

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: 001-36383

Five9, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of Incorporation or Organization)

94-3394123

(I.R.S. Employer Identification No.)

3001 Bishop Drive, Suite 350
San Ramon, CA 94583

(Address of Principal Executive Offices) (Zip Code)

(925) 201-2000

(Registrant's Telephone Number, Including Area Code)

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

<u>Title of each class</u>	<u>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Common Stock, \$0.001 par value	FIVN	The NASDAQ Global Market

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 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 and post 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 definition of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer	<input checked="" type="checkbox"/>	Accelerated Filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller Reporting Company	<input type="checkbox"/>
	(Do not check if a smaller reporting Company)	Emerging growth company	<input type="checkbox"/>

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

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

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

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

The aggregate market value of registrant's common stock held by non-affiliates of the registrant based upon the closing sale price on the NASDAQ Global Market on June 30, 2022, the last business day of the Registrant's most recently completed second fiscal quarter, was approximately \$5,331.6 million. Shares held by each executive officer, director and their affiliated holders and by each other person (if any) who owns 10% of the outstanding common stock or more have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 21, 2023, there were 71,151,340 shares of the Registrant's common stock, par value \$0.001 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the 2022 Annual Stockholders' Meeting, which the registrant expects to file with the Securities and Exchange Commission within 120 days of December 31, 2022, are incorporated by reference into Part III (Items 10, 11, 12, 13 and 14) of this Annual Report on Form 10-K.

FIVE9, INC.

FORM 10-K

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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 and Section 21E of the Securities Exchange Act of 1934, which involve substantial risks and uncertainties. These statements reflect the current views of our senior management with respect to future events and our financial performance. These forward-looking statements include statements with respect to our business, expenses, strategies, losses, growth plans, product and client initiatives, market growth projections, and our industry, including those set forth under “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and elsewhere in this report. Statements that include the words “expect,” “intend,” “plan,” “believe,” “project,” “forecast,” “estimate,” “may,” “should,” “anticipate” and similar statements of a future or forward-looking nature identify forward-looking statements for purposes of the federal securities laws or otherwise.

Forward-looking statements address matters that involve risks and uncertainties. Accordingly, there are or will be important factors that could cause our actual results to differ materially from those indicated in these statements. These factors include the information set forth under the caption “Risk Factors” and elsewhere in this report, and include the following:

- adverse economic conditions, including the impact of macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the impact of the Russia-Ukraine conflict, and other factors, may continue to harm our business;
- if we are unable to attract new clients or sell additional services and functionality to our existing clients, our revenue and revenue growth will be harmed;
- if our existing clients terminate their subscriptions or reduce their subscriptions and related usage, or fail to grow subscriptions at the rate they have in the past or that we might expect, our revenues and gross margins will be harmed, and we will be required to spend more money to grow our client base;
- because a significant percentage of our revenue is derived from existing clients, downturns or upturns in new sales will not be immediately reflected in our operating results and may be difficult to discern;
- we have established, and are continuing to increase, our network of technology solution brokers and resellers to sell our solution; our failure to effectively develop, manage, and maintain this network could materially harm our revenues;
- our quarterly and annual results may fluctuate significantly, including as a result of the timing and success of new product and feature introductions by us, may not fully reflect the underlying performance of our business and may result in decreases in the price of our common stock;
- our recent rapid growth may not be indicative of our future growth, and even if we continue to grow rapidly, we may fail to manage our growth effectively;
- our recent Chief Executive Officer transition could disrupt our operations, result in additional executive and personnel transitions and make it more difficult for us to hire and retain employees;
- failure to adequately retain and expand our sales force will impede our growth;
- if we fail to manage our technical operations infrastructure, our existing clients may experience service outages, our new clients may experience delays in the deployment of our solution and we could be subject to, among other things, claims for credits or damages;
- our growth depends in part on the success of our strategic relationships with third parties and our failure to successfully maintain, grow and manage these relationships could harm our business;
- the markets in which we participate involve a high number of competitors that is continuing to increase, and if we do not compete effectively, our operating results could be harmed;
- we continue to expand our international operations, which exposes us to significant macroeconomic and other risks;
- security breaches and improper access to or disclosure of our data or our clients’ data, or other cyber attacks on our systems, could result in litigation and regulatory risk, harm our reputation and our business;
- we may acquire other companies, or technologies or be the target of strategic transactions, or be impacted by transactions by other companies, which could divert our management’s attention, result in additional dilution to our stockholders or use a significant amount of our cash resources and otherwise disrupt our operations and harm our operating results;
- we sell our solution to larger organizations that require longer sales and implementation cycles and often demand more configuration and integration services or customized features and functions that we may not

offer, any of which could delay or prevent these sales and harm our growth rates, business and operating results;

- we rely on third-party telecommunications and internet service providers to provide our clients and their customers with telecommunication services and connectivity to our cloud contact center software and any failure by these service providers to provide reliable services could cause us to lose clients and subject us to claims for credits or damages, among other things;
- we have a history of losses and we may be unable to achieve or sustain profitability;
- the contact center software solutions market is subject to rapid technological change, and we must develop and sell incremental and new cloud contact center solutions, which we refer to as our solution, in order to maintain and grow our business;
- our stock price is volatile;
- we may not be able to secure additional financing on favorable terms, or at all, to meet our future capital needs;
- failure to comply with laws and regulations could harm our business and our reputation; and
- we may not have sufficient cash to service our convertible senior notes and repay such notes, if required.

The foregoing factors should not be construed as exhaustive and should be read together with the other cautionary statements included in this report, including under the section titled “Risk Factors.” If one or more of these or other risks or uncertainties materialize, or if our underlying assumptions prove to be incorrect, our actual results may differ materially from what we anticipate. You should not place undue reliance on our forward-looking statements. Any forward-looking statements you read in this report reflect our views only as of the date of this report with respect to future events and are subject to these and other risks, uncertainties and assumptions relating to our operations, results of operations, growth strategy and liquidity. We undertake no obligation to update any forward-looking statements made in this report to reflect events or circumstances after the date of this report or to reflect new information or the occurrence of unanticipated events, except as required by law.

PART I

ITEM 1. Business

Overview

Five9 is a pioneer and leading provider of intelligent cloud software for contact centers. We were “born in the cloud,” and since our inception, we have exclusively focused on delivering our platform in the cloud and are disrupting a significantly large market by replacing legacy on-premise contact center systems. Contact centers are vital hubs of interaction between organizations and their customers and, therefore, are essential to delivering successful customer service, sales and marketing strategies. Our mission is to empower organizations to transform their contact centers into customer engagement centers of excellence, while improving business agility and significantly lowering the cost and complexity of their contact center operations. Our purpose-built, reliable, scalable and secure Virtual Contact Center, or VCC, cloud platform delivers a comprehensive suite of easy-to-use applications that enable the breadth of contact center-related customer service, sales and marketing functions. We have become an established leader in the cloud contact center market with more than 2,500 clients. We believe our ability to combine software and telephony into a single unified platform that is delivered in the cloud creates a significant advantage.

We believe there are three key industry trends driving growth in the cloud contact center market.

First is the rapid increase in adoption of cloud contact center software solutions as a result of several distinct factors. The increasing adoption of cloud computing, especially within customer relationship management, or CRM, is creating strong demand for integrated cloud contact center software solutions. In addition, cloud contact center software solutions now offer the functionality required by large, complex enterprise contact centers. Furthermore, we believe organizations typically refresh their on-premise contact center systems every eight to 10 years, which provides an opportunity for cloud solutions to replace legacy on-premise contact center systems when these replacement decisions arise. On-premise systems require large up-front investments, long deployment cycles, and are burdensome to maintain. These systems are also often inflexible, complex, and require significant duplication of effort and integration across multiple sites. In addition, commencing during the COVID-19 pandemic, agents have increasingly worked remotely, which presents a challenge to premise-based systems that, by design, are focused on a particular physical location. This creates substantial challenges for clients with on-premise contact center systems. As a result, cloud contact center software solutions are continuing to replace legacy on-premise contact center systems.

Second is digital transformation. Consumers have the ability to easily and quickly switch brands after experiencing poor customer service. Therefore, it is more critical than ever to provide the tools and technologies to meet consumer demands for a seamless experience across their engagement channels of choice. Cloud contact center software solutions provide organizations with the agility to adapt to a rapidly evolving environment and innovative functionalities to reimagine the way they engage with customers.

Third is cloud-based technology advancements in areas such as artificial intelligence, or AI, which are enabling improved customer experience, significant operational efficiencies and business insights. For example, real-time, accurate and increasingly cost-effective automatic speech recognition and natural language processing are increasingly allowing mundane contact center tasks to be handled efficiently and effectively by virtual agents, allowing live agents to focus on more complex issues.

Our solution, comprised of our VCC cloud platform with native AI and automation capabilities, including Interactive Virtual Agent, or IVA, Agent Assist, Workflow Automation, or WFA, and Workforce Optimization, or WFO, allows simultaneous management and optimization of customer interactions across voice, chat, email, web, social media and mobile channels, either directly or through our application programming interfaces, or APIs. Our VCC cloud platform matches each customer interaction with an appropriate agent resource and delivers relevant customer data to the agent in real-time through integrations with adjacent enterprise applications, such as CRM software, to optimize the customer experience and improve agent productivity. Our solution ensures our clients always have the latest version of our software. Delivered on-demand, our solution enables our clients to quickly deploy agent seats in any geographic location with only a computer, headset and broadband internet connection, and rapidly adjust the number of contact center agent seats in response to changing business requirements. Unlike legacy on-premise contact center systems, our solution requires limited up-front investment, can be rapidly deployed and is maintained by us in the cloud.

Our sales model consists of a field sales team that sells our solution into larger opportunities and a telesales team that sells our solution into smaller opportunities. We have developed a proven, high velocity, metrics-driven sales and marketing strategy, designed to effectively identify, qualify and close sales opportunities. To complement this go-to-market strategy, we have developed a large ecosystem of technology and system integrator partners, which also provide sales leads, and independent software vendors to help increase awareness of our solution in the market and drive additional sales opportunities with new and existing clients. We have also established, and are continuing to increase, our network of technology solution brokers who provide sales leads and resellers that integrate our solution into their service offerings to new clients. Our partner ecosystem has helped us access new routes to market and gain market share both in domestic and international markets.

We provide our solution through a software-as-a-service, or SaaS, business model with recurring revenue made up of subscription revenue, based primarily on the number of agent seats, and usage, based on minutes, as well as the specific functionalities and applications our clients deploy such as virtual agents.

We have achieved significant growth in recent periods. For the years ended December 31, 2022, 2021 and 2020, our revenue was \$778.8 million, \$609.6 million and \$434.9 million, respectively, representing year-over-year growth of 28% and 40%, respectively. We incurred net losses of \$94.7 million, \$53.0 million and \$42.1 million for the years ended December 31, 2022, 2021 and 2020, respectively, primarily as a result of increased investment in our growth, along with higher stock-based compensation. As of December 31, 2022, 2021 and 2020, our total assets were \$1,244.5 million, \$1,192.9 million and \$1,063.7 million, respectively. Our recurring revenue model combined with our Annual Dollar-Based Retention Rate, which was 115% as of December 31, 2022, have enhanced our ability to forecast our financial performance and plan future investments. For a description of how our Annual Dollar-Based Retention Rate is calculated, please refer to ITEM 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Part II of this Annual Report on Form 10-K.

We operate in a single reportable segment. Please refer to the geographical information for each of the last three years in Note 11 of the notes to our consolidated financial statements. Please refer to the discussion of risks related to our foreign operations in the section entitled “ITEM 1A. Risk Factors.”

Our Solution

We deliver a comprehensive, end-to-end cloud software solution for contact centers. Our solution is designed to enable our customers to increase and improve the efficiency of their operations, increase revenue opportunities and business agility, and provide insights into the behaviors of their workforce and customers as it relates to customer experience. The platform facilitates this through key capabilities such as interaction routing and prioritization across channels, automation and integration of back and front end systems and the ability to leverage the power of AI through IVA and more. Our solution also empowers agents and supervisors through WFO. Organizations of a broad variety of sizes use our solution to improve customer service and create customer loyalty. These capabilities are offered across a wide variety of engagement channels from chat and SMS to e-mail and voice. Consumers are able to engage using their channel of choice and clients are able to facilitate fluid experiences that drive digital transformation.

Our agent interface is an intuitive modern browser-based design that provides easy visualization of customer profiles, context and cross channel history. Our solution is built on a modern SaaS architecture, leveraging both our own global data centers and public cloud deployments in a scalable, secure, and redundant manner. Our VCC platform is based on a modern micro services-based open enterprise architecture built with representational state transfer, or REST, APIs and software development kits, or SDKs, that enable customers, partners and developers to bridge any operational gaps within their unique systems. AI is an embedded part of our platform. We provide high quality inbound and outbound voice services leveraging our global network infrastructure, key strategic carrier partnerships, complex real time call routing, and wide range of customer connectivity options for secure, resilient interconnectivity to our network. Our complete end-to-end capabilities include Computer-Telephony Integration, or CTI, IVA, Interactive Voice Response, or IVR, WFA, Agent Assist, Automatic Call/Contact Distribution, or ACD, with skills-based routing, reporting, dashboards, agent and supervisor desktops, outbound dialer, pre-built third-party integrations, quality management, speech and desktop analytics, customer surveys and workforce management.

Our solution provides the following advantages:

- *Rapid implementation, seamless updates and pre-built integrations.* Our solution is designed to be deployed quickly and seamlessly with minimal disruption to a client’s operations. The pre-built integrations with leading CRM and other enterprise applications reduce the complexity and burden of integrating with the client’s business applications. Our solution is designed to be seamlessly updated so that clients are

always operating on the latest version of the software, while maintaining their existing configurations, ensuring minimal disruption to the client's contact center operations.

- *Highly flexible platform.* Our solution provides easy administration, configuration and role-based functionalities for agents, supervisors and administrators, enabling the rapid adjustment of contact center resources to meet a changing mix of contact channels and peaks-and-troughs in contact center volumes.
- *Scalable, secure and reliable multi-tenant architecture.* Our solution provides organizations of all sizes with the robust contact center functionality, scalability, flexibility and security required in the most sophisticated and distributed environments.

