehensive loss.

We are exposed to credit losses primarily through our receivables from customers. We develop estimates to reflect the risk of credit loss which are based on historical loss trends adjusted for asset specific attributes, current conditions and reasonable and supportable forecasts of the economic conditions that will exist through the contractual life of the financial asset. We monitor our ongoing credit exposure through an active review of collection trends. Our activities include monitoring the timeliness of payment collection, managing dispute resolution and performing timely account reconciliations. Our provisions for credit loss balances at December 31, 2022 and 2021 were $1.7 million and $0.8 million, respectively.

The following is a roll-forward of our provision for credit losses (in thousands):

	Balance Beginning of Period	Charged to Costs or Expenses	Deductions[(1)]	Balance at End of Period
Provision for Credit Losses				
Year ended December 31, 2022	$ 815	940	(287)	$ 1,468
Year ended December 31, 2021	$ 902	232	(319)	$ 815
Successor 2020 Period	$ —	1,006	(104)	$ 902
Predecessor 2020 Period	$ 871	323	(163)	$ 1,031

(1) Deductions include actual accounts written-off, net of recoveries and revaluations.

Property and Equipment and Intangible Assets

Property and equipment are stated at cost less accumulated depreciation. Expenditures that materially increase values or capacities or extend useful lives of property and equipment are capitalized.

Repairs and maintenance costs that do not extend the useful life or improve the related assets are expensed as incurred. Depreciation is computed using the straight-line method over the estimated useful lives of the assets or over the related lease terms (if shorter). The estimated useful life of each asset category is as follows:

	Estimated Useful Life
Computer and office equipment	2-3 years
Purchased software	2-3 years
Furniture and fixtures	2-5 years
Capitalized software development costs	3 years
Leasehold improvement and other	Lesser of lease term or useful life

Certain costs incurred to develop software applications used in the cloud-based learning, assessment, development and engagement system are capitalized and included in property and equipment, net on the consolidated balance sheets. Capitalizable costs consist of (1) certain external direct costs of materials and services incurred in developing or obtaining internal-use software; and (2) payroll and payroll-related costs for employees who are directly associated with and who devote time to the project. These costs generally consist of internal labor during configuration, coding and testing activities. Research and development costs incurred during the preliminary project stage, or costs incurred for data conversion activities, training, maintenance and general and administrative or overhead costs, are expensed as incurred. Costs that cannot be separated between the maintenance of, and relatively minor upgrades and enhancements to, internal-use software are also expensed as incurred. Costs incurred during the application development stage that significantly enhance and add new functionality to the cloud-based learning, assessment, development and engagement system are capitalized as capitalized software development costs. Capitalization begins when: (1) the preliminary project stage is complete; (2) management with the relevant authority authorizes and commits to the funding of the software project; (3) it is probable the project will be completed; (4) the software will be used to perform the functions intended; and (5) certain functional and quality standards have been met.

Acquired finite-lived intangibles are amortized on a straight-line basis over the estimated useful life of the asset, which ranges from one to ten years.

When there are indicators of potential impairment, we evaluate recoverability of the carrying values of property and equipment and intangible assets by comparing the carrying amount of an asset to the estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of the asset exceeds our estimated undiscounted future net cash flows, an impairment charge is recognized based on the amount by which the carrying value of the asset exceeds the fair value of the asset. We did not incur any impairment charges during the periods presented.

Leases

We enter into operating lease arrangements for real estate assets related to office space. Consistent with the Financial Accounting Standards Board's (“FASB”) Accounting Standards Codification (“ASC”) 842, Leases (“Topic 842”), the Company determines if an arrangement conveys the right to control the use of the identified asset in exchange for consideration. Operating leases are included as right-of-use assets and lease liabilities in the consolidated balance sheets. Right-of-use assets represent the Company’s right to use an underlying asset for the lease term and lease liabilities represent the Company’s obligation to make payments arising from the lease. Right-of-use assets and lease liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term.

Lease payments consist of the fixed payments under the arrangements. Variable costs, such as maintenance and utilities based on actual usage, are not included in the measurement of right-of-use assets and lease liabilities but are expensed when the event determining the amount of variable consideration to be paid occurs. As the implicit rate of the Company’s leases is not determinable, the Company uses an incremental borrowing rate based on the information available at the lease commencement date in determining the present value of lease payments. Lease expense is recognized on a straight-line basis over the lease term.

Fair Value

Our short-term financial instruments include cash equivalents, accounts receivable, accounts payable and accrued liabilities and are carried on the consolidated financial statements as of December 31, 2022 and 2021 at amounts that approximate fair value due to their short-term maturity dates.

Goodwill

Goodwill as of the acquisition date is measured as the excess of consideration transferred over the net of the acquisition date fair values of the assets acquired and the liabilities assumed. Goodwill is not subject to amortization, but is tested annually for impairment within our fourth fiscal quarter using an October 1 measurement date or more frequently if there are indicators of impairment. We first perform a qualitative assessment to determine if it is more likely than not that our reporting unit's carrying amount exceeds its fair value, referred to as a “step zero” approach. If, based on the review of the qualitative factors, we determine it is not more likely than not that the fair value of our reporting unit is less than its carrying value, we would bypass the two-step impairment test. Management considers the following potential indicators of impairment: (1) significant underperformance relative to historical or projected future operating results; (2) significant changes in our use of acquired assets or the strategy of our overall business; (3) significant negative industry or economic trends; and (4) a significant decline in our stock price for a sustained period. We operate under one reporting unit and, as a result, evaluate goodwill impairment based on our fair value as a whole. Our current year impairment test did not result in any impairment of the goodwill balance as no indicators of impairment were identified. Refer to Note 3—Acquisitions and Disposals for additional information regarding impairment of goodwill recognized in the year ended December 31, 2021 related to the sale of Bridge. We did not recognize any additional impairment charges in any of the periods presented. We have no other intangible assets with indefinite useful lives.

Revenue Recognition

We generate revenue primarily from two main sources: (1) subscription and support revenue, which is comprised of SaaS fees from customers accessing our learning platform and from customers purchasing additional support beyond the standard support that is included in the basic SaaS fees; and (2) related professional services revenue, which is comprised of training, implementation services and other types of professional services. Consistent with ASC 606, Revenue from Contracts with Customers, revenue is recognized when control of these services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those services. The timing of revenue recognition may differ from the timing of invoicing our customers. We record an unbilled receivable, which is included within accounts receivable—net on our consolidated balance sheets, when revenue is recognized prior to invoicing. Unbilled receivable balances as of December 31, 2022 and 2021 were $0.6 million and $0.8 million, respectively.

We determined revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer
- Identification of the performance obligations in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligations in the contract
- Recognition of revenue when, or as, we satisfy a performance obligation

The following describes the nature of our primary types of revenue and the revenue recognition policies and significant payment terms as they pertain to the types of transactions we enter into with our customers.

Subscription and Support

Subscription and support revenue is derived from fees from customers to access our learning platform and support beyond the standard support that is included with all subscriptions. The terms of our subscriptions do not provide customers the right to take possession of the software. Subscription and support revenue is generally recognized on a ratable basis over the contract term. Payments from customers are primarily due annually in advance.

Professional Services and Other

Professional services revenue is derived from implementation, training, and consulting services. Our professional services are typically considered distinct from the related subscription services as the promise to transfer the subscription can be fulfilled independently from the promise to deliver the professional services (i.e., customer receives standalone functionality from the subscription and the customer obtains the intended benefit of the subscription without the professional services). Professional services arrangements are billed in advance, and revenue from these arrangements is typically recognized over time as the services are rendered, using an efforts-expended input method. Implementation services also include nonrefundable upfront setup fees, which are allocated to the remaining performance obligations.

Contracts with Multiple Performance Obligations

Many of our contracts with customers contain multiple performance obligations. We account for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price (“SSP”) basis. We determine the SSP based on our overall pricing objectives by reviewing our significant pricing practices, including discounting practices, geographical locations, the size and volume of our transactions, the customer type, price lists, our pricing strategy, and historical standalone sales. SSP is analyzed on a periodic basis to identify if we have experienced significant changes in our selling prices.

Deferred Commissions

Sales commissions earned by our sales force, as well as related payroll taxes, are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be generally four years. We determined the period of benefit by taking into consideration our customer contracts, our technology and other factors. Amortization of deferred commissions is included in sales and marketing expenses in the accompanying consolidated statements of operations and comprehensive loss.

Deferred Revenue

Deferred revenue consists of billings and payments received in advance of revenue recognition generated by our subscription and support services and professional services and other, as described above.

Cost of Revenue

Cost of subscription revenue consists primarily of our managed hosting provider and other third-party service providers, employee-related costs including payroll, benefits and stock-based compensation expense for our operations and customer support teams, amortization of capitalized software development costs and acquired technology, and allocated overhead costs, which we define as rent, facilities and costs related to information technology, or IT.

Cost of professional services and other revenue consists primarily of personnel costs of our professional services organization, including salaries, benefits, travel, bonuses and stock-based compensation, as well as allocated overhead costs.

Service Availability Warranty

We warrant to our customers: (1) that commercially reasonable efforts will be made to maintain the online availability of the platform for a minimum availability in a trailing 365-day period (excluding scheduled outages, standard maintenance windows, force majeure, and outages that result from any technology issue originating from any customer or user); (2) the functionality or features of the platform may change but will not materially degrade during any paid term; and (3) that support may change but will not materially degrade during any paid term. To date, we have not experienced any significant losses under these warranties.

Advertising Costs

Advertising costs are expensed as incurred and are included in sales and marketing expenses. Advertising expenses totaled $9.4 million, $8.3 million, $5.5 million, and $1.2 million, for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period, respectively.

Stock-Based Compensation

Successor

Before our IPO, we determined the grant date fair value for all unit-based awards granted to employees and nonemployees by using an option-pricing model. As of June 30, 2021, our equity was not publicly traded and there was no history of market prices for our units. Thus, estimating grant date fair value required us to make assumptions, including the value of our equity, expected time to liquidity, and expected volatility. Stock-based compensation costs for granted units were recognized as expense over the requisite service period, which was generally the vesting period for awards, on a straight-line basis for awards with only a service condition. For granted units subject to performance conditions, the Company recorded expense when the performance condition became probable. Forfeitures were accounted for as they occurred.

Subsequent to our IPO in July 2021, we account for all awards granted to employees and nonemployees using a fair value method. Stock-based compensation is recognized as an expense and is measured at the fair value of the award. The measurement date for employee awards is generally the date of the grant. Stock-based compensation costs are recognized as expense over the requisite service period, which is generally the vesting period for awards, on a straight-line basis for awards with only a service condition. Forfeitures are accounted for as they occur.