Our solution is designed to provide the following key benefits to clients:

- *Improved customer experience.* Our intelligent contact routing and self-service IVA and IVR capabilities, pre-built CRM integrations, and multichannel engagement ensure that customers receive an omnichannel experience. Each new contact is quickly routed to an appropriate agent resource. Using the rich contact history and additional context through integrations with CRM applications, agents have immediate access to the most current, relevant and accurate information about the customer, resulting in increased first contact resolutions and a more satisfying experience for the customer.
- *Higher agent productivity.* Our solution empowers agent productivity and effectiveness by allowing agents to handle both inbound and outbound calls and interact with customers across multiple digital engagement channels, including voice, chat, email, web, social media and mobile. Our solution gives agents the ability to switch between media channels through an easy-to-use, unified interface that provides agents with all of the relevant content and tools needed to complete the task at hand. Furthermore, our AI enabled automation features are designed to enable agent efficiency and cost reductions, including through the utilization of natural language processing, or NLP.
- *Enhanced end-to-end visibility.* Our solution provides clients' operations staff, quality team and leadership with a complete view of contact center performance through a comprehensive set of historical reports, real-time dashboards, and quality and performance management tools. Clients can also extract reporting data from our solution for further analysis using a spreadsheet application or using the sophistication of an enterprise business intelligence application. This insight provides an organization-wide view of customer engagement performance and allows clients to quickly address changing circumstances.
- *Greater operational efficiency.* Our solution provides contact center managers and supervisors with significant visibility into their agents' productivity and effectiveness and the performance of their inbound queues and outbound campaigns. Our solution has robust intelligence and analytics capabilities to help supervisors optimize operations and campaigns in real-time to drive increased efficiency. Our role-based interfaces deliver specific functionality to both desktops and mobile devices to meet the unique needs of agents, supervisors and administrators.
- *Compelling value proposition.* We provide a unified cloud-based software platform for contact center operations, including software applications, technology infrastructure, maintenance, monitoring, storage, security, client support and upgrades, which enables our clients to simplify their technology infrastructure and streamline IT costs. We manage upgrades and deployments remotely, resulting in lower total cost of operations relative to legacy on-premise contact center systems that often require in-house technical support staff.

Our Competitive Strengths

We believe that our position as a leading provider of cloud contact center software results from several key competitive strengths, including:

- *Global Cloud-based, enterprise-grade platform and end-to-end application suite.* We deliver a cloud-based enterprise-grade platform and applications suite with multi-channel capabilities that allows our clients to manage their entire contact center operation. Our highly scalable, secure and multi-tenant architecture enables us to serve large multi-national enterprises with complex contact center requirements, regional or national enterprises in countries around the world, as well as smaller organizations, all from our platform comprised of physical data centers around the world and globally distributed public cloud regions, all interconnected with a robust, redundant, private WAN and diverse regionalized Internet connectivity.

- *Rapid deployment and support of our comprehensive solution.* Our high-touch engagement model for larger implementations accelerates agent activation and targets desired business outcomes by leveraging a proven lifecycle approach including detailed discovery, design, testing, training and optimization. Through the use of tools and processes that have been refined over thousands of customers, we can also efficiently meet the needs of our smaller clients. We offer flexibility and integrate with a number of leading CRM vendors, including: Microsoft Corporation, or Microsoft, Oracle Corporation, or Oracle, Salesforce.com, Inc., or Salesforce, ServiceNow, Inc., or ServiceNow, Zendesk, Inc., or Zendesk, and others. We also offer integrations into UC partners such as Microsoft Teams, Nextiva, RingCentral, Zoom Video Communications, or Zoom, and others. We combine these comprehensive integrations with out-of-the-box application adapters that allow our customers to easily build workflow integrations without the need for dedicated developers. Once operational, we offer a high touch premium support service where we assign a technical account manager who has intimate knowledge of the customers' operations so we can quickly resolve issues and fine tune the solution. As a result, our clients' contact centers become fully operational faster and they recognize time to value more quickly than with legacy on-premise contact center systems.
- *Reliable, secure, compliant and scalable platform.* Our platform delivers what we believe is industry leading reliability utilizing public and private cloud technology; cybersecurity using a defense-in-depth approach; scalability to accommodate the requirements of larger clients; and legal and regulatory compliance features designed to assist our clients in complying with applicable laws, regulations and industry standards.
- *Proven, repeatable and scalable go-to-market model.* We engage with our clients through a highly scalable and metrics-driven sales and marketing organization that effectively identifies, qualifies and closes sales opportunities. The deep domain expertise of our field sales team is instrumental in selling to larger opportunities, and our highly efficient telesales model enables us to cost-effectively identify, qualify and close a high volume of smaller opportunities. Our ecosystem of technology, system integrator and channel partners increases awareness of our solution and helps generate new sales opportunities. We believe our go-to-market model gives us an efficient and effective means of targeting organizations of all sizes.
- *Established market presence and a large, diverse client base.* We have a large, diverse client base of over 2,500 organizations across multiple industries. We believe our clients view us as a key strategic solutions provider. The performance, reliability, ease-of-use and comprehensive nature of our solution has resulted in high client retention.
- *Extensive partner ecosystem.* We have cultivated a robust ecosystem of partners including a variety of leading CRM software vendors such as Microsoft, Oracle, Salesforce, ServiceNow and Zendesk; WFO vendors such as Calabrio, Inc., or Calabrio, and Verint Systems Inc., or Verint; unified communications vendors such as Microsoft Teams, Nextiva, RingCentral and Zoom; system integrators such as Accenture PLC, Deloitte Consulting LLP, IBM, PwC LLP and Slalom Consulting, LLC; technology solution brokers, value-added resellers such as AT&T Inc. and CDW Corporation; independent software vendors; and telephony providers. We believe this ecosystem has enabled us to increase our brand awareness and enhance the functionality and value of our solution for our clients.
- *Focus on innovation and thought leadership.* Since our inception, we have been an innovator of intelligent cloud contact center software. Our investment in research and development has driven our growth and enabled us to deliver a cloud contact center software solution with the features and functionality to power the most complex contact centers. We strive to be a thought leader in our industry, identifying and developing cloud capabilities to transform traditional contact center operations into customer engagement centers of excellence. Contact centers are a rich source of the data that powers AI, from call detail records to full recordings of calls and customer interactions. With recent advances in automatic speech recognition, voice recordings are becoming a source for training machine-learning models. We believe that AI is having, and is likely to have, an increasingly profound impact in how businesses deliver service to their customers.

Clients

We have a large, diverse and global client base comprised of more than 2,500 organizations as of December 31, 2022, with no single client representing more than 10% of our revenues in 2022, 2021 or 2020. Our client base spans organizations of all sizes across multiple industries, including banking and financial services, business process outsourcers, retail, healthcare, technology and education.

Sales and Marketing

Marketing. To build client awareness and adoption of our solution, our lead generation activities consist of a mix of organic activities such as social, digital presence and search engine optimization, and paid for activations such as search engine marketing, internet advertising, digital marketing campaigns, trade shows, industry events, co-marketing with strategic partners, account-based marketing, client referrals and out-of-home campaigns. We have adapted to various COVID-19 restrictions by converting our user group meeting from in-person to virtual and switching from in-person to fully virtual or hybrid attendance at various trade shows. In 2022, we returned to an almost fully in-person mode for our annual CX Summit and saw attendance increase by approximately 30% from the last fully in-person event in 2019. In addition, our industry analyst, press and media outreach programs, and web site marketing initiatives are designed to build brand awareness and preference for our solution. We offer online self-service demos to allow prospective clients to learn about the features and functionality of our cloud platform in more detail. We also offer proof of concept service packages, which include return-on-investment analyses conducted by third parties, to allow prospects to experience the quality and ease-of-use of our cloud solution and quantify the potential benefits of our deployment.

Direct Sales. Our sales model consists of a field sales team that sells our solution into larger opportunities and a telesales team that sells our solution into smaller opportunities. Our field and telesales teams are also responsible for selling to existing clients that may renew their subscriptions, increase the number of agents using our cloud solution, add new applications from our solution and expand the deployment of our solution across their contact centers.

Indirect Sales. We have cultivated strong partner relationships with technology solution brokers, system integrators and resellers to drive sales of our solution. We have established, and continue to increase, our network of technology solution brokers, which provide sales leads, system integrators, which also provide sales leads and help integrate our solution with our client systems, and resellers, which sell our solution to new clients. This network has helped us attract additional clients.

Professional Services

We offer global comprehensive professional services to our clients to assist in the successful implementation and optimization of our solution. Our professional services include application configuration, system integration, and education and training. Our clients may use our professional services team for implementing our solution or, in limited cases, they may also choose to perform these services themselves or engage third-party service providers to perform these services. Our cloud solution allows us to eliminate the need for lengthy and complex technology integrations, such as deploying equipment or maintaining hardware infrastructure for individual clients. As a result, we are typically able to deploy and optimize our solution in significantly less time than required for deployments of legacy on-premise contact center systems.

Research and Development

Our ability to compete depends in large part on our continuous commitment to research and development and our ability to improve the functionality of, and add new features to, our VCC cloud platform. Our core research and development center is based in our San Ramon, California headquarters, with additional engineers located in Australia and Portugal, which allows us to benefit from relatively low-cost and highly skilled software developers. In January 2023, we announced the opening of our new European Research and Development Hub in Porto, Portugal, which will serve as our European engineering headquarters. Our engineering team has deep software and telecommunications skills, and works closely with our sales team to identify our clients' product requirements. In addition, continuous interactions with our partners enable our engineers to enhance the usability and performance of our platform and its integration with best-in-class CRM and other business applications and telephony technologies.

Technology and Operations

Our highly scalable and flexible cloud platform is the result of our extensive research, development, client engagement and operational experience. Our platform is comprised of in-house developed intellectual property, open source products and commercially available hardware and software. Our platform is designed to be redundant. We believe that all components can be upgraded, expanded or replaced with minimal or no interruption in service.

We currently deliver our services globally from third-party co-location data center facilities located in the United States, the United Kingdom, Europe and Australia and from public cloud locations in Canada, the United Kingdom and Europe. We also host some of our voice services on the public cloud in Europe, Asia, South America and Australia as well as additional core services in Europe. Our infrastructure, including our third-party co-location

facilities, is designed to support real-time critical telecommunications, applications and operational support systems. Our infrastructure is built with redundant, fault-tolerant components divided into distinct security zones forming protective layers for our applications and customer data.

We have designed and maintain an operations, capacity and security program to monitor and maintain our platform, ensure efficient utilization of our platform capacity and protect against security threats or data breaches. Our global operations team monitors our data centers for potential performance issues, unauthorized attempts to access secure data or applications and the overall integrity of the platform.

Competition

The market for contact center software is fragmented, highly competitive and evolving rapidly in response to shifting consumer behavior, especially the transition to mobile devices and use of different channels of engagement, such as social media. The proliferation of each is driving change in contact center technology, as customers expect companies to give them the option of seamless communication across all channels without losing the overall context of customer interactions according to their preference and needs. Combined with the disruptive nature of the cloud in the contact center, this has resulted in competitors who come from different market and product heritages, and who vary in size, breadth and scope of the products and services offered. We currently compete with large legacy vendors that offer on-premise contact center systems, such as Avaya Inc., or Avaya, and Cisco Systems, Inc., or Cisco. These legacy telephony vendors are increasingly supplementing their traditional on-premise contact center systems with competing cloud offerings, through a combination of acquisitions, partnerships and in-house development. Additionally, we compete with vendors that historically provided other contact center services and technologies and expanded to offer cloud contact center software such as Genesys Telecommunications Laboratories, Inc., or Genesys, and NICE Ltd., or NICE. We also face competition from many smaller contact center service providers such as Content Guru and Talkdesk, as well as vendors offering both unified communications and contact center solutions such as Zoom. In addition, Amazon.com, Inc., or Amazon, Twilio Inc., or Twilio, and most recently, Microsoft, have introduced solutions aimed at companies who wish to build their own contact centers and/or contact center components with developers. In addition, CRM vendors are increasingly offering features and functionality that were traditionally provided by contact center service providers. CRM and customer experience vendors also continue to partner with contact center service providers to provide integrated solutions and may, in the future, acquire competitive contact center service providers. These factors could cause CRM vendors to reduce or terminate their partnerships with us, and could result in increased competition. Because CRM integration and partnerships are critical to the success of our solution, these factors could harm our revenue and results of operations.

Our actual and potential competitors may enjoy competitive advantages over us, including greater name recognition, longer operating histories, broader product offerings, larger marketing and product development budgets, as well as greater financial and technical resources. With the introduction of new technologies and market entrants, we expect competition to continue to intensify in the future. Our recent, and any future, acquisitions will subject us to new competitors and cause us to face additional and different competition in the markets served by these businesses. We believe the principal competitive factors in our market include:

- breadth and depth of solution features;
- reliability, scalability and quality of the platform;
- ease and speed of deployment;
- ease of application administration and use;
- level of client satisfaction;
- domain expertise in contact center operations;
- integration with third-party applications;
- ability to quickly adapt and upgrade to new and evolving technologies, including AI;
- pricing;
- ability to quickly adjust agent seats based on business requirements;
- breadth and domain expertise of the sales, marketing and support organization;
- ability to keep pace with client requirements;
- extent and efficiency of professional services;

- ability to offer multiple channels of engagement; and
- size and financial stability.

We believe we currently compete effectively with respect to each of the factors identified above.

Intellectual Property

We rely on a combination of patent, copyright, and trade secret laws in the U.S. and other jurisdictions, as well as license agreements, confidentiality agreements and other contractual protections, to protect our proprietary technology. We also rely on a number of registered and unregistered trademarks to protect our brand. In addition, we require our employees and independent contractors involved in development of intellectual property to enter into agreements acknowledging that all works, or other intellectual property generated or conceived by them on our behalf, are our property, and assigning to us any rights, including intellectual property rights, that they may claim or otherwise have in those works or property, to the extent allowable under applicable law.

As of December 31, 2022, our intellectual property portfolio included three registered U.S. trademarks, 15 issued U.S. patents, one pending U.S. patent application and one registered U.S. copyright. As of December 31, 2022, outside the U.S. we also had 10 trademark registrations, five issued patents and two pending international Patent Cooperation Treaty, or PCT, patent applications. The expiration dates of our issued patents range from 2030 to 2041. In general, our patents and patent applications apply to aspects of our VCC cloud platform.

We are also a party to various license agreements with third parties that typically grant us the right to use certain third-party technology in conjunction with our solution. We expect that software and other applications in our industry may be subject to third-party infringement claims as the number of competitors grows and the functionality of applications in different industry segments overlaps. Any of these third parties might make a claim of infringement against us at any time.

Seasonality

We believe that there are seasonal factors that cause our revenues in the first half of a year to be lower than our revenues in the second half of the year. During 2022, 2021 and 2020, 52%, 54%, and 55% of our total revenues were generated in the second half of each year. We believe this is due to increased activities in retail, healthcare and education in the second half of each year.

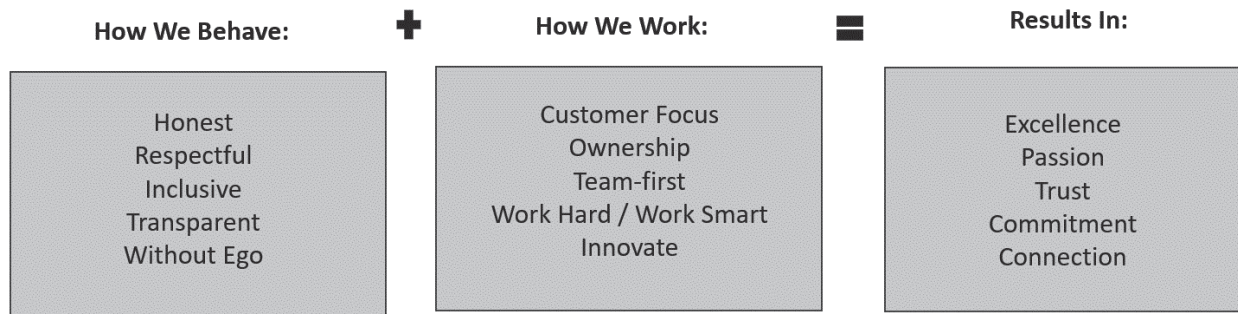
Employees and Human Capital Resources

Our employees and the culture we have established are the key to our success. As of December 31, 2022, we had 2,380 full-time employees. 47% of our employees are in various cost of revenue functions, 17% in research and development, 25% in sales and marketing and 11% in general and administrative. Our employee turnover for the last three years has averaged 8.1%.

The key human capital measures and objectives that we focus on in managing our business are maintaining our company values, increasing our diversity and inclusion, our compensation philosophy, our talent development, and our employees' safety and wellness.

Five9 Values - Bringing Passion and Purpose

At Five9 we are focused on delivering success for our customers, partners and employees. Living our values everyday results in a unique and powerful culture that we call "winning culture" in which every member on our team is passionately committed to achieve this collective success. This powerful team-first culture enables us to overcome any adversity or obstacle and win year after year while enjoying the journey together.



Our values are woven throughout the entire employee lifecycle and used in the interview process to ensure we hire candidates that have personal values that align with ours. Our values are instrumental in the semi-annual employee performance self-reflection cycle, and we request that employees share how they have lived our values. In addition, we regularly celebrate employees that live our values through recognition and rewards. We introduce new employees to our values during new hire orientation and our values are visible in the offer package as well as company employee resource pages. Our CEO also weaves these values into quarterly company meetings and regular smaller meetings, such as “Thursdays in the Cloud” where one of the values may be highlighted through a story and employee example.

We regularly collect feedback to better understand and improve the employee experience and identify opportunities to continually strengthen our culture. 81% of our employees participated in our most recent employee survey in 2022. Last year we maintained the highest level of employee engagement according to our vendor, Culture Amp, as noted in its Engagement and Inclusion benchmark (top quartile) based upon responses from approximately 2,000 companies. Employees’ highest rated areas were the following: work & life blend (92%), management (91%) and inclusion (91%).

Diversity & Inclusion at Five9

We value diversity and hold ourselves accountable to create a culture where our employees represent the communities in which we operate. We embrace authenticity and trust and lead with transparency, empowering our employees to have a voice that’s heard. We are committed to learning, empowering, advocating, allying and supporting each other within our company and in our communities. Our recruiting programs support and encourage diversity. We recruit from various diversity organizations, including historically black colleges and universities, the Career Cast Diversity Network of Women, Black, Hispanic, Asian, LGBTQIA, the Career Cast Disability Network, and the Career Cast Veteran Network. In addition, we have several Employee Resource Groups, or ERGs, that are committed to diversity and creating and fostering a culture of inclusion. Our ERGs include Women In Tech, Blatinx, Veterans, Five9 Faith and Pride @ Five9. We are currently working with Black Girls Code to offer an online educational session for underserved girls enlisted in their program and our female employees are facilitating the class. We have also created a mentorship program with a specific eye towards diversity. Executive sponsors of the program reach out to employees from underrepresented groups to promote the program and encourage employees to participate. Our human resources team pairs mentors with mentees to enable employees to receive opportunities for growth and development.

Women represent 30% of our worldwide employees and racial and ethnic minorities represent 32% of our U.S. employees as of December 31, 2022. Women and ethnic minorities each represent 22% and 11%, respectively, of our executive leadership team and 33% and 22%, respectively, of our Board of Directors as of December 31, 2022.

Compensation Philosophy

We strive to attract and retain the best employees by providing a total rewards package that is at or above market rates to enable us to attract and retain employee talent needed to accomplish our goals and objectives. Our competitive rewards packages include cash, bonus programs dependent upon the position, equity awards and benefits aligned to prevailing market practices, and in cases where business demands are unique, we may lead the competitive market.

Full-time employees and their family members enjoy comprehensive benefits programs and perquisites. In an effort to attract and retain the best talent, we strive to offer benefit programs that will enable our employees to thrive

both at work and at home. We cover 100% of the employee portion of our healthcare benefits and share a high portion of the dependent costs. Our competitive global benefits include a Parental Leave Policy, flexible schedules, financial and physical wellness programs, fertility benefits and Section 401(k) plan employer matching contributions.

Talent Development

Employee development is a key focus in the attraction, retention and management of our talent. Semi-annually, we facilitate employee self-reflection cycles where employees have development conversations with their manager. The purpose of these conversations is to foster the employee's development plans and career goals. Managers and employees discuss growth and development opportunities in these sessions and conversations and development plans are tracked via the employee performance platform. We also host a quarterly development series for all employees to enhance their career development. The development series topics have included mentorship, communicating for shared success, the art of influence and a career workshop. This development series aims to provide educational opportunities for leadership and growth for our employees. We also have a succession planning program that focuses on identifying employees that are high potential and high performing and plans for developing them into future leadership roles by creating action plans and a path for the employee's progression.

Workplace Practices and Policies

We are committed to providing a workplace free of harassment or discrimination based on race, color, religion, sex, sexual orientation, gender identity, national origin, disability, veteran status, caste or other legally protected characteristic. We are an equal opportunity employer committed to inclusion and diversity.

Environmental Sustainability

We are committed to reducing workplace-related resource consumption through our site selection, facilities design and energy procurement practices through our landlords, to ensure our corporate responsibility goals are achieved. We participate in building sustainability by occupying LEED certified and 5-Star NABERS Energy Rated multi-tenant buildings. Our corporate headquarters offers a transportation program to cut down on emissions. We have made strides in reducing energy consumption by upgrading our lighting system and installing motion sensors for lighting and convenience electrical outlets. To reduce waste, we use source compostable/recyclable kitchen products, centralized waste collection with an emphasis on recycling, established an E-waste program, implemented software tools to minimize printing waste and reduce equipment and toner purchases, and expanded our battery recycling program to include work-related and personal battery recycling.

Regulatory

The following summarizes important, but not all, federal, state and foreign regulations that could impact our operations. Federal and state regulations are subject to judicial review, administrative revision and statutory changes through legislation that could materially affect how we and others in this industry operate.

The Telecommunications Act of 1996 vests the Federal Communications Commission, or FCC, with jurisdiction over interstate telecommunications services, while preserving state and local jurisdiction over many aspects of these services. As a result, telecommunications services are regulated at both the federal and state levels in the United States.

We are classified as a telecommunications service provider for federal regulatory purposes. Since our business is regulated by the FCC, we are subject to existing or potential FCC regulations relating to privacy, disability access, Enhanced 911 access, porting of numbers, automatic number dialing, contributions to the federal Universal Service Fund and related funds, or USF, and other requirements. If we do not comply with FCC rules and regulations, we could be subject to FCC enforcement actions, fines and possibly restrictions on our ability to operate or offer certain of our services. Any enforcement action by the FCC, which may be a public process, would hurt our reputation in the industry, possibly impair our ability to sell our services to clients and could harm our business and results of operations. The Federal Trade Commission, or FTC, also has jurisdiction over some of our business practices, including advertising, trade practices, privacy and telemarketing. If we do not comply with FTC rules and regulations, we could be subject to an FTC enforcement action, fines or restrictions on our business practices.

We must comply with numerous federal regulations, including:

- Telephone Consumer Protection Act of 1991, or TCPA, which regulates the use of automatic dialing equipment and pre-recorded messages to contact consumers, and the Telemarketing Sales Rule, which has similar obligations as to telemarketing activities;
- The TRACED Act and corresponding regulations from the FCC, which require carriers to authenticate incoming calls using the STIR/SHAKEN caller ID framework and correspondingly compels providers of telecommunications services to implement capabilities to certify as authentic the traffic they provide to those carriers;
- CALEA, which requires telecommunications service providers to assist law enforcement in undertaking electronic surveillance;
- enhanced 911 rules, KARI's Law and RAY BAUM's Act, which, in certain circumstances, require telecommunications service providers to ensure their users can directly dial 911 emergency services and, if technically feasible, automatically convey dispatchable location information with the call;
- contributions to the USF, which requires that we pay a percentage of our revenues resulting from the provision of interstate and some international telecommunications services to support certain federal programs;
- payment of annual FCC regulatory fees based on our interstate and international revenues;
- rules pertaining to access to our services by people with disabilities and contributions to the Telecommunications Relay Services fund;
- FCC rules regarding Customer Proprietary Network Information, or CPNI, which require that we limit disclosure of certain information received from customers as a result of a service provider/customer relationship without customer approval, subject to certain exceptions;
- Federal Trade Commission Act and rules promulgated thereunder, which generally relate to avoiding unfair and deceptive trade practices, our advertising, and privacy practices; and
- State privacy laws require compliance with privacy frameworks and include disclosure obligations to consumers for whom we hold or process personal data including:
 - The California Consumer Privacy Act of 2018, as amended by the California Privacy Rights Act of 2020, or the CCPA, which took effect on January 1, 2023;
 - Virginia Consumer Data Protection Act, or the VCDPA, which took effect on January 1, 2023;
 - Colorado Privacy Act, or the CPA, which will take effect on July 1, 2023;
 - Connecticut Data Privacy Act, or CDPA, which will take effect on July 1, 2023; and
 - Utah Consumer Privacy Act, or the UCPA, which will take effect on December 31, 2023.

In addition, we must make contributions and other payments on our usage-based fees to state and local governmental entities. The tax and fee structure for communications services such as ours is complex, ambiguous and subject to interpretation. If taxing and regulatory authorities enact new rules or regulations or expand their interpretations of existing rules and regulations, we could incur additional liabilities. The amount that we are required to pay under certain of these tax and regulatory structures also continues to increase as a percentage of our telecommunications revenues. The collection of additional taxes, fees or surcharges in the future could increase our prices or reduce our profit margins. Compliance with these regulations may also make us less competitive with those competitors who are not subject to, or choose not to comply with, these regulations. See Note 10 of the notes to the consolidated financial statements under ITEM 8 of this Form 10-K for a discussion of our potential liability related to USF matters.

As we expand internationally, we will be subject to laws and regulations in the countries in which we offer our services. Regulation of the solutions we provide outside the U.S. varies from country to country, is often unclear, and may be more onerous than those imposed on our services in the U.S. For example, in the European Union, the General Data Protection Regulation, or the GDPR, requires companies to meet new and extended requirements regarding the processing of personal data. Non-compliance with the GDPR can trigger steep fines of up to €20 million or 4% of total worldwide annual turnover, whichever is higher. In addition, among other comprehensive privacy laws, we are subject to the UK's Data Protection Act, Canada's Personal Information Protection and Electronic Documents Act, or PIPEDA, and analogous provincial laws, emerging U.S. state privacy laws, which collectively impose similar data privacy and security obligations on our processing of personal data. Our regulatory obligations in foreign jurisdictions could impact the use or cost of our solution in international locations as data protection and privacy laws and regulations around the world continue to evolve.

The legislative and regulatory scheme for telecommunications service providers and other solutions we provide will continue to evolve and can be expected to change the competitive environment for these services. It is not possible to predict how such evolution and changes will affect our business or our industry. If we do not comply with current or future rules or regulations that apply to our business, we could be subject to substantial fines and penalties, we may have to restructure our service offerings, exit certain markets, accept lower margins or raise the price of our services, any of which could harm our business and results of operations. See “Risk Factors — Risks Related to Regulatory Matters” under ITEM 1A of this Form 10-K for more information.

Company Information

We were incorporated in Delaware in 2001. We operate in a single reportable segment. Our principal executive office is located at 3001 Bishop Drive, Suite 350, San Ramon, CA 94583 and our telephone number is (925) 201-2000. Our website address is www.five9.com. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this annual report on Form 10-K. We own or have rights to trademarks or trade names that we use in connection with the operation of our business, including our corporate names, logos and domain names. In addition, we own or have the rights to copyrights, trade secrets and other proprietary rights that protect the content of our solution. Solely for convenience, some of the copyrights, trademarks and trade names referred to in this annual report on Form 10-K are listed without ©, ® and ™ symbols, but we own and will assert, to the fullest extent under applicable law, our rights to our copyrights, trademarks and trade names.

Available Information

Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy and information statements and amendments to reports are filed with, or furnished to, the United States Securities and Exchange Commission, or SEC, pursuant to the Securities Exchange Act of 1934, as amended, or the Exchange Act. The SEC maintains a website at <https://www.sec.gov> that contains reports, proxy and information statements and other information regarding Five9 and other companies that file materials with the SEC electronically. Copies of our reports on Form 10-K, Forms 10-Q and Forms 8-K, and amendments thereto, may be obtained, free of charge, electronically through our internet website, <http://investors.five9.com/sec.cfm> as soon as reasonably practicable after such material is filed electronically with, or furnished to, the SEC. The information on our website is not a part of, or incorporated by reference into, this Annual Report on Form 10-K.

ITEM 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties. You should consider carefully the risks and uncertainties described below, together with all of the other information in this report. If any of the following risks or other risks actually occur, our business, financial condition, results of operations, and future prospects could be materially harmed, and the price of our common stock could decline.

Risk Factors Summary

The following is a summary of the principal risks that could adversely affect our business, financial condition, results of operations, and future prospects.