We use the closing price of our common stock as reported on the New York Stock Exchange for the fair value of restricted stock units ("RSUs") granted.

We use the Black-Scholes option pricing model to determine the fair value of purchase rights issued to employees under our 2021 Employee Stock Purchase Plan ("2021 ESPP"). The Black-Scholes option pricing model is affected by the price of our common stock and a number of assumptions, including the award's expected life, risk-free interest rate, the expected volatility of the underlying stock and expected dividends.

These assumptions are estimated as follows:

- *Fair Value of Our Common Stock.* We rely on the closing price of our common stock as reported by the New York Stock Exchange on the date of grant to determine the fair value of our common stock.
- *Risk-Free Interest Rate.* We base the risk-free interest rate used in the Black-Scholes option pricing model on the implied yield available on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options.
- *Expected Term.* For the 2021 ESPP, we used an expected term of 0.6 years for the first offering period and used an expected term of 0.5 years for subsequent offering periods.
- *Volatility.* For the first offering period, we estimated the price volatility factor based on the historical volatilities of our comparable companies as we did not have a sufficient trading history for our common stock. To determine our comparable companies, we considered public enterprise cloud-based application providers and selected those that were similar to us in size, stage of life cycle, and financial leverage. Beginning with the second offering period we began using the trading history of our own common stock to determine expected volatility.
- *Expected Dividend Yield.* We have not paid and do not expect to pay dividends for the foreseeable future.

Predecessor

For the Predecessor 2020 Period, we accounted for all stock options and awards granted to employees and nonemployees using a fair value method. Stock-based compensation was recognized as an expense and measured at the fair value of the award. The measurement date for employee awards was generally the date of the grant. Stock-based compensation costs were recognized as expense over the requisite service period, which was generally the vesting period for awards, on a straight-line basis for awards with only a service condition. Forfeitures were accounted for as they occurred.

During the Predecessor 2020 Period, we used the then closing price of our common stock as reported on the New York Stock Exchange for the fair value of RSUs granted as at that time our common stock was publicly traded.

During the Predecessor 2020 Period, we used the Black-Scholes option pricing model to determine the fair value of stock options issued to our employees, as well as purchase rights issued to employees under our 2015 Employee Stock Purchase Plan ("2015 ESPP"). The Black-Scholes option pricing model is affected by the price of our common stock and a number of assumptions, including the award's expected life, risk-free interest rate, the expected volatility of the underlying stock and expected dividends.

These assumptions were estimated as follows:

- *Fair Value of Our Common Stock.* We relied on the closing price of our common stock as reported by the New York Stock Exchange on the date of grant to determine the fair value of our common stock.
- *Risk-Free Interest Rate.* We based the risk-free interest rate used in the Black-Scholes option pricing model on the implied yield available on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options.
- *Expected Term.* We estimated the expected term for stock options using the simplified method due to the lack of historical exercise activity for our Company. The simplified method calculated the expected term as the mid-point between the vesting date and the contractual expiration date of the award. For the 2015 ESPP, we used an expected term of 0.5 years to match the offering period.
- *Volatility.* For the first offering period, we estimated the price volatility factor based on the historical volatilities of our comparable companies as we did not have a sufficient trading history for our common stock. To determine our comparable companies, we considered public enterprise cloud-based application providers and select those that are similar to us in size, stage of life cycle, and financial leverage. We applied this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of our own common stock share price became available in connection with our initial IPO (as defined herein). For the remaining offering periods of the 2015 ESPP, we used the trading history of our own common stock to determine expected volatility.
- *Expected Dividend Yield.* We did not pay and did not expect to pay dividends for the foreseeable future.

In connection with the Take-Private Transaction on March 31, 2020, and except for certain executives, outstanding equity awards (including under the 2015 Plan, the Portfolium 2014 Plan and the 2015 ESPP) (each as defined herein), whether vested or unvested, were cancelled and replaced with the right to receive the Cash Replacement Awards (as defined herein).

Business Combinations

We estimate the fair value of assets acquired and liabilities assumed in a business combination. Goodwill as of the acquisition date is measured as the excess of consideration transferred over the net of the acquisition date fair values of the assets acquired and the liabilities assumed. Such valuations require management to make significant estimates and assumptions, especially with respect to intangible assets. Management's estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable, and as a result, actual results may differ from estimates.

Foreign Currency

The functional currency of our foreign subsidiaries is the U.S. dollar. Monetary assets and liabilities denominated in a foreign currency are remeasured into U.S. dollars at the exchange rates in effect at the balance sheet dates. Income and expense accounts are remeasured on the date of the transaction using the exchange rate in effect on the transaction date. Non-monetary assets, liabilities, and equity transactions are converted at historical exchange rates in effect at the time of the transaction. Foreign currency transaction gains and losses are recorded in other income (expense), net on the consolidated statements of operations and comprehensive loss.

Research and Development

With the exception of capitalized software development costs, research and development costs are expensed as incurred.

Risks and Uncertainties

We are subject to all of the risks inherent in an early stage business. These risks include, but are not limited to, a limited operating history, new and rapidly evolving markets, dependence on the development of new services, unfavorable economic and market conditions, changes in level of demand for our services, and the timing of new application introductions. If we fail to anticipate or to respond adequately to technological developments in our industry, changes in customer or supplier requirements, or changes in regulatory requirements or industry standards, or any significant delays in the development or introduction of services, our business could be harmed.

Income Taxes

We use the asset and liability method of accounting for income taxes. Under this method, income tax expense is recognized for the amount of taxes payable or refundable for the current year. In addition, deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial reporting and tax basis of assets and liabilities, and for operating losses and tax credit carryforwards. Management must make assumptions, judgments and estimates to determine our current provision for income taxes and our deferred tax assets and liabilities.

We record a valuation allowance to reduce our deferred tax assets to the net amount that we believe is more likely than not to be realized. Accordingly, the need to establish such allowance is assessed periodically by considering matters such as future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and results of recent operations. The evaluation of recoverability of the deferred tax assets requires that we weigh all positive and negative evidence to reach a conclusion that it is more likely than not that all or some portion of the deferred tax assets will not be realized. The weight given to the evidence is commensurate with the extent to which it can be objectively verified.

In recognizing tax benefits from uncertain tax positions, we assess whether it is more likely than not that the tax position will be sustained on examination by the taxing authorities based on the technical merits of the position. As we expand internationally, we will face increased complexity in determining the appropriate tax jurisdictions for revenue and expense items, and as a result, we may record unrecognized tax benefits in the future. At that time, we would make adjustments to these potential future reserves when facts and circumstances change, such as the closing of a tax audit or the refinement of an estimate. Our estimate of the potential outcome of any uncertain tax position is subject to management's assessment of relevant risks, facts and circumstances existing at that time. To the extent that the final tax outcome of these matters would be different to the amounts we may potentially record in the future, 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.

Recent Accounting Pronouncements

Adopted accounting pronouncements

Effective January 1, 2021, the Company adopted Accounting Standards Update ("ASU") No. 2019-12, Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes, which is intended to simplify the accounting for income taxes by removing certain exceptions to the general principles and also simplification of areas such as franchise taxes, step up in tax basis goodwill, separate entity financial statements and interim recognition of enactment of tax laws or rate changes. The adoption of this guidance did not have a material impact on our consolidated financial statements and related notes.

Effective January 1, 2022, the Company adopted ASU No. 2021-05, Leases (Topic 842): Lessors—Certain Leases with Variable Lease Payments to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing transactions. Upon adoption a lessor is required to classify a lease with variable lease payments (that do not depend on a rate or index) as an operating lease on commencement date if classifying the lease as a sales-type or direct financing lease would result in a selling loss. The adoption of this guidance did not have a material impact on our consolidated financial statements and related notes.

Effective January 1, 2022, the Company adopted ASU No. 2021-01, Reference Rate Reform (Topic 848), which refined the scope of Topic 848 and clarified some of its provisions. The amendments permit entities to elect certain optional expedients and exceptions when accounting for derivative contracts and certain hedging relationships affected by the discounting transition. The adoption of this guidance did not have a material impact on our consolidated financial statements and related notes.

Effective January 1, 2022, the Company adopted ASU No. 2021-08, Business Combinations (Topic 805), which requires that an entity (acquirer) recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with Revenue from Contracts with Customers (Topic 606). The adoption of this guidance did not have a material impact on our consolidated financial statements and related notes.

2. Property and Equipment

Property and equipment consisted of the following (in thousands):

	December 31,	
	2022	2021
Computer and office equipment	$ 5,528	$ 2,668
Capitalized software development costs	8,585	4,591
Furniture and fixtures	1,589	1,325
Leasehold improvements and other	6,970	4,330
Total property and equipment	22,672	12,914
Less accumulated depreciation and amortization	(10,292)	(2,122)
Total	$ 12,380	$ 10,792

Accumulated amortization for capitalized software development costs was $2.4 million and $0.8 million at December 31, 2022 and 2021, respectively. Amortization expense for capitalized software development costs for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period was $1.4 million, $0.7 million, $0.5 million, and $1.8 million, respectively, and is recorded within subscription and support cost of revenue on the consolidated statements of operations and comprehensive loss.

3. Acquisitions and Disposals

2022 Acquisitions

On April 13, 2022, we acquired all outstanding shares of Concentric Sky, Inc. ("Concentric Sky" which was rebranded to "Canvas Credentials" subsequent to acquisition) for the purpose of our continued commitment to building the education industry's most integrated teaching and learning platform to support lifelong learning. $0.5 million of the purchase price was held back for a period of 90 days following the acquisition for working capital adjustments. The amount held back has been paid in full as of December 31, 2022. The acquisition did not have a material effect on our revenue or earnings in the consolidated statements of operations and comprehensive loss for the reporting periods presented. For tax purposes, a 338(h)(10) election was filed to step up the tax basis of assets acquired to fair market value. The conclusions below will remain preliminary until the state tax returns are filed with the respective taxing authorities.

The following table summarizes the preliminary estimated fair values of the consideration transferred, assets acquired and liabilities assumed as of the date of the Canvas Credentials acquisition (in thousands):

Consideration transferred		
Cash paid	$	20,814
Holdback amount		500
Total purchase consideration	$	21,314
Identifiable assets acquired		
Cash	$	1,330
Accounts receivable		1,018
Prepaid expenses and other assets		109
Intangible assets: developed technology		3,900
Intangible assets: customer relationships		9,100
Total assets acquired	$	15,457
Liabilities assumed		
Accounts payable and accrued liabilities	$	1,335
Deferred revenue		2,566
Total liabilities assumed	$	3,901
Goodwill		9,758
Total purchase consideration	$	21,314

On December 15, 2022, we acquired all outstanding shares of LearnPlatform, Inc. ("LearnPlatform") to accelerate the impact of the Instructure learning platform for schools, universities, and shared partner providers by adding evidence-based insight into inventory, compliance, procurement, and usage. $0.2 million of the purchase price was held back for a period of 90 days following the acquisition for working capital adjustments. The acquisition did not have a material effect on our revenue or earnings in the consolidated statements of operations and comprehensive loss for the reporting periods presented. We recorded a provisional net deferred tax liability of $3.4 million in purchase accounting due to the step up in book basis of intangible assets as a result of the stock acquisition. We expect the net deferred tax liability to decrease as book amortization expense is recognized on the acquisition-related intangible assets. The net deferred tax liability will remain provisional until the LearnPlatform tax returns are filed.

The following table summarizes the preliminary estimated fair values of the consideration transferred, assets acquired and liabilities assumed as of the date of the LearnPlatform acquisition (in thousands):

Consideration transferred		
Cash paid	$	93,825
Holdback amount		150
Total purchase consideration	$	93,975
Identifiable assets acquired		
Cash	$	4,297
Accounts receivable		1,306
Prepaid expenses and other assets		373
Right-of-use asset		288
Intangible assets: developed technology		7,600
Intangible assets: customer relationships		28,700
Intangible assets: trade names and trademarks		300
Intangible assets: non-compete agreements		50
Total assets acquired	$	42,914
Liabilities assumed		
Accounts payable and accrued liabilities	$	767
Deferred revenue		6,900
Lease liabilities		288
Deferred tax liabilities		3,407
Total liabilities assumed	$	11,362
Goodwill		62,423
Total purchase consideration	$	93,975

2021 Acquisitions

On June 28, 2021, we acquired all outstanding shares of Eesysoft Software International B.V. ("Eesysoft" which was rebranded to "Impact by Instructure" or "Impact" subsequent to acquisition) for the purpose of enhancing our ability to help our customers more effectively use our core products. $1.5 million of the purchase price has been paid over a period of 18 months following the closing of the transaction and has been paid in full as of December 31, 2022. The acquisition did not have a material effect on our revenue or earnings in the consolidated statements of operations and comprehensive loss for the reporting periods presented. On June 28, 2021, the Company recorded an increase to the Impact deferred tax liability of $0.7 million in purchase accounting due to a step up in book basis of intangible assets as a result of the stock acquisition. We expect the net deferred tax liability to decrease as book amortization expense is recognized on the acquisition-related intangible assets.

The final allocation of the purchase price was as follows (in thousands):

Consideration transferred		
Cash paid	$	17,472
Deferred consideration		1,500
Total purchase consideration	$	18,972
Identifiable assets acquired		
Cash	$	586
Accounts receivable		624
Deposits		9
Intangible assets: developed technology		3,300
Intangible assets: customer relationships		1,700
Total assets acquired	$	6,219
Liabilities assumed		
Accounts payable and accrued liabilities	$	49
Deferred revenue		692
Payroll tax liability		91
Deferred tax liability		672
Lease liability		24
Total liabilities assumed	$	1,528
Goodwill		14,281
Total purchase consideration	$	18,972

On November 5, 2021, we acquired all outstanding shares of Kimono LLC ("Kimono" which was rebranded to "Elevate Data Sync" subsequent to acquisition) for the purpose of enhancing our ability to help our customers more effectively synchronize data between our core product applications and student information systems ("SIS"). $0.4 million of the purchase price was held back for a period of 90 days following the acquisition for working capital adjustments. The amount held back has been paid in full as of December 31, 2022. The acquisition did not have a material effect on our revenue or earnings in the consolidated statements of operations and comprehensive loss for the reporting periods presented. For tax purposes, a 338(h)(10) election was filed to step up the tax basis of assets acquired to fair market value.

The final allocation of the purchase price was as follows (in thousands):

Consideration transferred		
Cash paid	$	11,021
Holdback amount		350
Total purchase consideration	$	11,371
Identifiable assets acquired		
Cash and cash equivalents	$	1,324
Accounts receivable, net		336
Prepaid expenses		66
Intangible assets: developed technology		2,200
Intangible assets: customer relationships		1,200
Total assets acquired	$	5,126
Liabilities assumed		
Accounts payable and accrued liabilities	$	174
Deferred revenue		515
Other liabilities		25
Total liabilities assumed	$	714
Goodwill		6,959
Total purchase consideration	$	11,371

For all periods presented, the excess of purchase consideration over the fair value of net tangible and identifiable intangible assets acquired was recorded as goodwill, of which $16.7 million is expected to be deductible for tax purposes, comprised of $9.7 million from the Canvas Credentials acquisition and $7.0 million from the Elevate Data Sync acquisition. The goodwill generated from all transactions is attributable to the expected synergies to be achieved upon consummation of the business combinations and the assembled workforce values. The fair values assigned to tangible and identifiable intangible assets acquired and liabilities assumed are based on management's estimates and assumptions. Developed technology represents the estimated fair value of the acquired existing technology and is being amortized over its estimated useful life of five years. Amortization of developed technology is included in subscription and support cost of revenue expenses in the accompanying consolidated statements of operations and comprehensive loss. Customer relationships represent the estimated fair value of the acquired customer bases and are amortized over the estimated useful life of seven years. The trade names acquired are amortized over the estimated useful life of one to ten years. Amortization of customer relationships and trade names is included in sales and marketing expenses in the accompanying consolidated statements of operations and comprehensive loss.

Sale of getBridge LLC ("Bridge")

On February 26, 2021, the Company sold Bridge, its corporate learning platform and wholly-owned subsidiary, for a total purchase price of $47.0 million. We received cash proceeds net of transaction costs of $46.0 million. The proceeds from this sale were used to pay down the balance of our then outstanding Term Loan (as defined in Note 5—Credit Facility). During the Successor 2020 Period, we recognized an impairment of goodwill in the amount of $29.6 million at the time we measured the assets and liabilities as held for sale. During the year ended December 31, 2021 and Successor 2020 Period, we recognized a pretax loss on this divestiture of $1.2 million and $10.2 million, respectively, which is included in operating expenses in the accompanying consolidated statements of operations and comprehensive loss.

4. Goodwill and Intangible Assets

Goodwill activity was as follows (in thousands):

		Total
Balance as of December 31, 2021	$	1,194,221
Additions (Note 3 - Acquisitions and Disposals)		72,181
Balance as of December 31, 2022	$	1,266,402

Intangible assets consisted of the following (in thousands):

	Weighted-Average Remaining Useful Life	December 31, 2022			December 31, 2021		
		Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Software	3 Months	$ 21	$ (20)	$ 1	$ 21	$ (13)	$ 8
Trade names	85 Months	126,100	(35,936)	90,164	125,800	(22,809)	102,991
Developed technology	31 Months	325,300	(167,600)	157,700	313,800	(104,215)	209,585
Customer relationships	56 Months	451,400	(156,635)	294,765	413,600	(96,438)	317,162
Non-competition agreements	36 Months	50	(1)	49	—	—	—
Total		$ 902,871	$ (360,192)	$ 542,679	$ 853,221	$ (223,475)	$ 629,746

Amortization expense for intangible assets was $136.7 million, $134.0 million, $95.3 million, and $2.6 million, for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period, respectively. On February 26, 2021, the Company sold Bridge, as described further in Note 3—Acquisitions and Disposals. In conjunction with the sale, $5.8 million of accumulated amortization was written off due to disposal of Bridge's intangible assets.

Based on the recorded intangible assets at December 31, 2022, estimated amortization expense is expected to be as follows (in thousands):

Years Ending December 31,		Amortization Expense
2023	$	142,952
2024		142,442
2025		99,729
2026		79,625
2027		40,686
Thereafter		37,245
Total	$	542,679

5. Credit Facility

On March 24, 2020, we entered into a credit agreement with a syndicate of lenders and Golub Capital Markets LLC, as administrative agent and collateral agent, and Golub Capital Markets LLC and Owl Rock Capital Advisors LLC, as joint bookrunners and joint lead arrangers (the "Credit Agreement"). The Credit Agreement provided for a senior secured term loan facility (the "Initial Term Loan") in an original aggregate principal amount of $775.0 million, which was supplemented by an incremental term loan pursuant to the First Incremental Amendment and Waiver to Credit Agreement, dated as of December 22, 2020, in a principal amount of $70.0 million (the "Incremental Term Loan" and, together with the Initial Term Loan, the "Term Loan"). The maturity date for the Term Loan was March 24, 2026, with the remaining principal due in full on the maturity date. The Credit Agreement also provided for a senior secured revolving credit facility in an aggregate principal amount of $50.0 million (the "Revolving Credit Facility" and, together with the Term Loan, the "Credit Facilities"). The Revolving Credit Facility included a $10.0 million sublimit for the issuance of letters of credit.

The Credit Agreement required us to repay the principal of the Term Loan in equal quarterly repayments equal to 0.25% of the aggregate original principal amount of the Term Loan, reduced as a result of the application of prepayments. Further, until the last day of the quarter ending June 30, 2021, the Credit Facilities bore interest at a rate equal to (i) 6.00% plus the highest of (x) the prime rate (as determined by reference to the Wall Street Journal), (y) the Federal funds open rate plus 0.50% per annum, and (z) a daily Eurodollar rate based on an interest period of one month plus 1.00% per annum or (ii) the Eurodollar rate plus 7.00% per annum, subject to a 1.00% Eurodollar floor. Thereafter, on the last day of each of the five full fiscal quarters, we had the option (a "Pricing Grid Election") to (i) retain the aforementioned applicable margins or (ii) switch to the applicable margins set forth on a pricing grid which, subject to certain pro forma total net leverage ratio limits, provided for applicable margins ranging from 5.50% to 7.00%, in the case of Eurodollar loans, and 4.50% to 6.00% in the case of ABR Loans (as defined in the Credit Agreement). The applicable margins set forth on the pricing grid would become mandatory beginning on the last day of the tenth full fiscal quarter ending after March 24, 2020. Interest payments were due quarterly, or more frequently, based on the terms of the Credit Agreement.

On May 27, 2021, the Company exercised its option to make a Pricing Grid Election. As a result, the Company's applicable margin for Eurodollar loans under the Credit Facilities from May 27, 2021 onward was 5.5%. In connection with the Company's IPO, the Company made a principal prepayment in August 2021 of $224.3 million on its outstanding Term Loan. In connection with the underwriters' partial exercise of their over-allotment option in August 2021, the Company made an additional principal prepayment in August 2021 of $30.8 million on its outstanding Term Loan. The Company also incurred a 1.5% prepayment premium in conjunction with each principal prepayment.

The Company incurred fees with respect to the Revolving Credit Facility, including a commitment fee of 0.50% per annum of unused commitments under the Revolving Credit Facility.