- Adverse economic conditions, including the impact of macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the impact of the Russia-Ukraine conflict, and other factors, may continue to harm our business.
- If we are unable to attract new clients or sell additional services and functionality to our existing clients, our revenue and revenue growth will be harmed.
- If our existing clients terminate their subscriptions or reduce their subscriptions and related usage, or fail to grow subscriptions at the rate they have in the past or that we might expect, our revenues and gross margins will be harmed, and we will be required to spend more money to grow our client base.
- Because a significant percentage of our revenue is derived from existing clients, downturns or upturns in new sales will not be immediately reflected in our operating results and may be difficult to discern.
- We have established, and are continuing to increase, our network of technology solution brokers and resellers to sell our solution; our failure to effectively develop, manage, and maintain this network could materially harm our revenues.

- Our quarterly and annual results may fluctuate significantly, including as a result of the timing and success of new product and feature introductions by us, may not fully reflect the underlying performance of our business and may result in decreases in the price of our common stock.
- Our recent rapid growth may not be indicative of our future growth, and even if we continue to grow rapidly, we may fail to manage our growth effectively.
- Our recent Chief Executive Officer transition could disrupt our operations, result in additional executive and personnel transitions and make it more difficult for us to hire and retain employees.
- Failure to adequately retain and expand our sales force will impede our growth.
- If we fail to manage our technical operations infrastructure, our existing clients may experience service outages, our new clients may experience delays in the deployment of our solution and we could be subject to, among other things, claims for credits or damages.
- Our growth depends in part on the success of our strategic relationships with third parties and our failure to successfully maintain, grow and manage these relationships could harm our business.
- The markets in which we participate involve a high number of competitors that is continuing to increase, and if we do not compete effectively, our operating results could be harmed.
- We continue to expand our international operations, which exposes us to significant macroeconomic and other risks.
- Security breaches and improper access to or disclosure of our data or our clients' data, or other cyber attacks on our systems, could result in litigation and regulatory risk, harm our reputation and our business.
- We may acquire other companies, or technologies or be the target of strategic transactions, or be impacted by transactions by other companies, which could divert our management's attention, result in additional dilution to our stockholders or use a significant amount of our cash resources and otherwise disrupt our operations and harm our operating results.
- We sell our solution to larger organizations that require longer sales and implementation cycles and often demand more configuration and integration services or customized features and functions that we may not offer, any of which could delay or prevent these sales and harm our growth rates, business and operating results.
- We rely on third-party telecommunications and internet service providers to provide our clients and their customers with telecommunication services and connectivity to our cloud contact center software and any failure by these service providers to provide reliable services could cause us to lose clients and subject us to claims for credits or damages, among other things.
- We have a history of losses and we may be unable to achieve or sustain profitability.
- The contact center software solutions market is subject to rapid technological change, and we must develop and sell incremental and new solutions in order to maintain and grow our business.
- Our stock price has been volatile, may continue to be volatile and may decline, including due to factors beyond our control.
- We may not be able to secure additional financing on favorable terms, or at all, to meet our future capital needs.
- Failure to comply with laws and regulations could harm our business and our reputation.
- We may not have sufficient cash to service our convertible senior notes and repay such notes, if required.

Risks Related to Our Financial Results

Our quarterly and annual results may fluctuate significantly, may not fully reflect the underlying performance of our business and may result in decreases in the price of our common stock.

Our quarterly and annual results of operations, including our revenues, profitability and cash flow have varied, and may vary significantly in the future, and period-to-period comparisons of our operating results may not be meaningful. Accordingly, the results of any one quarter or period, or series of quarters or periods, should not be relied upon as an indication of future performance. Our quarterly and annual financial results may fluctuate as a result of a variety of factors, many of which are outside our control and, as a result, may not fully reflect the underlying performance of our business. Fluctuation in quarterly and annual results may harm the value of our common stock. Factors that may cause fluctuations in our quarterly and annual results include, without limitation:

- market acceptance of our solution, including new features that are added to our solution;

- if our existing clients terminate their subscriptions or reduce their subscriptions and related usage, or fail to grow subscriptions at the rate they have in the past or that we expect;
- adverse economic conditions, including the impact of macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the impact of the Russia-Ukraine conflict, or other factors;
- our ability to attract new clients and grow our business with existing clients;
- client renewal rates;
- client attrition rates;
- changes to our management team;
- network outages or security incidents, which may result in additional expenses or losses, legal or regulatory actions, the loss of clients, the provision of client credits, and harm to our reputation;
- our ability to make technological advancements, add more features to our solution, and integrate those features within our client's technology infrastructure;
- our ability to adequately expand our sales and service team;
- our ability to acquire and maintain strategic and client relationships;
- the timing and success of new product and feature introductions by us or our competitors or any other change in the competitive dynamics of our industry, including consolidation, partnership or collaboration among competitors, clients or strategic partners;
- our ability to successfully integrate companies, businesses and technology that we acquire and achieve a positive return on our investment;
- the amount and timing of costs and expenses related to the maintenance and expansion of our business, operations and infrastructure;
- seasonal factors that may cause our revenues in the first half of a year to be relatively lower than our revenues in the second half of a year;
- inaccessibility or failure of our cloud contact center software due to failures in the products or services provided by third parties;
- the amount and timing of costs and expenses related to our research and development efforts or in the acquisition of technologies or businesses and potential future charges for impairment of goodwill from acquired companies;
- our ability to expand, and effectively utilize, our network of technology solution brokers, resellers and systems integrators;
- the timing of recognition of revenues under current and future GAAP;
- changes in our pricing policies or those of our competitors;
- increases or decreases in the costs to provide our solution or pricing changes upon any renewals of client agreements;
- the level of professional services and support we provide our clients;
- the addition or loss of key clients, including through acquisitions or consolidations;
- compliance with, or changes in, the current and future domestic and international regulatory environment;
- the hiring, training and retention of key employees;
- the outcome of litigation or other claims against us;
- the ability to expand internationally, and to do so profitably;
- our ability to obtain additional financing on acceptable terms if and when needed;
- the timing of expenses related to any future acquisition transactions; and
- advances and trends in new technologies and industry standards.

Because a significant percentage of our revenue is derived from existing clients, downturns or upturns in new sales will not be immediately reflected in our operating results and may be difficult to discern.

We generally recognize subscription revenue from clients monthly as services are delivered. As a result, the vast majority of the subscription revenue we report in each quarter is derived from existing clients. Consequently, a decline in new subscriptions in any single quarter will likely have only a small impact on our revenue results for that

quarter. However, the cumulative impact of such declines could negatively impact our business and results of operations in future quarters. Accordingly, the effect of potential changes in our pricing policies or renewal rates, and significant downturns in sales, number of agent seats, market acceptance and implementation of our solution, including as a result of the impact of macroeconomic deterioration on our clients, increased inflation rates, increased interest rates, decreased economic output and fluctuations in currency exchange rates, will typically not be reflected in our results of operations until future periods. We also may be unable to adjust our cost structure to reflect the changes in revenue, resulting in lower margins and earnings. In addition, our subscription model makes it difficult for us to rapidly increase our revenue through additional sales in any period, as revenue from new clients will be recognized over time as services are delivered. Moreover, many of our clients initially deploy our solution to support only a portion of their contact center agents and, therefore, we may not generate significant revenue from these new clients at the outset of our relationship, if at all. Any increase to our revenue and the value of these existing client relationships will only be reflected in our results of operations as subscription revenue is recognized, and if and when these clients increase the number of agent seats and the number of components of our solution they deploy over time.

Shifts over time or from quarter-to-quarter in the mix of sizes or types of organizations that purchase our solution could affect our gross margins and operating results.

Our strategy is to sell our solution to both smaller and larger organizations. Our gross margins can vary depending on numerous factors related to the implementation and use of our solution, including the features and number of agent seats purchased by our clients, the increasing reliance on public cloud providers, and the level of usage and professional services and support required by our clients. For example, our larger clients typically require more professional services, and because our professional services offerings typically have lower margins, any increase in sales of professional services could harm our gross margins and operating results. We also have lower margins on our usage revenues. Sales to larger organizations may also entail longer sales cycles and more significant selling efforts and expense. Selling to smaller clients may involve smaller contract sizes, fewer opportunities to sell additional services, a higher likelihood of contract terminations, lower returns on sales and marketing expense, fewer potential agent seats and greater credit risk and uncertainty. If the mix of organizations that purchase our solution changes unfavorably, our revenues and gross margins could decrease, and our operating results could be harmed.

We have a history of losses and we may be unable to achieve or sustain profitability.

We have incurred losses in each annual period since our inception in 2001. We incurred net losses of \$94.7 million, \$53.0 million and \$42.1 million for the years ended December 31, 2022, 2021 and 2020, respectively. As of December 31, 2022, we had an accumulated deficit of \$323.1 million. These losses and our accumulated deficit reflect the substantial investments we have made, and continue to make, to develop our solution and acquire new clients, among other expenses. We expect the dollar amount of our costs and expenses to increase in the future as revenue increases, although at a slower rate. We expect our losses to continue for the foreseeable future as we continue to invest in sales and marketing and research and development and expand our business. In addition, as a public company, we incur significant legal, accounting and other expenses. Our historical or recent growth in revenues is not necessarily indicative of our future performance. Accordingly, there is no assurance that we will achieve profitability in the future or that, if we do become profitable, we will sustain profitability.

Risks Related to Our Growth

Our recent rapid growth may not be indicative of our future growth, and if we continue to grow rapidly, we may fail to manage our growth effectively.

For the years ended December 31, 2022, 2021 and 2020, our revenues were \$778.8 million, \$609.6 million and \$434.9 million, respectively, representing year-over-year growth of 28% and 40%, respectively. In the future, as our revenue increases, our annual revenue growth rate may decline. We believe our revenue growth will depend on a number of factors, including our ability to:

- compete with other vendors of cloud-based enterprise contact center systems, including recent market entrants, and with providers of legacy on-premise systems;
- increase our existing clients' use of our solution, including additional and new features of our solution;
- maintain our existing clients and their level of subscriptions and related usage, and grow subscriptions within our existing client base;

- respond to adverse economic conditions, including the impact of macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the impact of the Russia-Ukraine conflict, or other factors;
- respond to general macro economic factors and industry and market conditions;
- further develop our partner ecosystem;
- strengthen and improve our solution through significant investments in research and development and the introduction of new and enhanced features and functionality, such as our AI enabled automation features;
- introduce our solution to new markets outside of the United States and increase global awareness of our brand; and
- selectively pursue acquisitions that enhance our solution offerings.

If we are not successful in achieving these objectives, our ability to grow our revenue may be harmed. In addition, we plan to continue to invest in future growth, including expending substantial financial and other resources on:

- sales and marketing, including a significant expansion of our sales and professional services organization;
- our technology infrastructure, including systems architecture, management tools, scalability, availability, performance and security, as well as disaster recovery measures;
- solution development, including investments in our solution development team, the development of new solutions and in the acquisition of companies and technologies to enhance our solution, as well as new applications and features for our existing solution;
- international expansion; and
- general administration, including legal, regulatory compliance and accounting expenses.

Moreover, we continue to expand our headcount and operations. We grew from 1,549 employees as of December 31, 2020, to 2,138 employees as of December 31, 2021, and to 2,380 employees as of December 31, 2022. We anticipate that we will continue to expand our operations and headcount in the near term and beyond in accordance with our overall strategy and taking into consideration macroeconomic conditions. This growth has placed, and future growth will place, a significant strain on our management, administrative, operational and financial resources, company culture and infrastructure. For example, we have continued to expand our international operations, including the formation of new legal entities, which will increase the complexity of our operations, administration and infrastructure. Our success will depend in part on our ability to manage this growth effectively while retaining personnel. To manage the expected growth of our operations and personnel, we will need to continue to improve our operational, financial and management controls and our reporting systems and procedures. Failure to effectively manage growth could result in difficulties or delays in adding new clients, declines in quality or client satisfaction, increases in costs, system failures, difficulties in introducing new features or solutions, the need for more capital than we anticipate or other operational difficulties, and any of these difficulties could harm our business performance and results of operations.

The expected addition of new employees, particularly outside the United States, and the capital investments that we anticipate will be necessary to help us grow and to manage that growth will make it more difficult for us to generate earnings or offset any future revenue shortfalls by reducing costs and expenses in the short term. If we fail to manage our anticipated growth, we will be unable to execute our business plan successfully.

Our growth depends in part on the success of our strategic relationships with third parties and our failure to successfully maintain, grow and manage these relationships could harm our business.

We leverage strategic relationships with third parties, such as CRM providers, WFO providers, systems integrators, telephony and other technology providers. For example, our relationship with CRM providers and systems integrators provide significant lead generation for new client opportunities. These relationships are typically not exclusive and our partners often also offer products of our competitors. As we grow our business, we will continue to depend on both existing and new strategic relationships. Our competitors may be more successful than we are in establishing or expanding relationships with third parties or may provide incentives to third parties to favor their products over our solution. Our competitors may also have deeper or broader relationships with third parties, including a broader suite of products that are outside our core markets, that could give these competitors an advantage in establishing and maintaining relationships with these third parties. These strategic partners may cease to recommend our solution to prospective clients due to actual or perceived lack of features, technological or

security issues or failures, reputational concerns, economic incentives, or other factors, which would harm our business, financial condition and operations. Furthermore, there has and continues to be a significant amount of consolidation in our industry and adjacent industries, and if our partners are acquired, fail to work effectively with us or go out of business, they may no longer support or promote our solution, or may be less effective in doing so, which could harm our business, financial condition and operations. If we are unsuccessful in establishing or maintaining our strategic relationships with third parties, or these partners fail to recommend our solution, our ability to compete in the marketplace or to grow our revenues could be impaired and our operating results may suffer. Even if we are successful, we cannot assure you that these relationships will result in increased client usage of our solution or increased revenue.

In addition, identifying new partners, and negotiating and documenting relationships with them, requires significant time and resources. As the complexity of our solution and our third-party relationships increases, the management of those relationships and the negotiation of contractual terms sufficient to protect our rights and promote our interests and limit our potential liabilities will become more complicated. We also license technology from certain third parties, including through OEM relationships. Certain of these agreements permit either party to terminate all or a portion of the relationship without cause at any time and for any reason. If one of these agreements is terminated by the other party, we would have to find an alternative source or develop new technology ourselves, which preclude, limit or delay our ability to offer our solution or certain product features to our clients, result in increased expense and harm our business. Our inability to successfully manage and maintain these complex relationships or negotiate sufficient and favorable contractual terms could harm our business.