On October 29, 2021, we entered into a credit agreement (the "2021 Credit Agreement") with JPMorgan Chase Bank, N.A. ("JPMorgan"), as administrative agent, governing our senior secured credit facilities (the "Senior Secured Credit Facilities"), consisting of a $500.0 million senior secured term loan facility (the "Senior Term Loan") and a $125.0 million senior secured revolving credit facility (the "Senior Revolver"). The proceeds from the Senior Secured Credit Facilities were used, in addition to cash on hand, (1) to refinance, in full, all existing indebtedness under the Credit Agreement (the "Refinancing"), (2) to pay certain fees and expenses incurred in connection with the entry into the 2021 Credit Agreement and the Refinancing, and (3) to finance working capital needs of the Company and its subsidiaries for general corporate purposes.

All of the Company's obligations under the Senior Secured Credit Facilities are guaranteed by the subsidiary guarantors named therein (the "Subsidiary Guarantors"). The Senior Revolver includes a $10.0 million sublimit for the issuance of letters of credit. Any issuance of letters of credit will reduce the amount available under the Senior Revolver. As of December 31, 2022, we had no outstanding borrowings under our Senior Revolver.

The Senior Term Loan has a seven-year maturity and the Senior Revolver has a five-year maturity. We are required to repay the Senior Term Loan portion of the Senior Secured Credit Facilities in quarterly principal installments of 0.25% of the aggregate original principal amount of the Senior Term Loan at closing, with the balance payable at maturity. Borrowings under the Senior Secured Credit Facilities bear interest, at the Company's option, at: (i) Base Rate equal to the greater of (a) the Federal Funds Rate plus 1/2 of 1.00%, (b) the rate of interest in effect for such day as publicly announced from time to time by the administrative agent as its "prime rate," (c) a Eurocurrency Rate for such date plus 1.00% and (d) 1.00%; or (ii) the Eurocurrency Rate (provided that the Eurocurrency Rate applicable to the Senior Term Loan shall not be less than 0.50% per annum). The Applicable Rate for the Senior Term Loan with respect to Eurocurrency Rate Loans is 2.75% per annum and 1.75% per annum for Base Rate Loans. The Applicable Rate for the Senior Revolver with respect to Eurocurrency Rate Loans, SONIA Loans, and Alternative Currency Term Rate Loans ranges from 2.00% to 2.5% subject to the Company's Consolidated First Lien Net Leverage Ratio, while the Applicable Rate for Base Rate Loans ranges from 1.00% to 1.50% subject to the Company's Consolidated First Lien Net Leverage Ratio. We are also required to pay an unused commitment fee to the lenders under the Senior Revolver at the Applicable Commitment Fee of the average daily unutilized commitments. The Applicable Commitment Fee ranges from 0.40% to 0.50% subject to the Company's Consolidated First Lien Never Leverage Ratio.

The 2021 Credit Agreement contains a financial covenant solely with respect to the Senior Revolver. If the outstanding amounts under the Senior Revolver exceed 35% of the aggregate amount of the Senior Revolver commitments, we are required to maintain at the end of each fiscal quarter, commencing with the quarter ending June 30, 2022, a Consolidated Net Leverage Ratio of not more than 7.75 to 1.00. As of December 31, 2022, there was no amount outstanding under the Senior Revolver. The Company had $125.0 million of availability under the Senior Revolver as of December 31, 2022.

Debt discount costs of $13.6 million were incurred in connection with the Term Loan. An additional $3.8 million of debt discount costs were incurred after the IPO in August 2021 in connection with the prepayment premium associated with the Term Loan as the prepayments were treated as modifications for accounting purposes. These debt discount costs were being amortized into interest expense, as set forth in the consolidated statements of operations and comprehensive loss, over the contractual term of the Term Loan. As a result of the Refinancing in the fourth quarter of 2021, the Company wrote off the remaining $13.8 million of debt discount costs related to the Credit Facilities to loss on debt extinguishment in the consolidated statements of operations and comprehensive loss. Additionally, as a result of the Refinancing, the Company capitalized $1.0 million and $5.9 million of debt discount costs incurred in connection with the Senior Term Loan in long-term debt, current and long-term debt, net of current portion, respectively, on the consolidated balance sheets. The Company recognized $1.0 million, $2.3 million and $1.4 million of amortization of debt discount costs for the year ended December 31, 2022, the year ended December 31, 2021, and the Successor 2020 Period, respectively, which is recorded as interest expense in the accompanying consolidated statements of operations and comprehensive loss. At December 31, 2022 and 2021, the Company had an aggregate principal amount outstanding of $496.3 million and $500.0 million, respectively, under the Senior Term Loan, bearing interest at 6.12% and 3.25%, respectively. The Company had $5.8 million and $6.7 million of unamortized debt discount costs at December 31, 2022 and 2021, respectively, which is recorded as a reduction of the debt balance on the Company's consolidated balance sheets.

Debt issuance costs of $0.7 million were incurred in connection with the Revolving Credit Facility. These debt issuance costs were being amortized into interest expense, as set forth in the consolidated statements of operations and comprehensive loss, over the contractual term of the Revolving Credit Facility. As a result of the Refinancing, the Company wrote off the remaining $0.5 million of debt issuance costs related to the Credit Facilities to loss on debt extinguishment in the consolidated statements of operations and comprehensive loss. Additionally, as a result of the Refinancing, the Company capitalized $0.2 million and $0.8 million of deferred issuance costs incurred in connection with the Senior Revolver in other current assets and other assets, respectively, on the consolidated balance sheets. The Company recognized $0.2 million, $0.1 million and $0.1 million of amortization of debt issuance costs for the year ended December 31, 2022, the year ended December 31, 2021, and the Successor 2020 Period, respectively, which is included in the accompanying consolidated statements of operations and comprehensive loss. There were $0.2 million and $0.2 million, respectively, of unamortized debt issuance costs in other current assets on the Company's consolidated balance sheets as of December 31, 2022 and 2021, and $0.5 million and $0.7 million, respectively, of unamortized debt issuance costs included in other assets on the Company's consolidated balance sheets at December 31, 2022 and 2021.

In connection with the Refinancing, the Company was also required to pay a 1.5% prepayment premium under the Credit Facilities totaling $8.1 million. Due to the Refinancing being treated as an extinguishment for accounting purposes, the prepayment premium was recorded to loss on extinguishment of debt on the consolidated statements of operations and comprehensive loss.

The Senior Secured Credit Facilities contain customary negative covenants. At December 31, 2022, the Company was in compliance with all applicable covenants pertaining to the Senior Secured Credit Facilities. The Company also maintained compliance with all applicable covenants pertaining to the Credit Facilities prior to the Refinancing.

The maturities of outstanding debt, as of December 31, 2022, are as follows (in thousands):

Years Ending December 31,	Amount
2023	$ 5,000
2024	5,000
2025	5,000
2026	5,000
2027	5,000
Thereafter	471,250
Total	$ 496,250

6. Revenue

We have one operating segment, which is our cloud-based learning, assessment, development and engagement systems. Historically, we had primarily generated revenues from two customer bases, Education and Corporate. Education customers consist of K-12 and Higher Education institutions that purchase our Canvas Learning Management System ("LMS"), which includes assessments, analytics and learning content. Corporate customers purchased our Bridge product, the Company's corporate learning platform, which included a learning management system and performance platform that helped employees and managers transform their organization through connection, alignment, and growth. Following the sale of Bridge, the Company no longer receives revenues from Corporate customers. The following tables present the Company's disaggregated revenues based on its two customer bases and by geographic region, based on the physical location of the customer (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Education	$ 475,194	$ 401,699	$ 217,963	$ 65,564
Corporate	—	3,662	12,710	5,825
Total revenue	$ 475,194	$ 405,361	$ 230,673	$ 71,389
Percentage of revenue generated by Education	100%	99%	94%	92%

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
United States	$ 376,694	$ 325,998	$ 186,612	$ 56,850
Foreign	98,500	79,363	44,061	14,539
Total revenue	$ 475,194	$ 405,361	$ 230,673	$ 71,389
Percentage of revenue generated outside of the United States	21%	20%	19%	20%

Deferred Revenue and Performance Obligations

During the year ended December 31, 2022, 51% of revenue recognized was included in our deferred revenue balance at December 31, 2021.

Transaction Price Allocated to the Remaining Performance Obligations

As of December 31, 2022, approximately $760.1 million of revenue is expected to be recognized from remaining performance obligations. We expect to recognize revenue on approximately 75% of these remaining performance obligations over the next 24 months, with the balance recognized thereafter.

7. Deferred Commissions

Deferred commissions primarily consist of sales commissions that are capitalized as incremental contract origination costs and were $32.2 million and $31.5 million as of December 31, 2022 and 2021 respectively. For the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period, amortization expense for deferred commissions was $16.1 million, $10.9 million, $5.7 million, and $3.4 million, respectively, and there was no impairment of deferred commissions during these periods.

8. Stockholders' Equity

The TopCo Amended and Restated Partnership Agreement ("Partnership Agreement") set forth the terms, rights, powers, qualifications, limitations and restrictions of the partnership. In accordance with the Partnership Agreement, there was an unlimited number of authorized Class A Units and Class B Units (collectively, the "Units") and issuance of such Units was determined by the board of managers.

In connection with the Take-Private Transaction, TopCo issued 1,250,000 Class A Units and 90,000,000 Class B Units, with no par values, for the cash paid by Thoma Bravo and its affiliated funds. Units shared in distributions according to a "waterfall" which provided for distributions to be made in the following order and priority: (1) first, to the holders of Class A Units until they received a 9% annual return on their remaining unreturned capital contributions, compounded quarterly; (2) second, to the holders of Class A Units until they received an amount equal to their respective capital contributions on a pro rata basis; and (3) third, to the holders of the remaining Class B Units based on their percentage of ownership, taking into account any applicable vesting terms and participation threshold on the Class B Units. A participation threshold in respect of a Class B Unit was determined at the time of issuance or grant and was equal to or greater than the amount payable in respect of a Class B Unit having a participation threshold of zero pursuant to the waterfall in a hypothetical liquidation of TopCo at the value of TopCo as of immediately prior to such issuance or grant. No conversion or redemption rights are associated with Class A or Class B Units. In connection with the IPO, TopCo effected a series of transactions that resulted in TopCo's equityholders holding shares of our common stock directly, and then TopCo being liquidated and dissolved.

In connection with the Take-Private Transaction, the Successor's board of directors authorized 2,000 shares of common stock with a par value of $0.01. Common stock issued and outstanding as of July 9, 2021, prior to the stock split and December 31, 2020 were 998.10 and 999.84, respectively. No other shares were issued. Refer to Note 1—Description of Business and Basis of Presentation for additional information regarding the Company's capital structure. As a result of the stock split on July 9, 2021, common shares issued and outstanding as of December 31, 2022 and 2021 were 142,917,080 and 140,740,569, respectively.