Our recent growth, the COVID-19 pandemic and recent adverse economic conditions make it difficult to evaluate and predict our current business and future prospects.

While we have been in existence since 2001, much of our employee, revenue and operations growth has occurred in recent years. Our recent growth may make it difficult for investors to evaluate our current business and our future prospects. We have encountered and will continue to encounter risks and difficulties frequently experienced by growing companies in rapidly changing industries, including increasing and unforeseen expenses as we continue to grow our business. Financial results during the COVID-19 pandemic may not be illustrative of our current business and future prospects.

Our ability to forecast our future operating results is limited and subject to a number of uncertainties, including our ability to predict revenue and expense levels, and plan for and model future growth. These uncertainties are exacerbated by the effects of recent adverse economic conditions, including macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the Russia-Ukraine conflict, or other factors. We have encountered and will continue to encounter risks and uncertainties frequently experienced by growing companies in rapidly changing industries, such as the risks and uncertainties described in this annual report. If our assumptions regarding these risks and uncertainties, which we use to plan our business, are incorrect or change due to adjustments in our markets or our competitors and their product offerings, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations and our business could suffer.

Risks Related to Our Clients

If we are unable to attract new clients or sell additional seats, functionality and services to our existing clients, our revenue and revenue growth will be harmed.

To increase our revenue, we must add new clients, add additional agent seats and sell additional seats, functionality and services to existing clients, and successfully get existing clients to renew their subscriptions on terms favorable to us. As our industry matures, as our clients experience seasonal trends in their business, or as competitors introduce lower cost or differentiated products or services that are perceived to compete favorably with ours, our ability to add new clients and renew, maintain or sell additional services to existing clients based on pricing, cost of ownership, technology and functionality could be harmed. As a result, our existing clients may not renew our agreements or may decrease their number of agent seats, and we may be unable to attract new clients or grow or maintain our business with existing clients, which could harm our revenue and growth.

Furthermore, a portion of our revenue is generated by acquiring domestic and international telecommunications minutes from wholesale telecommunication service providers and reselling those minutes to our

clients. As telecommunications rates continue to decrease, we may not be able to resell more minutes to maintain our level of usage revenue.

If our existing clients terminate their subscriptions or reduce their subscriptions and related usage, our revenues and gross margins will be harmed and we will be required to spend more money to grow our client base.

We expect to continue to derive a significant portion of our revenues from existing clients. As a result, retaining our existing clients is critical to our future operating results. We offer monthly, annual and multiple-year contracts to our clients, generally with 30 days' notice required for reductions in the number of agent seats. Increases in the number of agent seats can be provisioned almost immediately. Our clients, therefore, are able to adjust the number of agent seats used to meet their changing contact center volume needs. Subscriptions and related usage by our existing clients may decrease if:

- our clients' business or demand for our services slows or declines due to industry cycles, seasonality, business difficulties or other reasons, including the impact of macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the Russia-Ukraine conflict, or other factors;
- clients are not satisfied with our services, prices or the functionality of our solution;
- the stability, performance or security of our solution are not satisfactory;
- the U.S. or global economy declines;
- clients favor products offered by other contact center providers, particularly as competition continues to increase;
- fewer clients purchase usage from us;
- alternative technologies, products or features emerge or gain popularity that we do not provide; or
- our clients or potential clients experience financial difficulties, including as a result of macroeconomic deterioration.

If our existing clients' subscriptions and related usage decrease or are terminated, we will need to spend more money to acquire new clients and still may not be able to maintain, or increase, our existing level of revenues. We incur significant costs and expenses, including sales and marketing expenses, to acquire new clients, and those costs and expenses are an important factor in determining our profitability. There can be no assurance that our efforts to acquire new clients will be successful.

The loss of one or more of our key clients, or a failure to renew our subscription agreements with one or more of our key clients, could harm our ability to market our solution.

We rely on our reputation and recommendations from key clients in order to market and sell our solution. The loss of any of our key clients, or a failure of some of them to renew or to continue to recommend our solution, could have a significant impact on our revenues, reputation and our ability to obtain new clients. In addition, acquisitions of our clients could lead to cancellation of our contracts with those clients, thereby reducing the number of our existing and potential clients and key reference clients.

Our clients may fail to comply with the terms of their agreements, necessitating action by us to collect payment, or may terminate their subscriptions for our solution.

If clients fail to pay us under the terms of our agreements or fail to comply with the terms of our agreements, including compliance with regulatory requirements and intellectual property terms, we may terminate clients, lose revenue, be unable to collect amounts due to us, be subject to legal or regulatory action and incur costs in enforcing the terms of our contracts, including litigation. Some of our clients may seek bankruptcy protection or other similar relief and fail to pay amounts due to us, seek reimbursement for amounts already paid, or pay those amounts more slowly, all of which risks may be exacerbated by the effects of macroeconomic deterioration, including increased interest inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the Russia-Ukraine conflict, or other factors, any of which could harm our operating results, financial position and cash flow.

Our business could be harmed if our clients are not satisfied with the professional services and technical support provided by us or our partners.

Our business depends on our ability to satisfy our clients, not only with respect to our solution, but also with the professional services and technical support that are required for our clients to implement and use our solution to address their business needs. Professional services and technical support may be performed by our own staff or, in a select subset of cases, by third parties. Our professional services offerings have lower or negative margins. Accordingly, any increase in sales of professional services could harm our gross margins and operating results. We will need to continue to considerably expand our professional services and technical support in order to implement and support new and larger global client installations. Identifying and recruiting qualified service personnel and training them in our solution is difficult and competitive and requires significant time, expense and attention. We may be unable to respond quickly enough to accommodate short-term increases in client demand for support services. We also may be unable to modify the format of our support services or change our pricing to compete with changes in support services provided by our competitors. Increased client demand for these services, without corresponding revenues, would increase our costs and harm our operating results. If a client is not satisfied with the deployment and ongoing services performed by us or a third party, we could lose clients, miss opportunities to expand our business with these clients, incur additional costs, or suffer reduced (including negative) margins on our service revenue, any of which could damage our ability to grow our business. In addition, negative publicity related to our professional services and technical support, regardless of its accuracy, may damage our business by affecting our ability to compete for new business with current and prospective clients.

Risks Related to the Sale of our Solution

Failure to adequately retain and expand our direct sales force will impede our growth.

Key to our success is the continuity and growth of our direct sales force. We need to continue to retain key members of our direct sales force while expanding and optimizing our sales infrastructure and headcount in order to grow our client base and business. We plan to continue to expand our direct sales force, both domestically and internationally. Identifying and recruiting qualified personnel and training them in the use and sale of our solution requires significant time, expense and attention. It can take several months before our sales representatives are fully trained and productive. Our business may be harmed if we fail to retain key members of our direct sales force or if our efforts, and the expense incurred, to expand and train our direct sales force do not generate a corresponding increase in revenues. In particular, if we are unable to hire, develop and retain talented sales personnel or if new sales personnel, including those joining our company as a result of an acquisition, are unable to achieve desired productivity levels in a reasonable period of time, we may not be able to realize the expected benefits of this investment or increase our revenues.

We have established, and are continuing to increase, our network of technology solution brokers and resellers to sell our solution; our failure to effectively develop, manage, and maintain this network could materially harm our revenues.

We have established, and are continuing to increase, our network of technology solution brokers, which provide sales leads, and resellers, which sell our solution to new clients. This network has helped us attract additional clients. Our resellers have assisted us in expanding in both domestic and international markets. These technology solution brokers and resellers sell, or may in the future decide to sell, solutions for our competitors. Our competitors may be able to cause our current or potential technology solution brokers or resellers to favor their services over ours, either through financial incentives, technological innovation, solution features or performance, by offering a broader array of products to these service providers or otherwise, which could reduce the effectiveness of our use of these third parties. If we fail to maintain relationships with current technology solution brokers and resellers, fail to develop relationships with new technology solution brokers and resellers in new and existing markets, if we fail to manage, train, or provide appropriate incentives to our existing technology solution brokers and resellers, or if our technology solution brokers and resellers are not successful in their sales efforts, sales of our subscriptions may decrease or not grow at an appropriate rate and our operating results could be harmed. Additionally, in order to effectively utilize our resellers, we must enhance our systems, develop specialized marketing materials and invest in educating resellers regarding our systems, product offerings and services. Our failure to accomplish these objectives could limit our success in marketing and selling our solution.

In addition, identifying new resellers, and negotiating and documenting relationships with them, requires significant time and resources. As the complexity of our solution and our reseller relationships increases, the management of those relationships and the negotiation of contractual terms sufficient to protect our rights and limit our potential liabilities will become more complicated. Our inability to successfully manage these complex relationships or negotiate sufficient contractual terms could harm our business.

We sell our solution to larger organizations that require longer sales and implementation cycles and often demand more configuration and integration services or customized features and functions that we may not offer, any of which could delay or prevent these sales and harm our growth rates, business and operating results.

As we continue to target our sales efforts at larger organizations, we face greater costs, longer sales and implementation cycles and less predictability in closing sales. These larger organizations typically require more configuration and integration services, which increases our upfront investment in sales and deployment efforts, with no guarantee that these clients will subscribe to our solution or increase the scope of their subscription. Furthermore, with larger organizations, we must provide greater levels of education regarding the use and benefits of our solution to a broader group of people in order to generate a sale. As a result of these factors, we must devote a significant amount of sales support and professional services resources to individual clients and prospective clients, thereby increasing the cost and time required to complete sales. Our typical sales cycle for larger organizations is four to six months, but can be significantly longer, and we expect that our average sales cycle may increase as sales to larger organizations continue to grow as a percentage of our business. Longer sales cycles could cause our operating and financial results to be less predictable and to fluctuate from period to period. In addition, many of our clients that are larger organizations initially deploy our solution to support only a portion of their contact center agents. Our success depends on our ability to increase the number of agent seats and the number of applications utilized by these larger organizations over time and requires the expenditure of additional sales and marketing expenses in these efforts. There is no guarantee that these clients will increase their subscriptions for our solution. If we do not expand our initial relationships with larger organizations, the return on our investments in sales and deployment efforts for these clients will decrease and our business may suffer.

Furthermore, we may not be able to provide the configuration and integration services that larger organizations typically require. For example, our solution does not currently permit clients to modify our software code, but instead requires them to use our set of APIs. If prospective clients require customized features or functions that we do not offer, and that would be difficult for them to deploy themselves, they will need to use our professional services or third-party service providers or we may lose sales opportunities with larger organizations and our business could suffer.

The markets in which we participate involve a high number of competitors that is continuing to increase, and if we do not compete effectively, our operating results could be harmed.

The market for contact center solutions is highly competitive. Generally, we do not have long-term contracts with our clients and our clients can terminate our service and switch to competitors' offerings on short notice.

We currently compete with large legacy technology vendors that offer on-premise contact center systems, such as Avaya and Cisco. These legacy technology and software companies are increasingly supplementing their traditional on-premise contact center systems with competing cloud offerings, through a combination of acquisitions, partnerships and in-house development. Additionally, we compete with vendors that historically provided other contact center services and technologies and expanded to offer cloud contact center software such as Genesys and NICE. We also face competition from many smaller contact center service providers such as Content Guru and Talkdesk, as well as vendors offering unified communications and contact center solutions such as Zoom. In addition, Amazon, Twilio and, most recently, Microsoft, have introduced solutions aimed at companies who wish to build their own contact centers and/or contact center components with developers. In addition, CRM vendors are increasingly offering features and functionality that were traditionally provided by contact center providers. CRM vendors also continue to partner with contact center service providers to provide integrated solutions and may, in the future, acquire competitive contact center service providers. These factors could cause CRM vendors to reduce or terminate their partnerships with us, and could result in increased competition. Because CRM integration and partnerships are critical to the success of our solution, these factors could harm our revenue and results of operations.

Some of our competitors can devote significantly greater resources than we can to the development, promotion and sale of their products and services and many have the ability to initiate or withstand substantial price competition. Current or potential competitors may also be acquired by third parties with significantly greater

resources. Many of our competitors have stronger name recognition, longer operating histories, larger marketing budgets, greater financial or technical resources, better established relationships with clients, more comprehensive product offerings, larger installed bases and major distribution agreements with consultants, system integrators and resellers. Our competitors may also establish cooperative relationships among themselves or with third parties that may further enhance their product offerings or resources and ability to compete. With the introduction of new technologies and market entrants, we expect competition to continue to intensify in the future. Our recent, and any future, acquisitions will subject us to new competitors and cause us to face additional and different competition in the markets served by these businesses. If our competitors' products, services or technologies become more accepted than our solution, if they are successful in bringing their products or services to market earlier than ours, or if their products or services are less expensive or more technologically capable than ours, our revenues could be harmed. Pricing pressures and increased competition could result in reduced sales and revenues, reduced margins and loss of, or a failure to maintain or improve, our competitive market position, any of which could harm our business.

If we fail to grow our marketing capabilities and develop widespread brand awareness cost effectively, our business may suffer.

Our ability to increase our client base and achieve broader market acceptance of our cloud contact center software solution will depend to a significant extent on our ability to expand our marketing operations. We plan to continue to dedicate significant resources to our marketing programs, including internet advertising, digital marketing campaigns, social media, trade shows, industry events, co-marketing with strategic partners, telemarketing and out of home campaigns. The effectiveness of our internet advertising and the overall cost of internet advertising has varied over time and may vary in the future due to competition for key search terms, changes in search engine use, changes in the manner in which the leading internet advertising companies approach internet advertising, including through their policies, and changes in the search algorithms used by major search engines, any of which could result in an increase in the time spent and other financial expenditures associated with our internet advertising and a decrease in the effectiveness of our internet advertising. All of these efforts will continue to require us to invest significant financial and other resources in our marketing efforts. Our business will be seriously harmed if our efforts and expenditures do not generate a proportionate increase in revenue.

In addition, we believe that developing and maintaining widespread awareness of our brand in a cost-effective manner, both in the United States and internationally, is critical to achieving widespread acceptance of our solution, expanding our business with existing clients and attracting new clients. Brand promotion activities may not generate client awareness or increase revenues, and even if they do, any increase in revenues typically occurs after the expense has been incurred, and may not offset the costs and expenses of building our brand. If we fail to successfully promote, maintain and protect our brand, or incur substantial costs and expenses, we may fail to attract or retain clients necessary to realize a sufficient return on our brand-building efforts, or to achieve the widespread brand awareness that is critical to increasing client adoption of our solution.

Risks Related to Our Solution

If we fail to manage our technical operations infrastructure, our existing clients may experience service outages, our new clients may delay or decide against deployment of our solution, existing clients may decide to move to another vendor, and we could be subject to claims for credits, damages or other actions.

Our success depends in large part upon the capacity, stability, security and performance of our technical operations infrastructure, which currently relies upon a mix of external data centers and, increasingly, public cloud providers. From time-to-time, we have experienced interruptions in service, and may experience such interruptions in the future. These service interruptions may be caused by a variety of factors, including infrastructure changes, human or software errors, telecom network outages, viruses, security attacks, fraud, spikes in client usage and denial of service issues. In some instances, we may not be able to identify the cause or causes of these performance problems, or remediate them within an acceptable period of time. Our failure to achieve or maintain expected performance levels, stability and security, particularly as we increase the number of users of our service and the product applications that run on our system, could harm our relationships with our clients, result in claims for credits or damages or other actions, damage our reputation, significantly reduce client demand for our solution, cause us to incur significant expense and personnel time replacing and upgrading our infrastructure, cause customer attrition, and harm our business.

We have experienced significant growth in the number of agent seats and interactions that our infrastructure supports. As the number of agent seats within our client base grows and our clients' use of our service increases, we

need to continue to make additional investments in our capacity to maintain adequate and reliable availability, stability and performance, the availability of which may be limited or the cost of which may be prohibitive, and any failure may cause interruptions in service that may harm our business. In addition, we need to properly manage our operations infrastructure in order to support version control, changes in hardware and software parameters and the evolution of our solution. If we do not accurately predict our infrastructure requirements or efficiently improve our infrastructure, our business could be harmed.

We host our solution at geographically redundant data centers in the United States, the United Kingdom, Europe and Australia and from public cloud locations in Canada, the United Kingdom and Europe. Any failure or downtime in one of our data center facilities could affect a significant percentage of our clients. While we control and have access to our servers and all of the components of our network that are located in our external data centers, we do not control the operation of these facilities. The owners of our data center facilities have no obligation to renew their agreements with us on commercially reasonable terms, or at all. If we are unable to renew these agreements on commercially reasonable terms, or if one of our data center operators is acquired, closes, suffers financial difficulty or is unable to meet our growing capacity needs, we may be required to transfer our servers and other infrastructure to new data center facilities, and we may incur significant costs and service interruptions in connection with doing so. While our data centers have redundant power, cooling and infrastructure, they are subject to various points of failure. Problems with cooling equipment, generators, uninterruptible power supply, routers, switches, or other equipment, whether or not within our control, could result in service interruptions for our clients as well as equipment damage. Our data centers are subject to disasters such as earthquakes, floods, fires, hurricanes, cyber attacks, acts of terrorism, sabotage, break-ins, acts of vandalism and other events, which could cause service interruptions or the operators of these data centers to close their facilities for an extended period of time or permanently. The destruction or impairment of any of our data center facilities could result in significant downtime for our solution and the loss of client data. Because our ability to attract and retain clients depends on our providing clients with highly reliable service, even minor interruptions in our service could harm our business, revenues and reputation. Additionally, in connection with the continuing expansion of our existing data center facilities, there is a risk that service interruptions may occur as a result of server addition, relocation or other issues.

We also host some of our voice services on the public cloud in Europe, Asia, South America and Australia as well as additional core services in Europe. We are also establishing new public cloud deployments of our platform in certain additional international markets. Our public cloud-based platform offering is critical to developing and providing our solution to our clients, scaling our business for future growth, accurately maintaining data and otherwise operating our business. We have little or no control over public cloud providers. Any disruption of the public cloud, deficiencies in the design, implementation, maintenance, or migration from one public cloud provider to another, or any failure of our public cloud providers to effectively design and implement sufficient security systems or plan for increases in capacity could, in turn, cause delays or disruptions in our services. In addition, using the public cloud presents a variety of additional risks, including risks related to sharing the same computing resources with others, reliance on public cloud providers' authentication, security, authorization and access control mechanisms, a lack of control over the public cloud's redundancy and security systems and fault tolerances, a reduced ability to control data security and privacy, and future unpredictable costs of these services.

Development of our AI solutions to make people more efficient, automate interactions through virtual agents to improve customer experience and provide conversational insights to customers may not be successful and may result in reputational harm and our future operating results could be materially harmed.

We plan to continue to increase, and provide our customers with, our AI-powered applications, including conversational virtual agents, agent assistance and business insights. In the fourth quarter of 2020, we enhanced our AI-powered applications with the acquisition of Inference Solutions Inc., or Inference, and now offer an integrated IVA platform with AI-enabled omni-channel service solutions. These applications are part of our comprehensive AI & Automation portfolio, which is now comprised of eight distinct modules, including speech analytics, workflow automation, voice IVA, digital IVA and Agent Assist as well as the recently launched Five9 Analytics, AI Insights and AI Summaries. While we aim for our AI-powered applications to make agents more efficient and improve customer experience, our AI models may not achieve sufficient levels of accuracy. In addition, we may not be able to acquire sufficient training data or our training data may contain biased or otherwise inaccurate information. Our competitors or other organizations may incorporate AI features into their products more quickly or more successfully and their AI features may achieve higher market acceptance than ours, which may result in us failing to recoup our investments in developing AI-powered applications and result in lost business. Should any of these items

or others occur, our ability to compete, our reputation and operating results may be materially and adversely affected.

If our solution fails, or is perceived to fail, to perform properly or if it contains technical defects, our reputation could be harmed, our market share may decline and we could be subject to product liability claims.

Our solution may contain undetected errors or defects that may result in failures or otherwise cause our solution to fail to perform in accordance with client expectations and contractual obligations. Moreover, our clients could incorrectly implement or inadvertently misuse our solution, which could result in client dissatisfaction and harm the perceived utility of our solution and our brand. Because our clients use our solution for critical aspects of their business, any real or perceived errors or defects in, or other performance problems with, our solution may damage our clients' businesses and could significantly harm our reputation. If that occurs, we could lose future sales, or our existing clients could cancel or reduce the use of our solution, seek payment credits or damages against us, or delay or withhold payment to us, which could result in reduced revenues, an increase in our provision for uncollectible accounts and service credits, an increase in collection cycles for accounts receivable, and harm our financial results. In addition, since telecommunications billing and associated telecom taxes and the related calculations and billing of telecom taxes are inherently complex and require highly sophisticated information systems to administer, our billing system may experience errors or we may improperly operate the system, which could result in the system incorrectly calculating the fees owed by our clients or related taxes and administrative fees. Clients also may make indemnification or warranty claims against us, which could result in significant expense and risk of litigation. Product performance problems could result in loss of market share, reputational harm, failure to achieve market acceptance and the diversion of development resources.

Any product liability, intellectual property, warranty or other claims against us could damage our reputation and relationships with our clients, and could require us to spend significant time and money in litigation or pay significant settlements or damages. Although we maintain general liability insurance, including coverage for errors and omissions, this coverage may not be available or sufficient to cover liabilities resulting from such claims. Also, our insurers may disclaim coverage. Our liability insurance also may not continue to be available to us on reasonable terms, in sufficient amounts, or at all. Any contract or product liability claims successfully brought against us would harm our business.

The contact center software solutions market is subject to rapid technological change, and we must develop and sell incremental and new features and components of our solution in order to maintain and grow our business.

The contact center software solutions market is characterized by rapid changes in client requirements, frequent introductions of new and enhanced products and features and continuing and rapid technological advancement. To compete successfully, we must continue to devote significant resources to design, develop, deploy and sell new and enhanced contact center solutions, applications and features that provide increasingly higher capabilities, performance and stability at lower cost. If we are unable to develop or acquire new features for our existing solution or new applications that achieve market acceptance or that keep pace with technological developments, our business would be harmed. We are focused on enhancing the reliability, features and functionality of our contact center solution to enhance its utility to our clients, particularly larger clients, with complex, dynamic and global operations. In addition, cloud-based technology advancements in areas such as AI are designed to enable improved customer experience, significant operational efficiencies and business insights. The success of these enhancements depends on many factors, including timely development, introduction and market acceptance, as well as our ability to transition our existing clients to these new solutions, applications and features. To the extent that these enhancements are made as a result of acquisitions, our success also depends on our ability to integrate the acquired technology with our existing solution. Any failure may significantly impair our revenue growth. In addition, because our solution is designed to operate on a variety of systems, we need to continuously modify and enhance our solution to keep pace with changes in hardware, operating systems, the increasing trend toward multi-channel communications and other changes to software technologies. We may not be successful in developing, acquiring or integrating these modifications and enhancements or bringing them to market in a timely fashion. Furthermore, uncertainties about the timing and nature of new network platforms or technologies, or modifications to existing platforms or technologies, could delay introduction of changes and updates to our solution and increase our research and development expenses. Any failure of our solution to operate effectively, including with future network platforms and technologies, could reduce the demand for our solution, result in client dissatisfaction and harm our business.

Our ability to continue to enhance our solution is dependent on adequate research and development resources. If we are not able to adequately fund our research and development efforts, we may not be able to compete effectively and our business and operating results may be harmed.

In order to remain competitive, we must devote significant and increasing resources to develop new solution offerings, features and enhancements to our existing cloud contact center software, which will increase our research and development and operating expenses. Our research and development expenses totaled \$141.8 million, \$106.9 million and \$68.7 million for the years ended December 31, 2022, 2021 and 2020, respectively. Maintaining adequate research and development personnel and resources to meet the demands of the market is essential. If we are unable to develop products, applications or features internally due to constraints, such as high employee turnover, insufficient cash, other cash needs of our business, inability to hire sufficient research and development personnel or a lack of other research and development resources, we may miss market opportunities. Furthermore, many of our competitors have greater financial resources and expend greater amounts on their research and development programs than we do, and those that do not may be acquired by larger companies that would allocate greater resources to our competitors' research and development programs. Our failure to devote adequate research and development resources or compete effectively with the research and development programs of our competitors could harm our business.

If we are unable to maintain the compatibility of our software with other solutions and technologies, our business could be harmed.

Our clients often integrate our solution with their business applications, particularly third-party CRM solutions. These third-party providers or their partners could alter their products so that our solution no longer integrates well with them, or they could delay or deny our access to technology releases that allow us to adapt our solution to integrate with their products in a timely fashion. In addition, to the extent that third-party providers are adversely impacted by macroeconomic deterioration, their development of software that is integrated with our solution may be delayed, which could have an adverse impact on the implementation of, or demand for, our solution by our clients. Such third-party providers could also favor integration of our competitors' products over our solution, making our solution less attractive to our clients. If we cannot adapt our solution to changes in complementary technology deployed by our clients, it may significantly impair our ability to compete effectively.

We are subject to many hazards and operational risks that can disrupt our business, some of which may not be insured or fully covered by insurance.

Our operations are subject to many hazards inherent in the cloud contact center software business, including:

- damage to third-party and our infrastructure and data centers, related equipment and surrounding properties caused by earthquakes, hurricanes, tornadoes, floods, fires and other natural disasters, explosions, cyber attacks and acts of terrorism;
- security breaches resulting in loss or disclosure of confidential client and customer data and potential liability to clients and non-client third parties for such losses on disclosures; and
- other hazards that could also result in suspension of operations, personal injury and even loss of life.

These risks could result in substantial losses and the curtailment or suspension of our operations. For example, in the event of a major earthquake or flooding on the West Coast of the United States (where our corporate headquarters and one of our data centers are located), hurricane, tropical storm, flooding or severe weather in the southeastern United States (where our other U.S. data center is located) or catastrophic events such as fire, power loss, telecommunications failure, cyber-attack, global pandemic, war or terrorist attack, we may be unable to continue our operations and may endure system and service interruptions, reputational harm, delays in product development, breaches of data security and loss of critical data, any of which could harm our business and operating results.

We are not insured against all claims, events or accidents that might occur. If a significant accident or event occurs that is not fully insured, if we fail to recover all anticipated insurance proceeds for significant accidents or events for which we are insured, or if we or our data center providers fail to reopen facilities damaged by such accidents or events, our operations and financial condition could be harmed. We may also incur significant expense in enforcing our rights against our insurance providers, whether or not successful. In addition to being denied coverage under existing insurance policies, we may not be able to maintain or obtain insurance of the type and amount we desire at reasonable rates.

Risks Related to Third-Party Technology Providers

We rely on third-party telecommunications and internet service providers to provide our clients and their customers with telecommunication services and connectivity to our cloud contact center software and any failure by these service providers to provide reliable services could cause us to lose clients and subject us to claims for credits or damages, among other things.

We rely on third-party telecommunication service providers to provide our clients and their customers with telecommunication services. These telephony services include the public switched telephone network, or PSTN, telephone numbers, call termination and origination services, and local number portability for our clients. In addition, we depend on our internet bandwidth suppliers to provide uninterrupted and error-free service through their telecommunications networks. Some of our services may require that users of our service obtain their own internet bandwidth. We exercise little control over these third-party providers, which increases our vulnerability to problems with the services they provide.

When problems occur, it may be difficult to identify the source of the problem. Service disruption or outages, whether caused by our service, the products or services of our third party service providers, or our clients' or their customers' equipment and systems, may result in loss of market acceptance of our solution and harm to our reputation and any necessary repairs or other remedial actions may force us to incur significant costs and expenses.

If any of these service providers fail to provide reliable services, suffer outages, degrade, disrupt, increase the cost of or terminate the services that we and our clients depend on, we may be required to switch to another service provider. Delays caused by switching our technology to another service provider, if available, and qualifying this new service provider could materially increase our costs, as well as harm our client relationships, business, financial condition and operating results. Further, any failure on the part of third party service providers to achieve or maintain expected performance levels, stability and security could harm our relationships with our clients, cause us to lose clients, result in claims for credits or damages, increase our costs or the costs incurred by our customers, damage our reputation, significantly reduce client demand for our solution and seriously harm our financial condition and operating results.

Our clients and their customers rely on internet service providers to provide them with access and connectivity to our cloud contact center software and changes in how internet service providers handle and charge for access to the internet could materially harm our client relationships, business, financial condition and operations results.