9. Stock-Based Compensation

Employee Equity Plans

The following two tables show stock-based compensation by award type and where the stock-based compensation expense was recorded in our consolidated statements of operations and comprehensive loss (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Options [1]	$ 680	$ 132	$ 1,706	$ 367
Restricted stock units	36,913	19,586	39,731	6,076
Employee stock purchase plan	2,186	1,165	—	666
Class A and Class B units	—	4,902	8,725	—
Total stock-based compensation	$ 39,779	$ 25,785	$ 50,162	$ 7,109

(1) For the year ended December 31, 2022, approximately $658 thousand is due to the acceleration and settlement of options from the LearnPlatform 2014 Stock Incentive Plan that was not included in consideration transferred. The amounts were settled in cash and the LearnPlatform 2014 Stock Incentive Plan was terminated on the date of acquisition.

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Subscription and support cost of revenue	$ 1,348	$ 899	$ 1,020	$ 301
Professional services and other cost of revenue	1,742	959	687	285
Sales and marketing	11,050	6,936	7,580	1,977
Research and development	11,467	6,943	9,903	1,874
General and administrative	14,172	10,048	30,972	2,672
Total stock-based compensation	$ 39,779	$ 25,785	$ 50,162	$ 7,109

In connection with the Take-Private Transaction on March 31, 2020, and except for certain executives, outstanding stock options and restricted stock units ("RSUs", and together with the stock options, "equity awards"), whether vested or unvested, were cancelled and replaced with the right to receive $49.00 per share in cash, less the applicable exercise price per share and applicable withholding taxes (the "per share price"), with respect of each share of common stock underlying such award ("Cash Replacement Awards"). The per share price attributed to the unvested equity awards will vest and be payable at the same time such equity awards would have vested pursuant to their original terms prior to the replacement. During the year ended December 31, 2022, the year ended December 31, 2021, and Successor 2020 Period, the Company recognized $5.5 million, $7.6 million and $41.4 million of stock-based compensation expense associated with the Cash Replacement Awards, respectively.

Successor

In July 2021, the board of directors adopted the Instructure Holdings, Inc. 2021 Omnibus Incentive Plan (the "2021 Plan") in order to promote the success of the Company's business for the benefit of its stockholders by enabling the Company to offer eligible individuals cash and stock-based incentives in order to attract, retain, and reward such individuals and strengthen the mutuality of interests between such individuals and the Company's stockholders. The 2021 Plan provides for potential grants of the following awards with respect to shares of the Company's common stock: (i) incentive stock options qualified as such under U.S. federal income tax laws; (ii) non-qualified stock options or any other form of stock options; (iii) restricted stock units; (iv) performance awards; (v) other equity-based and cash-based incentive awards as determined by the Committee (meaning any committee of the board of directors duly authorized by the board of directors to administer the 2021 Plan). The maximum aggregate number of shares of the Company's common stock that may be issued pursuant to awards under the 2021 Plan is 18,000,000 shares (the "Plan Share Reserve"), and is subject to increase. The 2021 Plan contains a provision that will add an additional number of shares of common stock to the Plan Share Reserve on the first day of each year starting with January 1, 2022, equal to the lesser of (i) the positive difference between (x) 4% of the outstanding common stock on the last day of the immediately preceding year, and (y) the Plan Share Reserve on the last day of the immediately preceding year, and (ii) a lower number of shares of common stock as may be determined by the board of directors. As of December 31, 2022, there were 16,160,491 shares remaining in the Plan Share Reserve.

On July 21, 2021, the board of directors granted 1,698,950 RSUs to employees and certain members of the board of directors under the 2021 Plan. Each RSU entitles the recipient to receive one share of the Company's common stock upon vesting. The RSUs are subject to time-based service requirements and generally vest over four years with one quarter of the RSUs vesting on the first anniversary of the vesting commencement date and then one sixteenth vesting quarterly thereafter with vesting commencement dates generally ranging from March 2021 to September 2021. The aggregate fair value of the RSUs granted on the date of the IPO was the IPO price for the underlying common stock of the Company, or $20.00, and totaled $34.0 million.

During the year ended December 31, 2022, we granted 2,880,506 RSUs to employees under the 2021 Plan. Each RSU entitles the recipient to receive one share of the Company's common stock upon vesting. The RSUs are subject to time-based service requirements and generally vest over a four-year service period. The grant date fair values of the RSUs granted during the year ended December 31, 2022 ranged from $17.59 to $24.72, which represent the closing stock price for the underlying common stock on the respective grant dates, with an aggregate fair value of $62.7 million.

Restricted Stock Units

Restricted Stock Unit activity on or after the IPO date was as follows during the periods indicated, presented for awards granted to employees and members of the board of directors for the year ended December 31, 2022 and the year ended December 31, 2021 (in thousands, except per share amounts):

	RSUs Outstanding	
	RSUs	**Weighted-Average Grant Date Fair Value Per Share**
Unvested and outstanding at January 1, 2021	—	$ —
Granted	2,250	20.91
Vested	(23)	21.21
Forfeited or cancelled	(240)	20.14
Unvested and outstanding at December 31, 2021	1,987	$ 21.00
Granted	2,881	21.77
Vested	(876)	21.04
Forfeited or cancelled	(555)	21.23
Unvested and outstanding at December 31, 2022	3,437	$ 21.60

As of December 31, 2022, total unrecognized compensation cost related to unvested RSUs granted on or after the IPO date amounted to $68.3 million, which is expected to be recognized over a weighted average period of 3.1 years.

Incentive Units

In April 2020, as part of the Take-Private Transaction, the board of managers approved the Instructure Parent, LP Incentive Equity Plan (the "2020 Plan") and the Instructure Co-Invest Agreement (the "Co-Invest Agreement") to incentivize employees and to align the employees and management with the owners of the business.

The 2020 Plan provided for the grant of incentive stock options, profits interest, equity appreciation rights and other forms of awards to employees and non-employees granted or denominated in shares of the TopCo's Units. Under the 2020 Plan, 10,000,000 Class B Units ("Incentive Units") were reserved for issuance ("Incentive Carry") and do not have a contractual life. Incentive Carry grants were subject to a service and a performance vesting condition based on the achievement of an EBITDA target as established by the Company's board of managers, over a performance period of four years.

The Co-Invest Agreement offered employees the one-time opportunity to co-invest in TopCo by purchasing Units directly from the Company for cash. Under the Co-Invest agreement, the purchase price for one Class A unit and 72 Class B units was $1,000, which was the same investment allocation between the two unit classes as the investment made by existing investors at the time of the Take-Private Transaction. The minimum cash investment was $2,500. Any consideration received in excess of the investment was recognized as stock-based compensation in the consolidated statements of operations and comprehensive loss.

Additionally, TopCo granted 480,000 Incentive Units to certain members of the board of managers that were only subject to service-based vesting conditions over four years ("Board Carry"). These Incentive Units are not included in the Incentive Carry pool previously discussed and there is no contractual life.

In connection with the stock-split and IPO, 2,271,698 Incentive Units that were vested as of the IPO date converted to 1,305,738 shares of the Company's common stock and were released to the Unit holders, and 6,126,802 Incentive Units unvested as of the IPO date were exchanged for 3,496,739 RSUs under the 2021 Plan. The RSUs will generally vest in 11 equal quarterly installments commencing September 1, 2021. In connection with this conversion, the Company will incur incremental stock-based compensation expense of $12.4 million, which will be recognized over the remaining vesting period of the awards.

The following table summarizes the activity under the 2020 Plan, inclusive of the Incentive Carry and Board Carry, and their conversion into RSUs under the 2021 Plan for the year ended December 31, 2022 and the year ended December 31, 2021 (in thousands, except per unit amounts):

	RSUs - Pre IPO	Weighted Average Grant Date Fair Value Per Unit
Outstanding Incentive Units at December 31, 2020	8,666	$ 4.03
Incentive Units granted	—	—
Incentive Units forfeited or cancelled	(268)	4.09
Incentive Units vested at IPO	(2,271)	4.04
Incentive Units exchanged for RSUs	(6,127)	—
Incentive Units after IPO	—	—
RSUs exchanged from Incentive Units	3,497	—
RSUs forfeited or cancelled	(150)	11.06
RSUs vested	(611)	10.00
Unvested and outstanding at December 31, 2021	2,736	$ 10.75
Vested	(1,112)	10.77
Forfeited or cancelled	(215)	11.24
Unvested and outstanding at December 31, 2022	1,409	$ 10.72

The following table summarizes the assumptions relating to our Incentive Units used in the option pricing model to establish the grant date fair value for the Successor Period from April 1, 2020 to December 31, 2020:

	Period from April 1 to December 31, 2020
Dividend yield	None
Volatility	60%
Risk-free interest rate	0.3%
Expected life (years)	4.3-4.7

There were no Incentive Units granted subsequent to December 31, 2021. As of December 31, 2022 we had $14.2 million of unrecognized stock-based compensation expense related to unvested Incentive Units exchanged for RSUs that are expected to be recognized over a weighted-average period of 1.3 years.

2021 Employee Stock Purchase Plan

In July 2021, our board of directors adopted, and our stockholders approved, the 2021 ESPP. The 2021 ESPP became effective upon the closing of our IPO and provides for the grant of rights to purchase shares of our common stock. The 2021 ESPP initially reserved 1,900,000 shares of common stock under the plan, which automatically increases on January 1 of each calendar year, beginning on January 1, 2022 and continuing through and including January 1, 2031 by an amount equal to 1% of the shares outstanding on December 31 of the immediately preceding calendar year, or a lesser number of shares as is determined by the board of directors. As of December 31, 2022, 2,889,878 shares were reserved for future purchases under the 2021 ESPP. The plan allows eligible employees to purchase shares of our common stock at a discount through payroll deductions of up to 15% of their eligible compensation, subject to any plan limitations. The initial offering consisted of one offering period, which ended on February 28, 2022. After the initial offering ended, a new offering period began on the March 1, 2022, which was designated by the board of directors. Each new offering will begin on or about March 1 and September 1 and will be approximately six months in duration. On each purchase date, eligible employees will purchase our common stock at a price per share equal to 85% of the lesser of (1) the fair market value of our common stock on the offering date or (2) the fair market value of our common stock on the purchase date.

The following table summarizes the assumptions relating to 2021 ESPP purchase rights used in a Black-Scholes option pricing model for the years ended December 31, 2022 and 2021:

	Year ended December 31,	
	2022	2021
Dividend yield	None	None
Volatility	32 - 47%	47%
Risk-free interest rate	0.06 - 3.34%	0.06%
Expected life (years)	0.5 - 0.6	0.6

Predecessor

In August 2015, the board of directors adopted the 2015 Equity Incentive Plan (the “2015 Plan”) and our stockholders approved the 2015 Plan in October 2015. The 2015 Plan became effective in connection with the Predecessor's first initial public offering (the “initial IPO”) and provided for the grant of incentive stock options, nonqualified options, restricted stock units, stock appreciation rights, and shares of restricted stock. The 2015 Plan also provided that the number of shares reserved and available for issuance under the plan automatically increased each January 1, beginning on January 1, 2016 and continuing through and including January 1, 2025, by 4.5% of the total number of shares of our capital stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares determined by our board of directors. This number was subject to adjustment in the event of a stock split, stock dividend or other change in our capital structure.

Additionally, as part of our acquisition of Portfolium, we assumed the Portfolium 2014 Plan. No shares are available for issuance under the Portfolium 2014 Plan.

The board of directors determined the terms of each grant. Generally, options have a vesting period ranging from one to four years. Stock options have a ten-year contractual life. Certain stock options had provisions to accelerate vesting upon the occurrence of certain events such as a change in control. Certain stock options provided for early exercise of unvested shares. All options were granted with an exercise price equal to or greater than the estimated fair value of our common stock at the date of grant. The fair value of the common stock that underlies the stock options has historically been determined by the board of directors based, in part, upon periodic valuation studies obtained from a third-party valuation firm. After the initial IPO and prior to the Take-Private Transaction, the fair value was determined by the then closing price of our common stock as reported on the New York Stock Exchange on the date of grant. There were no grants between the Take-Private Transaction and the date we were de-listed from the New York Stock Exchange.

In August 2015, our board of directors adopted the 2015 ESPP. Our stockholders approved the 2015 ESPP in October 2015, which became effective on the closing date of the initial IPO. A total of 333,333 shares of our common stock were initially reserved for issuance under the 2015 ESPP. The number of shares reserved for issuance increased automatically each year, beginning January 1, 2016 through and including January 1, 2025 by the lesser of 1% of the total number of shares of our common stock outstanding on December 31 of the preceding calendar year; 333,333 shares of common stock; or such lesser number as determined by our board of directors. The plan allowed eligible employees to purchase shares of our common stock at a discount through payroll deductions of up to 15% of their eligible compensation, subject to any plan limitations. Our board of directors approved the 2015 ESPP offerings. Each offering did not to be identical, but could not exceed 27 months and could specify one or more shorter purchase periods within the offering.

On each purchase date, eligible employees could purchase our stock at a price per share equal to 85% of the lesser of (1) the fair market value of our stock on the offering date or (2) the fair market value of our stock on the purchase date. As of January 1, 2020, 602,094 shares were reserved for future issuance under the 2015 ESPP. No shares of common stock were issued during the Successor 2020 Period.

In connection with the Take-Private Transaction on March 24, 2020, and except for certain executives, outstanding equity awards (including under the 2015 Plan, the Portfolium 2014 Plan and the 2015 ESPP), whether vested or unvested, were cancelled and replaced with the right to receive the Cash Replacement Awards.

The following table summarizes the assumptions relating to our stock options and 2015 ESPP purchase rights used in a Black Scholes option pricing model for the Predecessor 2020 Period.

	Period from January 1 to March 31, 2020
Employee Stock Purchase Plan	
Dividend yield	None
Volatility	29.69%
Risk-free interest rate	1.62%
Expected life (years)	0.5
Fair value of common stock	$52.52

The Company did not grant any employee stock options during the Predecessor 2020 Period.

The following table summarizes the stock option activity for the Predecessor 2020 Period (in thousands, except per share amounts):

	Shares Underlying Options	Weighted-Average Exercise Price	Weighted-Average Remaining Life (in years)	Aggregate Intrinsic Value
Outstanding at January 1, 2020	601	$ 18.25	6.2	$ 17,992
Granted	—	—		
Exercised	(131)	8.16		5,297
Forfeited or cancelled	—	12.24		13
Outstanding at March 31, 2020	470	21.07	3.2	13,113
Vested and expected to vest - March 31, 2020	470	21.07	3.2	13,113
Exercisable at March 31, 2020 [(1)]	343	$ 16.84	3.6	$ 11,033

(1) Options were exchanged for rights to receive $49.00 per share in cash, less applicable exercise price, on March 31, 2020 upon consummation of the Take-Private Transaction.

The following table summarizes the activity of our unvested stock options for the Predecessor 2020 Period (in thousands, except per share amounts):

	Shares Underlying Options	Weighted-Average Grant Date Fair Value Per Share
Unvested at December 31, 2019	159	17.92
Granted	—	—
Vested	(32)	16.05
Forfeited	—	—
Unvested at March 31, 2020 [(1)]	127	$ 18.38

(1) Options were exchanged for rights to receive $49.00 per share in cash, less applicable exercise price, on March 31, 2020 upon consummation of the Take-Private Transaction.

The total intrinsic value of options exercised was $5.3 million during the Predecessor 2020 Period. The total fair value of options vested during the Predecessor 2020 Period was $0.5 million.

The activity for RSUs for the Predecessor 2020 Period is as follows (in thousands, except per share amounts):

	RSUs Outstanding	
	Shares	Weighted Average Grant Date Fair Value Per Share
Unvested and outstanding at December 31, 2019	2,584	$ 40.38
Granted	5	48.27
Vested	(233)	36.97
Cancelled	(240)	38.90
Unvested and outstanding at March 31, 2020 [(1)]	2,116	

(1) Options were exchanged for rights to receive $49.00 per share in cash, less applicable exercise price, on March 31, 2020 upon consummation of the Take-Private Transaction.

10. Income Taxes

Income (loss) before provision (benefit) for income taxes was as follows (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
United States	$ (46,281)	$ (124,654)	$ (227,483)	$ (21,003)
Foreign	3,907	2,256	5,578	(1,017)
Total	$ (42,374)	$ (122,398)	$ (221,905)	$ (22,020)

The components of the provision (benefit) for income taxes were as follows (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Current:				
Federal	$ —	$ —	$ —	$ —
State	370	2,200	96	23
Foreign	1,741	694	1,022	—
Total	2,111	2,894	1,118	23
Deferred:				
Federal	(6,950)	(24,611)	(38,422)	1
State	(2,229)	(5,367)	(6,651)	(1)
Foreign	(1,064)	(6,635)	31	160
Total	(10,243)	(36,613)	(45,042)	160
Provision (benefit) for income taxes	$ (8,132)	$ (33,719)	$ (43,924)	$ 183

The following reconciles the differences between income taxes computed at the federal statutory rate of 21% and the provision for income taxes (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Expected income tax benefit at the federal statutory rate	$ (8,899)	$ (25,703)	$ (46,598)	$ (4,615)
State tax net of federal benefit	(1,170)	(4,565)	(7,417)	(2,280)
Stock-based compensation	822	1,277	1,843	(3,565)
Impairment for held-for-sale goodwill	—	—	6,219	—
Difference in foreign tax rates	(1,683)	615	55	250
Research and development credits	381	—	—	(762)
Change in valuation allowance	1,609	(6,385)	652	12,953
Other	808	1,042	1,322	(1,798)
Income tax provision (benefit)	$ (8,132)	$ (33,719)	$ (43,924)	$ 183

Deferred Tax Assets and Liabilities

Deferred income taxes reflect the net effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets and liabilities were as follows (in thousands):

	Year Ended December 31, 2022	Year Ended December 31, 2021
Deferred tax assets:		
Net operating loss carryforwards	$ 83,397	$ 102,114
Research and development credits	11,405	12,114
163j interest limitation	9,979	21,581
Capitalized Section 174 R&D expenses	18,235	—
Accruals and reserves	5,089	4,344
Depreciation and amortization	514	231
Lease liability	5,430	6,967
Stock-based compensation	2,062	2,163
Valuation allowance	(12,556)	(9,732)
Total deferred tax assets	123,555	139,782
Deferred tax liabilities:		
Intangible assets	(128,495)	(151,528)
Deferred commissions	(7,269)	(6,890)
Right of use asset	(2,799)	(3,894)
Capitalized costs	(1,551)	(844)
Total deferred tax liabilities	(140,114)	(163,156)
Net deferred tax liabilities	$ (16,559)	$ (23,374)

On a quarterly basis, we estimate our annual effective tax rate to be applied to ordinary pre-tax income and record the tax impact of any discrete items separately in the relevant period. In addition, any change in valuation allowance that results from a change in judgment of the realizability of deferred tax assets is recorded in the quarter in which the change in judgment occurs.

The income tax benefit of $8.1 million during the year ended December 31, 2022 primarily relates to the pre-tax GAAP loss, changes in foreign tax rates and valuation allowance recorded. During the year ended December 31, 2022, we recognized a $68.7 million add-back to taxable income related to the newly enacted Section 174 capitalization of research and development expense legislation, which was entirely offset by net operating loss carryforwards in the current year. Given our cumulative loss position, we cannot currently substantiate the realizability of $1.8 million of the deferred tax asset established, and have therefore recorded a partial valuation allowance against the balance.

At December 31, 2022, we had $83.4 million in tax-effected federal, state and foreign net operating loss carryforwards. Additionally, at December 31, 2022, we had $11.4 million in income tax credits, net of recorded uncertain tax positions (“UTPs”), consisting primarily of federal and state research and development tax credits. These tax credits, if unused, begin expiring in 2024.

We review all available evidence to evaluate our recovery of deferred tax assets, including our history of accumulated losses in all tax jurisdictions over the most recent three years as well as our ability to generate income in future periods. We have provided a valuation allowance against some of our U.S. state and federal net deferred tax assets as it is more likely than not that these assets will not be realized given the nature of the assets and the likelihood of future utilization.

The valuation allowance increased by $2.8 million in the year ended December 31, 2022, primarily due to the Section 174 capitalization for foreign research and development costs rolling off over a 15 year period, creating deferred tax assets in excess of deferred tax liabilities expected in years 2030 through 2037. The valuation allowance decreased by $6.5 million in the year ended December 31, 2021, primarily due to the release of the valuation allowance of international subsidiaries. The valuation allowance decreased by $108.4 million in the Successor 2020 Period due to Thoma Bravo’s acquisition of Instructure and the deferred tax liability recorded in connection with the step-up in the book basis of the Company’s intangible assets. The Company’s valuation allowance increased by $13.0 million in the Predecessor 2020 Period primarily due to the generation of deferred tax assets related to net operating loss carryforwards.

U.S. income taxes on the undistributed earnings of our non-U.S. subsidiaries have not been provided for as we currently plan to indefinitely reinvest these amounts and have the ability to do so. Cumulative undistributed foreign earnings were not material at December 31, 2022 and December 31, 2021.