In 2015, the FCC released an order, commonly referred to as network neutrality, that, among other things, prohibited (i) the impairment or degradation of lawful internet traffic on the basis of content, application or service and (ii) the practice of favoring some internet traffic over other internet traffic based on the payment of higher fees. In June 2018, the FCC repealed the network neutrality regulations imposed by the 2015 order. Internet service providers in the U.S. may now be able to impair or degrade the use of, or increase the cost of using, our solution. The FCC's 2018 repeal was largely upheld by the D.C. Circuit Court of Appeals in a decision issued in October 2019. That same court rejected the FCC's attempt to preempt states from adopting their own network neutrality requirements. As a result, network neutrality regulations vary widely among both the domestic and international jurisdictions in which we operate. While certain jurisdictions have strong protections for services such as ours, others either lack a network neutrality framework or otherwise do not enforce network neutrality regulations. The impairment, degradation or prioritization of lawful internet traffic by internet service providers could materially harm the performance of our solution, our client relationships, business, financial condition and operating results.

Risks Related to Our International Operations

We continue to expand our international operations, which exposes us to significant risks.

To date, we have not generated significant revenues outside of the U.S., Canada, the U.K., Latin America and Australia. However, we already have significant operations outside these countries and regions, and we expect to grow our international presence in the future. Our international employees are primarily located in the Philippines, where technical support, training and other professional services are performed, Portugal, where we continue to transition portions of engineering and operations previously performed in Russia, and Australia, where additional portions of engineering and operations are now performed. In March 2022, we made a decision to close our Russia office and to establish a new European development center in Portugal. While approximately half of our Russian-citizen employees have received visas and have moved to Portugal, it was not feasible to move and retain all of the Russian-citizen employees in connection with growing our overall operations presence in Portugal, we have

expanded recruiting and employment-related efforts in Portugal to further enhance our operations. We have and will continue to incur costs in connection with this transition, and during the transition we have and may continue to experience operational disruptions. There can be no assurance that our new Portuguese operations will be as effective or as efficient as our prior Russian operations, which could harm our business and results of operations. The future success of our business will depend, in part, on our ability to expand our operations and customer base to other countries, including our new location in Portugal.

Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic, and political risks that are different from those in the U.S. In addition, in order to effectively market and sell our solution in international markets, we often must localize our solution, including the language in which our solution is offered, which increases our costs, could result in delays in offering our solution in these markets and may decrease the effectiveness of our sales efforts. Due to our limited experience with international operations and developing and managing sales and distribution channels in international markets, our international expansion efforts may not be successful.

We also will continue to incur additional compliance costs associated with our international operations, including costs associated with expanding and rapidly changing sanctions and other trade controls. In addition, we may be unaware or unable to keep current with changes in foreign government requirements and laws as they change from time to time, which often occurs with minimal or no advance notice. Failure to comply with these regulations could harm our business. In many countries outside the United States, it is common for others to engage in business practices that are prohibited by our internal policies and procedures or United States or international laws and regulations applicable to us. Although we have implemented policies and procedures designed to ensure compliance with these laws and policies, there can be no assurance that all of our employees, contractors, strategic partners and agents will comply with these laws and policies. Violations of laws or key control policies by our employees, contractors, strategic partners or agents could result in delays in revenue recognition, financial reporting misstatements, fines, delays in filing financial reports required as a public company, penalties, prohibitions on selling our solution or harm to our reputation, any of which could harm our business.

While we have worked to avoid and mitigate any effects of the Russia-Ukraine conflict on our business, employees and clients, the conflict is ongoing, and its ultimate scope and broader impacts cannot be predicted with certainty. While the conflict has not yet had a negative impact on our employees, business, or operations outside of Russia, it could, and if the conflict or related geopolitical tensions extend to other countries, negative impacts could also expand. Our business and operations could be harmed and our costs could increase if our or our clients' or other partners' manufacturing, logistics or other operations, costs or financial performance are disrupted or adversely affected. The Russia-Ukraine conflict has also had an adverse impact on the global economy, including on the inflation rate, and has contributed to significant fluctuation in global stock markets, including The NASDAQ Stock Market, on which our common stock is listed. All of these risks and conditions could harm our future sales, business and operating results.

Sales to clients outside the United States or with international operations and our international sales efforts and operations support expose us to risks inherent in international sales and operations.

A key element of our growth strategy is to expand our international sales efforts and develop a worldwide client base. Because of our limited experience with international sales, our international expansion may not be successful and may not produce the return on investment we expect. To date, we have realized only a small portion of our revenues from clients outside the United States, with approximately 90% of our revenue for the year ended December 31, 2022 derived from clients with billing addresses in the United States.

We have increased and are continuing to increase our sales, marketing and support personnel in both the U.K. and the European Union. We have enlarged our data centers in the U.K. and Amsterdam and are increasing our use of public cloud solutions in the European Union as well. Operating in international markets requires significant resources and management attention and subjects us to intellectual property, regulatory, economic and political risks that are different from those in the United States. As we increase our international sales efforts and continue and increase our other international operations, we will face increased risks in doing business internationally that could harm our business, including:

- the need to establish and protect our brand in international markets;
- the need to localize and adapt our solution for specific countries, including translation into foreign languages and associated costs and expenses;
- difficulties in staffing and managing foreign operations, particularly hiring and training qualified sales and service personnel;

- the need to implement and offer customer care, in various languages;
- different pricing environments, longer sales and accounts receivable payment cycles and collections issues;
- weaker protection for intellectual property and other legal rights than in the U.S. and practical difficulties in enforcing intellectual property and other rights outside of the U.S.;
- privacy and data protection laws and regulations that are complex, expensive to comply with and may require that client data be stored and processed in a designated territory;
- increased risk of piracy, counterfeiting and other misappropriation of our intellectual property in our locations outside the U.S.;
- new and different sources of competition;
- general economic conditions in international markets;
- fluctuations in the value of the U.S. dollar and foreign currencies, which may make our solution more expensive in other countries or may increase our costs, impacting our operating results when translated into U.S. dollars;
- compliance challenges related to the complexity of multiple, conflicting and changing governmental laws and regulations, including employment, tax, telecommunications and telemarketing laws and regulations;
- increased risk of international telecom fraud;
- laws and business practices favoring local competitors;
- compliance with laws and regulations applicable to foreign operations and cross border transactions, including the Foreign Corrupt Practices Act, the U.K. Bribery Act and other anti-corruption laws, supply chain restrictions, import and export control laws, tariffs, trade barriers, economic sanctions and other regulatory or contractual limitations on our ability to sell our solution in certain foreign markets, and the risks and costs of non-compliance;
- increased financial accounting and reporting burdens and complexities;
- restrictions or taxes on the transfer of funds;
- adverse tax consequences; and
- unstable economic and political conditions and potential accompanying shifts in laws and regulations.

These risks could harm our international operations, increase our operating costs and hinder our ability to grow our international business and, consequently, our overall business and results of operations.

Other Operational Risks

Adverse economic conditions may harm our business.

Our business depends on the overall demand for cloud contact center software solutions, the economic health of our current and prospective clients and worldwide economic conditions. In addition to the United States, Canada, Europe, Latin America and Australia, we plan in the future to market and sell our solution in Asia and other international markets. Adverse economic conditions in these markets, including declining worldwide economic conditions, increased inflation rates, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency exchange rates, has and will likely continue to reduce overall demand for our solution, particularly in our installed base. These factors could also delay our clients' implementation of our solution, delay or lengthen sales cycles, delay international expansion, lower prices for our solution, and may also lead to longer collection cycles for payments due from our clients, as well as result in an increase in client bad debt. While the implications of macroeconomic events on our business, results of operations and overall financial position remain uncertain over the long term, we continue to experience macroeconomic headwinds on our installed base business, which typically contributes approximately half of our revenue growth, particularly in two verticals, healthcare and consumer, which are typically our two strongest seasonal industries in the fourth quarter. There has also been some adverse impact on the mid-market portion of our net new clients business. All of these potential circumstances could lead to slower growth, or even a decline in, our revenues, operating results and cash flows.

Security breaches and improper access to or disclosure of our data or our clients' data, or other cyber attacks on our systems, could result in litigation and regulatory risk, harm our reputation and our business.

Our solution involves the storage and transmission of our clients' information, including information about our clients' customers or other information treated by our clients as confidential. Unauthorized access, unauthorized

use of our systems, security breaches or other cyber attacks could result in the loss of confidentiality, integrity and availability of such information, leading to litigation, governmental investigations and enforcements actions, indemnity obligations, increased expense, and other liability. Such incidents could also cause interruptions to the solutions we provide, degrade the user experience, harm our reputation or cause clients to lose confidence in our solution.

We are required to comply with laws and regulations that require us to maintain the security of personal data and we may have contractual and other legal obligations to notify customers or other relevant stakeholders of security breaches. While we have implemented security measures to protect client information and minimize the risk of security breaches and other cyber attacks, if these measures fail as a result of a cyber-attack, other third-party action, employee error, malfeasance or otherwise, and someone unlawfully or without authorization obtains access to our clients' information, including personal data, our reputation could be damaged, our business may suffer and we could incur significant liability. Because the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. In addition, third parties may attempt to fraudulently induce employees or users to disclose information in order to gain access to our data or our users' data. Such security breaches could lead to negative publicity, may cause our customers to lose confidence in the effectiveness of our security measures and require us to respond to and/or mitigate the security breach. Accordingly, if our cybersecurity measures fail to protect against unauthorized access, attacks, compromise or the mishandling of data by our employees, then our reputation, business, results of operations and financial condition could be adversely affected. Moreover, any failure on the part of third parties, including our clients, to maintain appropriate security measures for their own systems could harm our relationships with our clients, result in claims against us for credits or damages, damage our reputation and significantly reduce client demand for our solution. Any or all of these issues could harm our ability to attract new clients, cause existing clients to cancel, reduce or not renew their subscriptions, result in reputational damage or subject us to third-party lawsuits, governmental investigations and enforcement actions, regulatory fines or other action or liability, including orders or consent decrees forcing us to modify our business practices, all of which could materially harm our business, reputation or financial results.

We are undergoing changes to our management team; we depend on our senior management team, and the loss of one or more of our senior leadership team or other key employees could harm our business and results of operations.

On October 7, 2022, our Chief Executive Officer resigned as our Chief Executive Officer and from our Board of Directors, effective November 28, 2022. On October 10, 2022, we announced the appointment, effective as of November 28, 2022, of Michael Burkland as our new Chief Executive Officer. Mr. Burkland previously served as our Chief Executive Officer from 2008 until he resigned due to personal health reasons in 2017, and has remained on our Board of Directors either as Executive Chairman or Chairman since that time. Our Chief Executive Officer transition may be disruptive to, or cause uncertainty in, our business and our relationships with clients, business partners, stockholders and employees, and could lead to attrition of management and key employees. If we are unable to execute an orderly transition and successfully integrate Mr. Burkland back into our management team, our business could be harmed.

Our success depends, in part, upon the performance and continued services of our senior leadership team, including our new Chief Executive Officer. If our senior leadership team, including our Chief Executive Officer, fails to perform effectively or if we fail to attract or retain key executives, senior management or other key employees, our business, financial condition or results of operations could be harmed. We also rely on our leadership team, key employees, and critical individual contributors in all of our functional areas. The loss of one or more of our leadership team, key employees, and critical individual contributors could harm our business. We currently do not maintain key person life insurance policies on any of our employees.

If we are unable to attract and retain highly skilled leaders and other employees, our business and results of operations may be adversely affected.

To execute our growth plan, we must attract and retain highly qualified personnel, including key executives, senior management or other key employees, and we may incur significant costs, including stock-based compensation expense, to do so. Competition for these personnel is intense, especially for senior executives, engineers highly experienced in designing and developing cloud software and for senior sales personnel. We have, from time to time, experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications, and this difficulty could be further exacerbated by our Chief Executive Officer transition and any other senior leadership or other key employee transitions we experience. We invest significant time and expense in

training our employees, which increases their value to competitors who may seek to recruit them and increases our costs.

We believe that our corporate culture is a critical component to our ability to attract and retain employees. As we grow, we will need to continually enhance our efforts to maintain our corporate culture, which is more difficult due to our policies that continue to allow limited work from home flexibility stemming from the COVID-19 pandemic. We may experience increased attrition of employees to other opportunities, as certain employees may seek more flexible work alternatives than we offer, may seek positions with companies outside of the geographic area in which they live that offer remote work opportunities, or may decide to scale back their work life for personal reasons. Many of the companies with which we compete for experienced personnel have greater resources than we have and may offer more flexible work alternatives such as permanent remote work or work from home. If we fail to attract new personnel or fail to retain and motivate our current personnel, particularly our senior leadership team and our other key employees, our business and future growth prospects would be harmed. In addition, if we hire employees from competitors or other companies, their former employers may attempt to assert that these employees or we have breached legal obligations, resulting in a diversion of our time and resources and, potentially, damages.

Volatility or lack of performance in the trading price of our common stock, including the declines in our trading price over the recent past, may also affect our ability to attract and retain qualified personnel because job candidates and existing employees often emphasize the value of stock awards when considering whether to accept or continue employment. If the perceived value of our stock awards is low or declines, it may harm our ability to recruit and retain highly skilled employees.

We may acquire other companies, or technologies or be the target of strategic transactions, or be impacted by transactions by other companies, which could divert our management's attention, result in additional dilution to our stockholders or use a significant amount of our cash resources, and otherwise disrupt our operations and harm our operating results.

We may acquire or invest in businesses, applications or technologies that we believe could complement or expand our solution, enhance our technical capabilities or otherwise offer growth opportunities. For instance, in 2019, we acquired substantially all of the assets of Whendu LLC, or Whendu, including its iPaaS platform, and in 2020, we acquired both Virtual Observer and Inference. The pursuit of potential acquisitions may divert the attention of management, and cause us to incur various costs and expenses in identifying, investigating and pursuing acquisitions, whether or not they are consummated. We may not be able to identify desirable acquisition targets or be successful in entering into an agreement with any particular target. In addition, there has been a number of recent transactions in our industry and adjacent industries, which could have a negative impact on us.

To date, the growth in our business has been primarily organic, and we have limited experience in acquiring other businesses. With respect to our recent acquisitions and any future acquisitions, we may not be able to successfully integrate acquired personnel, operations, product features and technologies, or effectively manage the combined business following the acquisition. We also may not achieve the anticipated benefits from these or any future acquisitions due to a number of factors, including:

- inability to integrate or benefit from acquisitions in a profitable manner;
- unanticipated costs or liabilities associated with the acquisition, including legal claims to enforce our rights under the acquisition agreements or arising from the activities of the companies or businesses we acquire;
- acquisition-related costs;
- difficulty converting the clients of the acquired business to our solution and contract terms, including due to disparities in the revenue, licensing, support or professional services model of the acquired company;
- difficulty integrating the accounting systems, operations and personnel of the acquired business;
- difficulties and additional costs and expenses associated with supporting legacy products and the hosting infrastructure of the acquired business;
- diversion of management's attention from other business concerns;
- harm to our existing relationships with our partners and clients as a result of the acquisition;
- the loss of our or the acquired business's key employees;
- diversion of resources that could have been more effectively deployed in other parts of our business; and
- use of substantial portions of our available cash to consummate the acquisition.