We had federal net operating loss carryforwards of $271.0 million and $351.7 million at December 31, 2022 and 2021, respectively, which if unused will expire at various dates through 2041.

We had federal research and development credit carryforwards of $14.5 million and $15.0 million at December 31, 2022 and 2021, respectively, that if unused will expire at various dates through 2041. We also had state research and investment credit carryforwards of $4.5 million and $4.6 million as of December 31, 2022 and 2021, respectively, that if unused will expire at various dates through 2036.

Uncertain Tax Positions

We account for uncertainty in income taxes using a two-step process. We first determine whether it is more likely than not that a tax position will be sustained upon examination by the tax authority, including resolutions of any related appeals or litigation processes, based on technical merit. If a tax position meets the more-likely-than-not recognition threshold it is then measured to determine the amount of benefit to recognize in the financial statements. The tax position is measured as the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement.

The following summarizes activity related to unrecognized tax benefits (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Unrecognized benefit—beginning of the year	$ 6,897	$ 6,632	$ 6,671	$ 6,152
Gross increases (decreases)—prior period positions	103	—	(123)	—
Gross increases (decreases)—current period positions	—	265	84	519
Unrecognized benefit—end of period	$ 7,000	$ 6,897	$ 6,632	$ 6,671

The Company does not expect any significant change in our unrecognized tax benefits within the next 12 months. At December 31, 2022, the Company had $7.0 million of total unrecognized tax benefits recorded against research and development tax credit carryforwards and federal net operating loss carryforwards, all of which would impact the effective tax rate if recognized. At December 31, 2021, the Company had $6.9 million of unrecognized tax benefits decreasing deferred tax assets.

We have elected to recognize interest and penalties related to UTPs as a component of income tax expense. No interest or penalties have been recorded through the year ended December 31, 2022.

We file tax returns in the United States, the United Kingdom, Australia, the Netherlands, Hong Kong, Sweden, Hungary, Mexico, Brazil, China, Singapore and various state jurisdictions. All of our tax years remain open to examination by major taxing jurisdictions to which we are subject, as carryforward attributes generated in past years may still be adjusted upon examination by the Internal Revenue Service or state and foreign tax authorities if they have or will be used in future periods.

11. Fair Value of Financial Instruments

The fair value of a financial instrument is the amount that could be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Financial assets are marked to bid prices and financial liabilities are marked to offer prices. Fair value measurements do not include transaction costs. The fair value hierarchy prioritizes the quality and reliability of the information used to determine fair values. Categorization within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is defined into the following three categories:

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

Level 2: Observable market based inputs or unobservable inputs that are corroborated by market data.

Level 3: Unobservable inputs that are not corroborated by market data.

There were no transfers between Level 1 and Level 2 of the fair value measurement hierarchy during 2022 and 2021. Assets and liabilities measured at fair value on a recurring basis as of December 31, 2022, were as follows (in thousands):

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	$ 3,383	$ —	$ —	$ 3,383
Total assets	$ 3,383	$ —	$ —	$ 3,383

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2021, were as follows (in thousands):

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
Assets:				
Money market funds	$ 3,343	$ —	$ —	$ 3,343
Total assets	$ 3,343	$ —	$ —	$ 3,343

Instruments Not Recorded at Fair Value on a Recurring Basis.

We estimate the fair value of our Senior Term Loan carried at face value, less unamortized discount costs, quarterly for disclosure purposes. The estimated fair value of our Senior Term Loan is determined by Level 2 inputs, observable market based inputs or unobservable inputs that are corroborated by market data. As of December 31, 2022, the fair value of our Senior Term Loan was $490.5 million. The carrying amounts of our cash, prepaid expenses, other current assets, and accrued liabilities approximate their current fair value because of their nature and relatively short maturity dates or durations.

12. Leases

The Company leases office space under non-cancelable operating leases with lease terms ranging from one to seven years. These leases require monthly lease payments that may be subject to annual increases throughout the lease term. Certain of these leases also include early termination options. The Company has elected to exercise its early termination rights. All related operating leases have been impaired to reflect this early termination option. The Company subleases four of its locations. The first, second, third, and fourth sublease term has 6 months, 72 months, 37 months, and 16 months remaining, respectively. None of the above subleases have an option for renewal.

Operating lease right-of-use assets and operating lease liabilities are recognized at the lease commencement date based on the present value of the lease payments over the lease term. Right-of-use assets also include adjustments related to prepaid or deferred lease payments and lease incentives. As most of our leases do not provide an implicit interest rate, we use our incremental borrowing rate based on information available at the lease commencement date to determine the present value of lease payments.

The Company performed evaluations of its contracts and determined that each of its identified leases are operating leases. The components of operating lease expense were as follows (in thousands):

	Successor			Predecessor
	Year Ended December 31, 2022	Year Ended December 31, 2021	Period from April 1 to December 31, 2020	Period from January 1 to March 31, 2020
Operating lease cost, gross	$ 7,053	$ 7,247	$ 6,853	$ 2,235
Variable lease cost, gross[1]	2,262	1,961	1,583	531
Sublease income	(1,180)	(1,094)	(539)	(177)
Total lease costs[2]	$ 8,135	$ 8,114	$ 7,897	$ 2,589

(1) Variable rent expense was not included within the measurement of the Company's operating right-of-use assets and lease liabilities. Variable rent expense is comprised primarily of the Company's proportionate share of operating expenses, property taxes and insurance and is classified as lease expense due to the Company's election to not separate lease and non-lease components.

(2) Short-term lease costs for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period were not significant and are not included in the table above.

Cash paid for amounts included in the measurement of operating lease liabilities for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 Period were $8.4 million, $8.6 million, $6.8 million, and $2.5 million, respectively, and was included in net cash provided by operating activities in the consolidated statements of cash flows.

As of December 31, 2022, the maturities of the Company's operating lease liabilities were as follows (in thousands):

2023	$ 8,826
2024	8,525
2025	4,337
2026	2,764
2027	1,995
Thereafter	1,099
Total lease payments	27,546
Less:	
Imputed interest	(3,731)
Lease liabilities	23,815
Tenant improvement reimbursements included in the measurement of lease liabilities but not yet received	(414)
Lease liabilities, net	23,401

As of December 31, 2022 and 2021, the weighted average remaining lease term was 3.6 and 4.4 years, respectively and the weighted average discount rate used to determine operating lease liabilities was 8.20% and 8.19%, respectively.

13. Commitments and Contingencies

Non-cancelable purchase obligations

As of December 31, 2022, our outstanding non-cancelable purchase obligations with a term of 12 months or longer related to cloud infrastructure and business analytic services in the ordinary course of business totaled $47.2 million for fiscal year 2023, $48.4 million for fiscal year 2024, and $48.0 million for fiscal year 2025. For the year ended December 31, 2022, we recognized expenses of $38.4 million in subscription and support cost of revenue, $2.2 million in research and development, $1.0 million in professional services and other cost of revenue, $0.1 million in sales and marketing, and $0.1 million in general and administrative in our consolidated statements of operations and comprehensive loss related to our non-cancelable purchase obligations.

Letters of Credit

As of December 31, 2022 and 2021, we had a total of $4.3 million and $4.2 million, respectively, of letters of credit outstanding that were issued for purposes of securing certain of the Company’s obligations under facility leases and other contractual arrangements.

Litigation

We are involved in various legal proceedings and claims, including challenges to trademarks, from time to time arising in the normal course of business. If we determine that it is probable that a loss has been incurred and the amount is reasonably estimable, we will record a liability in our consolidated financial statements. If only a range of estimated losses can be determined, we accrue an amount within the range that, in our judgment, reflects the most likely outcome; if none of the estimates within that range is a better estimate than any other amount, we accrue the low end of the range. Although the results of litigation and claims are inherently unpredictable and uncertain, management does not believe that the outcome of our various legal proceedings, with the potential exception of the matter outlined within this Annual Report on Form 10-K, if determined adversely to us, singly or in the aggregate, would have a material impact on our financial position, results of operations, or liquidity.

In February 2021, Oklahoma Law Enforcement Retirement System and Q. Wade Billings filed a class action lawsuit against Instructure Holdings, LLC, certain Thoma Bravo entities and certain directors and officers of Predecessor, relating to the Take-Private Transaction. The complaint alleges that such directors and officers breached their fiduciary duties in connection with the Take-Private Transaction, and that Instructure Holdings, LLC and Thoma Bravo aided and abetted such breaches. Plaintiffs seek damages of an unidentified amount, interest, and attorneys' and experts' fees and expenses. On September 8, 2022, the Court heard oral argument on the defendants' motion to dismiss and the plaintiff's motion to convert the motion to dismiss to one for summary judgment. On January 6, 2023, the Court dismissed the plaintiffs' complaint in full.

14. Employee Benefit Plan

We sponsor a qualified 401(k) defined contribution plan (the "401(k) Plan"), available to all qualified employees. The 401(k) Plan allows employees to contribute gross salary though payroll deductions up to the legally mandated limit based on their jurisdiction. For the year ended December 31, 2022 and the year ended December 31, 2021, the 401(k) Plan provides for matching contributions equal to 50% of each participant's elective contributions, not to exceed $2,000 per participant annually. Participants vest in matching contributions over a three-year period after a one-year cliff vest. For the Successor 2020 Period and Predecessor 2020 Period, the 401(k) Plan provided for matching contributions equal to 50% of each participant's elective contributions, not to exceed $1,000 per participant annually. Participants vested in matching contributions over a four-year period after a one-year cliff vest. The cost recognized for our contributions to the 401(k) Plan for the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 period, was $1.4 million, $1.4 million, $0.2 million, and $0.5 million, respectively.

15. Related-Party Transactions

The Company has agreements in place with Thoma Bravo, LLC for financial and management advisory services, along with compensation arrangements and reimbursements to directors and officers. During the year ended December 31, 2022, the year ended December 31, 2021, Successor 2020 Period, and Predecessor 2020 period, the Company incurred $0.6 million, $0.1 million, $0.5 million, and $47.0 thousand, respectively, related to these services. The related expense is reflected in general and administrative expense in the consolidated statements of operations and comprehensive loss.

The spouse of Mitch Benson, our Chief Strategy Officer, is an employee of the Company. Mr. Benson has served as an officer of the Company since August 2019. His spouse, Ms. Tara Gunther, has been an employee of the Company since 2014. Her 2021 base salary and short-term incentive award was approximately $0.2 million in the aggregate. She also received benefits generally available to all employees. The compensation for Ms. Gunther was determined in accordance with our standard employment and compensation practices applicable to employees with similar responsibilities and positions. For the year ended December 31, 2022, Ms. Gunther's base salary was $0.2 million.

In connection with our entry into our Credit Facilities on March 24, 2020, affiliates of Thoma Bravo collectively acquired $129.2 million of our Term Loan. In connection with our principal prepayments made in August 2021, $42.5 million of the prepayments were applied to the Term Loan held by affiliates of Thoma Bravo. Additionally, in connection with our October 29, 2021 Refinancing, $88.6 million of our Term Loan held by affiliates of Thoma Bravo was paid off. Refer to Note 5—Credit Facility for additional information regarding the principal prepayments and Refinancing.

Interest paid to affiliates of Thoma Bravo during the year ended December 31, 2021 and Successor 2020 Period were $7.5 million and $8.2 million, respectively.

In October 2022, our board of directors approved the appointment of Melissa Loble, Chief Customer Experience Officer, to the Board of Trustees of Internet2, a community of organizations providing services for research and education. Ms. Loble was appointed by Internet2's Board of Trustees in the same period and her term of service as a member of the Board of Trustees is expected to end in October 2024. For the year ended December 31, 2022, the Company paid Internet2 $0.5 million for services provided in the ordinary course of business.

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. Our management, with the participation of our Chief Executive Officer and Chief Financial Officer have evaluated our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report.

Based on management's evaluation, our Chief Executive Officer and our Chief Financial Officer concluded that, as of December 31, 2022, our disclosure controls and procedures were designed to, and were effective to, provide assurance at a reasonable level that the information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Management's Annual Report on Internal Control over Financial Reporting. Management, under the supervision of and with the participation of the Company's Chief Executive Officer and the Chief Financial Officer, assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2022 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control - Integrated Framework (2013)*. Based on its assessment, management concluded that the Company's internal control over financial reporting is effective as of December 31, 2022.

The SEC permits companies to exclude acquisitions from their assessment of internal control over financial reporting during the first year of such acquisition. In reliance of the SEC's guidance, management has elected to exclude LearnPlatform, Inc. from its assessment of internal control over financial reporting as of December 31, 2022. See Note 3—Acquisitions and Disposals of the Notes to Consolidated Financial Statements for additional information. The aggregate assets and revenues of the excluded acquisition represent 4.7% and 0.1% of the Company's consolidated total assets and total revenues as of and for the year ended December 31, 2022, respectively.

Our internal control over financial reporting as of December 31, 2022 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in its report, which is included in Item 8 of this Annual Report on Form 10-K.

Changes in internal control over financial reporting. There were no changes in our internal control over financial reporting during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent limitation on the effectiveness of internal control. The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute assurances. In addition, 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. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business, but cannot assure you that such improvements will be sufficient to provide us with effective internal control over financial reporting.

Item 9B. Other Information.

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this Item is incorporated by reference to the Company's 2023 Proxy Statement (the "2023 Proxy Statement") to be filed with the SEC within 120 days after December 31, 2022 in connection with the solicitation of proxies for the Company's 2023 annual meeting of stockholders.

Item 11. Executive Compensation.

The information required by this Item is incorporated by reference to the 2023 Proxy Statement.

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

The information required by this Item is incorporated by reference to the 2023 Proxy Statement.

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

The information required by this Item is incorporated by reference to the 2023 Proxy Statement.

Item 14. Principal Accounting Fees and Services.

The information required by this Item is incorporated by reference to the 2023 Proxy Statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a)(1) Financial Statements—The financial statements filed as part of this Annual Report on Form 10-K are listed on the Index to Consolidated Financial Statements in Item 8.

(a)(2) Financial Statement Schedules— All schedules are omitted because they are not applicable or the required information is shown in the financial statements or the notes thereto.

(a)(3) Exhibits—The exhibits required by Item 601 of Regulation S-K are listed in paragraph (b) below.

(b) Exhibits.

		Incorporated by Reference				
Exhibit Number	Description	Schedule Form	File Number	Exhibit	Filing Date	Filed or Furnished Herewith
3.1	Second Amended and Restated Certificate of Incorporation of Instructure Holdings, Inc., filed July 23, 2021	8-K	001-40647	3.1	July 26, 2021	
3.2	Amended and Restated Bylaws of Instructure Holdings, Inc., effective July 21, 2021	8-K	001-40647	3.2	July 26, 2021	
4.1	Registration Rights Agreement, dated as of March 24, 2020, by and among Instructure Parent, LP, Thoma Bravo and the other parties thereto	S-1/A	333-257473	4.1	June 28, 2021	
4.2	Description of the Securities					X
10.1	Credit Agreement, dated March 24, 2020, by and among Instructure Intermediate Holdings III, LLC, Instructure Holdings, LLC, Instructure, Inc., the Guarantors, the Lenders, Golub Capital Markets LLC, as administrative agent for the Lenders, and Golub Capital Markets LLC, as collateral agent for the Secured Parties	S-1	333-257473	10.1	June 28, 2021	
10.2	First Incremental Amendment and Waiver to Credit Agreement, dated December 22, 2020, by and among Instructure Intermediate Holdings III, LLC, Instructure Holdings, LLC, Instructure, Inc., the Guarantors, the Lenders, and Golub Capital Markets LLC, as administrative agent for the Lenders	S-1	333-257473	10.2	June 28, 2021	
10.3	Credit Agreement, dated October 29, 2021, by and among Instructure Holdings, Inc. and certain of its subsidiaries, JPMorgan Chase Bank, N.A., as administrative agent, and the lenders named therein	8-K	001-40647	10.1	November 1, 2021	
10.4+	Executive Agreement with Daniel T. Goldsmith	S-1	333-257473	10.14	June 28, 2021	
10.5+	Executive Agreement with Steven B. Kaminsky	S-1	333-257473	10.15	June 28, 2021	
10.6+	Form of Employee Co-Invest Agreement	S-1	333-257473	10.16	June 28, 2021	

10.7+	Executive Agreement with Steve Daly	S-1/A	333-257473	10.18	July 13, 2021	
10.8+	Executive Agreement with Dale Bowen	S-1/A	333-257473	10.19	July 13, 2021	
10.9+	Executive Agreement with Mitch Benson	S-1/A	333-257473	10.20	July 13, 2021	
10.10+	Executive Agreement with Matthew A. Kaminer	S-1/A	333-257473	10.21	July 13, 2021	
10.11+	Executive Agreement with Frank Maylett	S-1/A	333-257473	10.22	July 13, 2021	
10.12+	Executive Agreement with Melissa Loble	S-1/A	333-257473	10.23	July 13, 2021	
10.13+	Executive Agreement with Chris Ball					X
10.14	Director Nomination Agreement, dated as of July 26, 2021, by and among the Company and the other signatories party thereto	8-K	001-40647	10.1	July 26, 2021	
10.15+	Form of Indemnity Agreement	8-K	001-40647	10.2	July 26, 2021	
10.16+	Instructure Holdings, Inc. 2021 Omnibus Incentive Plan	S-8	333-258138	10.1	July 23, 2021	
10.17+	Form of Incentive Stock Option Agreement	S-8	333-258138	10.2	July 23, 2021	
10.18+	Form of Restricted Stock Unit Agreement	S-8	333-258138	10.4	July 23, 2021	
10.19+	Instructure Holdings, Inc. 2021 Employee Stock Purchase Plan	S-8	333-258138	10.3	July 23, 2021	
21.1	List of Subsidiaries of Instructure Holdings, Inc.					X
23.1	Consent of Ernst & Young LLP					X
31.1	Certification of Periodic Report by Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002					X
31.2	Certification of Periodic Report by Chief Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002					X
32.1*	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. Section 1350 as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002					X
101.SCH	Inline XBRL Taxonomy Extension Schema Document					X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					X
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					X
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)					X

+ Indicates management contract or compensatory plan or arrangement.
* The certifications attached as Exhibit 32.1 and 32.2 that accompany this Annual Report on Form 10-K are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

Item 16. Form 10-K Summary

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

INSTRUCTURE HOLDINGS, INC.

Date: February 17, 2023

By: /s/ Steve Daly
Steve Daly
Chief Executive Officer and Director

Pursuant to the requirements of the Securities Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the registrant and in the capacities indicated on February 17, 2023.

Signature	Title
/s/ Steve Daly Steve Daly	Chief Executive Officer and Director *(Principal Executive Officer)*
/s/ Dale Bowen Dale Bowen	Chief Financial Officer *(Principal Financial and Accounting Officer)*
/s/ Charles Goodman Charles Goodman	Director
/s/ Erik Akopiantz Erik Akopiantz	Director
/s/ Ossa Fisher Ossa Fisher	Director
/s/ James Hutter James Hutter	Director
/s/ Brian Jaffee Brian Jaffee	Director
/s/ Paul Holden Spaht, Jr. Paul Holden Spaht, Jr.	Director
/s/ Lloyd Waterhouse Lloyd Waterhouse	Director

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COMPANY INFORMATION

ANNUAL MEETING
Instructure Holdings, Inc.'s 2023 Annual Meeting of Stockholders will be held at its principal executive offices, located at 6330 South 3000 East, Suite 700, Salt Lake City, Utah 84121, on May 25, 2023 at 10:00 a.m. Mountain Time.

FORM 10-K ANNUAL REPORT
A copy of the Instructure Holdings, Inc. Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission is available to stockholders upon written request to our Secretary, or by visiting our website at *https://ir.instructure.com*.

COMMON STOCK LISTED (INST)
New York Stock Exchange

INVESTOR RELATIONS
6330 South 3000 East, Suite 700
Salt Lake City, UT 84121
investors@instructure.com

TRANSFER AGENT
American Stock Transfer
& Trust Company, LLC
6201 15th Avenue
Brooklyn, NY 11219

PRINCIPAL EXECUTIVE OFFICES
6330 South 3000 East, Suite 700
Salt Lake City, UT 84121

OUR BOARD OF DIRECTORS

Charles Goodman **C&N***
Chair of the Board of Directors
Operating Partner, Thoma Bravo

Erik Akopiantz **A***
Director
Operating Partner, Thoma Bravo

Steve Daly
Director
Chief Executive Officer,
Instructure Holdings, Inc.

Ossa Fisher **A**
Director
President, Aurora Innovation, Inc.

James Hutter
Director
Principal, Thoma Bravo

Brian Jaffee **C&N**
Director
Partner, Thoma Bravo

Paul Holden Spaht, Jr. **C&N**
Director
Managing Partner, Thoma Bravo

Lloyd "Buzz" Waterhouse **A**
Director
Senior Advisor, New Mountain Capital

A	Audit Committee
C&N	Compensation and Nominating Committee
*	Denotes Chair of Committee

OUR EXECUTIVE OFFICERS

Steve Daly
Chief Executive Officer and Director

Chris Ball
President and Chief Operating Officer

Mitch Benson
Chief Strategy Officer

Dale Bowen
Chief Financial Officer

Matthew A. Kaminer
Chief People and Legal Officer