In addition, a significant portion of the purchase price of companies and businesses we acquire may be allocated to acquired goodwill and other intangible assets, which must be assessed for impairment at least annually. If our acquisitions do not yield expected returns, we may be required to take charges to our operating results based on this impairment assessment process, which could harm our results of operations.

Acquisitions could also result in dilutive issuances of equity securities, the use of our available cash, or the incurrence of additional debt to fund such acquisitions, which could harm our operating results. To the extent that we intend to issue stock in any acquisitions, volatility in our stock price could make it more difficult or dilutive to make these acquisitions. If an acquired business fails to meet our expectations, our operating results, business and financial condition could suffer.

In addition, third parties may be interested in acquiring us. We will continue to consider, evaluate and negotiate any such transactions as we deem appropriate. Such potential transactions may divert the attention of management, and cause us to incur various costs and expenses in investigating, evaluating and negotiating such transactions, whether or not they are consummated.

We may not be able to secure additional financing on favorable terms, or at all, to meet our future capital needs.

To date, we have financed our operations, primarily through sales of our solution, lease facilities and the net proceeds from our equity and debt financings, including the sale of our convertible senior notes. We do not know when or if our operations will generate sufficient cash to fund our ongoing operations. We may require additional capital to respond to business opportunities, challenges, acquisitions, a decline in sales, increased regulatory obligations or unforeseen circumstances and may engage in equity or debt financings or enter into credit facilities.

We have a substantial amount of debt. As of December 31, 2022, we had approximately \$747.7 million in principal outstanding under our convertible senior notes issued in May 2018 and in May and June 2020. See Note 6 to the consolidated financial statements.

Any debt financing obtained by us in the future would cause us to incur additional debt service expenses and could include restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and pursue business opportunities and future debt could be secured by all of our assets. If we raise additional funds through further issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution in their percentage ownership of our company, and any new equity securities we issue could have rights, preferences and privileges senior to those of holders of our common stock. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to grow and support our business and to respond to business challenges could be significantly harmed.

If we are unable to maintain and further develop effective internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock may decrease.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal controls. Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report and attestation from our independent registered public accountant on our internal control over financial reporting. This attestation has and will continue to increase our independent public accountant costs and expenses.

If we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective, which could cause our stock price to decline. A “material weakness” is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis.

If we have material weaknesses in our internal control over financial reporting, we may not detect errors on a timely basis and our financial statements may be materially misstated. If we identify material weaknesses in our internal control over financial reporting, if we are unable to comply with the requirements of Section 404 in a timely manner, if we are unable to assert that our internal control over financial reporting is effective or if our independent registered public accounting firm is unable to attest that our internal control over financial reporting is effective, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our

common stock could decrease. We could also become subject to stockholder or other third-party litigation as well as investigations by the stock exchange on which our securities are listed, the SEC or other regulatory authorities, which could require additional financial and management resources and could result in fines, penalties, trading suspensions or other remedies.

Changes in financial accounting standards or practices may cause adverse, unexpected financial reporting fluctuations and affect our reported operating results.

U.S. GAAP is subject to interpretation by the FASB, the SEC and various bodies formed to promulgate and interpret appropriate accounting principles. A change in accounting standards or practices can have a significant effect on our reported results and may even affect our financial statements issued before the change is effective. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and will occur in the future. Changes to existing rules or the questioning of current practices may harm our reported financial results, result in restatements of prior periods, or the way we account for or conduct our business.

The application of any new accounting guidance is, and will be, based on all information available to us as of the date of adoption and up through subsequent interim reporting, including transition guidance published by the standard setters. However, the interpretation of these new standards may continue to evolve as other public companies adopt the new guidance and the standard setters issue new interpretative guidance related to these rules. As a result, changes in the interpretation of these rules could result in material adjustments to our application of the new guidance, which could have a material effect on our results of operations and financial condition. Additionally, any difficulties in implementing these pronouncements could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline, cessation or disruption of trading in our common stock and harm investors' confidence in us.

In addition, certain factors have in the past and may in the future cause us to defer recognition of revenues. For example, the inclusion in our client contracts of non-standard terms, such as acceptance criteria, could require the deferral of revenue. To the extent that such contracts become more prevalent in the future our revenue may be harmed.

Because of these factors and other specific requirements under U.S. GAAP for revenue recognition, we must have precise terms and conditions in our arrangements in order to recognize revenue when we deliver our solution or perform our professional services. Negotiation of mutually acceptable terms and conditions can extend our sales cycle, and we may accept terms and conditions that do not permit revenue recognition at the time of delivery.

Risks Related to Our Intellectual Property

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

Our success and ability to compete depend in part upon our intellectual property. As of December 31, 2022, our intellectual property portfolio included three registered U.S. trademarks, 15 issued U.S. patents, one pending U.S. patent application and one registered U.S. copyright. As of December 31, 2022, outside the U.S. we also had 10 trademark registrations, five issued patents, and two pending international PCT patent applications. The expiration dates of our issued patents range from 2030 to 2041. We primarily rely on copyright, trade secret and trademark laws, trade secret protection and confidentiality or license agreements with our employees, clients, partners and others to protect our intellectual property rights. However, the steps we take to secure, protect and enforce our intellectual property rights may be inadequate. We may not be able to obtain any further patents or trademarks, our current patents could be invalidated or our competitors could design their products around our patented technology, and our pending applications may not result in the issuance of patents or trademarks. We have pending patent applications and trademark registrations outside the U.S., and we may have to expend significant additional resources to obtain additional protection and maintain current registrations as we expand our international operations. Furthermore, legal standards relating to the validity, enforceability and scope of protection of intellectual property rights in other countries are uncertain and may afford little or no effective protection of our proprietary technology, and the risk of intellectual property misappropriation may be higher in these countries. As we expand into additional countries, these risks will be further enhanced. Consequently, we may be unable to prevent our proprietary technology from being infringed or exploited abroad, which could affect our ability to expand into international markets or require costly efforts to protect our technology.

In order to protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. Litigation brought to protect and enforce our intellectual property rights will be

costly, time consuming and distracting to our management and could result in the impairment or loss of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights, which could weaken our intellectual property protection. Accordingly, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property. Our failure to secure, protect and enforce our intellectual property rights could substantially harm the value of our technology, solutions, brand and business.

We will likely continue to be subject to third-party intellectual property infringement claims.

There is considerable patent and other intellectual property development activity and litigation in our industry. Our success depends upon our not infringing upon the intellectual property rights of others. Our competitors, as well as a number of other entities and individuals, may own or claim to own intellectual property relating to our industry. From time to time, third parties have claimed that we are infringing upon their intellectual property rights.

Certain technology necessary for us to provide our solution may be patented, copyrighted or otherwise protected by other parties either now or in the future. In such case, we would have to negotiate a license for the use of that technology. We may not be able to negotiate such a license at a price that is acceptable, or at all. The existence of such a patent, copyright or other protections, or our inability to negotiate a license for any such technology on acceptable terms, could force us to cease using such technology and offering solutions incorporating such technology.

Others have claimed, or in the future may claim, that our solution and underlying technology infringe or violate their intellectual property rights. However, we may be unaware of the intellectual property rights that others may claim cover some or all of our technology or solution. Any claims or litigation could cause us to incur significant costs and expenses and, if successfully asserted against us, could require that we pay substantial damages or ongoing royalty payments, require that we refrain from using, manufacturing or selling certain offerings or features or using certain processes, prevent us from offering our solution or certain features thereof, or require that we comply with other unfavorable terms, any of which could harm our business and operating results. We may also be obligated to indemnify our clients or business partners and pay substantial settlement costs, including royalty payments, in connection with any such claim or litigation and to obtain licenses, which could be costly. Even if we were to prevail in any such dispute, any litigation regarding our intellectual property could be costly and time consuming and divert the attention of our management and key personnel from our business operations.

Indemnity provisions in various agreements potentially expose us to substantial liability for intellectual property infringement and other losses.

In the ordinary course of business, we enter into agreements of varying scope and terms pursuant to which we agree to indemnify clients, vendors, lessors, business partners and other parties for third party claims with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, certain claims related to third-party privacy or cyber security breaches or from intellectual property infringement claims made by third parties. In addition, we have entered into indemnification agreements with our directors, officers and certain employees that will 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. Large indemnity payments or damage claims from contractual breach could harm our business, results of operations and financial condition. Although we typically contractually limit our liability with respect to such obligations, we may still incur substantial liability related to them. Any dispute with a client with respect to such obligations could be expensive, even if we ultimately prevail, and could harm our relationship with that client and other current and prospective clients, reduce demand for our solution and harm our business, results of operations and financial condition.

We employ third-party licensed software for use in or with our solution, and the inability to maintain these licenses or errors in the software we license could result in increased costs, or reduced service levels, which could harm our business.

Our solution incorporates certain third-party software obtained under licenses from other companies. We anticipate that we will continue to rely on current and new software from third parties in the future. Although we believe that there are commercially reasonable alternatives to the third-party software we currently license, this may not be the case, or may not be the case for new software that we license, or it may be difficult or costly to transition to other providers. In addition, integration of the software used in our solution with new third-party software may require significant work and require substantial investment of our time and resources. To the extent that our solution

depends upon the successful operation of third-party software in conjunction with our software, any undetected errors or defects in this third-party software could prevent the deployment or impair the functionality of our solution, delay new product or solution introductions, result in increased costs, or a failure of our solution and injure our reputation. Our use of additional or alternative third-party software would require us to enter into license agreements with third parties and to integrate such software to our solution.

There can be no assurance that the technology licensed by us will continue to provide competitive features and functionality or that licenses for technology currently utilized by us or other technology that we may seek to license in the future, including to replace current third-party software, will be available to us at a reasonable cost or on commercially reasonable terms, or at all. Third-party licensors may also be acquired or go out of business, which could preclude us from continuing to use such technology. The loss of, or inability to maintain, existing licenses could result in lost product features and litigation. The loss of existing licenses could also result in implementation delays or reductions until equivalent technology or suitable alternative solutions could be developed or identified, and licensed and these replacements integrated, and could increase our costs and harm our business.

Our solution utilizes open source software, and any failure to comply with the terms of one or more of these open source licenses could negatively affect our business.

Our solution includes software covered by open source licenses, which may include, for example, free general public use licenses, open source front-end libraries and open source applications. The terms of various open source licenses have not been interpreted by United States courts, and there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market our solution. By the terms of certain open source licenses, we could be required to release the source code of our proprietary software, and to make our proprietary software available under open source licenses, if we combine our proprietary software with open source software in a certain manner. In the event that portions of our proprietary software are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our technologies, or otherwise be limited in the licensing of our technologies, each of which could reduce or eliminate the value of our intellectual property, technologies and solutions. In addition to risks related to license requirements, usage of open source software can lead to greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or controls on the origin of the software. Given the nature of open source software, there is also a risk that third parties may assert copyright and other intellectual property infringement claims against us based on our use of certain open source software. Many of the risks associated with the usage of open source software cannot be eliminated and could harm our business.

Risks Related to Regulatory and Tax Matters

Failure to comply with laws and regulations could harm our business and our reputation.

Our business is subject to regulation by various federal, state, local and foreign governmental agencies, including agencies responsible for monitoring and enforcing laws and regulations related to employment and labor laws, workplace safety, environmental protection, privacy or data security, consumer protection, telecommunications services, anti-bribery, import/export controls, federal securities and taxes. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States and in other circumstances these requirements may be more stringent in the United States. Noncompliance with applicable regulations or requirements could subject us to investigations, sanctions, mandatory recalls, notification obligations, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties or injunctions. If any governmental sanctions, fines or penalties are imposed, or if we do not prevail in any civil or criminal litigation, our business, operating results, financial condition and reputation could be harmed. In addition, responding to any action will likely result in a significant diversion of management's attention and resources and an increase in professional fees. Enforcement actions and sanctions could further harm our business, operating results, financial condition and reputation.

Alleged or actual failure to comply with the constantly evolving legal and contractual environment surrounding calling consumers and wireless phone numbers by other companies or our competitors or governmental or private enforcement actions related thereto, could harm our business, financial condition, results of operations and cash flows.

The legal and contractual environment surrounding calling consumers and wireless phone numbers is constantly evolving. In the United States, two federal agencies, the Federal Trade Commission, or the FTC, and the

FCC, and various states have laws including, at the federal level, the TCPA that restrict the placing of certain telephone calls and texts to residential and wireless telephone subscribers by means of automatic telephone dialing systems, prerecorded or artificial voice messages and fax machines. These laws require companies to institute processes and safeguards to comply with these restrictions. The legal interpretation of certain of the requirements of these laws continue to be in dispute before the courts and federal agencies, and it is possible that legal decisions and agency actions may further alter the legal requirements involved. Some of these laws, where a violation is established, can be enforced by the FTC, FCC, State Attorneys General, or private party litigants. In these types of actions, the plaintiff may seek damages, statutory penalties, costs and/or attorneys' fees.

We have designed our solution to comply with these laws. To the extent that our solution is viewed by clients or potential clients as less functional, or more difficult to deploy or use, because of our solution's compliance features, we may lose market share to competitors that do not include similar compliance safeguards. Our contractual arrangements with our clients who use our solution to place calls also expressly require them to comply with all such laws and to indemnify us for any failure to do so. We take numerous steps to reasonably confirm that the use of our services complies with applicable laws. Even with these efforts, it is possible that the FTC, FCC, private litigants or others may attempt to hold our clients, or us as a software solution provider, responsible for alleged violations of these laws. To the extent any court finds that the software solution violated a controlling legal standard, we could face indemnification demands from our clients for costs, fees and damages with respect to calls placed using that solution. It also is possible that we may not successfully enforce or collect upon our contractual indemnities from our clients. Defending such suits can be costly and time-consuming and could result in fines, damages, expenses and losses. Additionally, these laws, and any changes to them or the interpretation thereof, that further restrict calling consumers, including to wireless phone numbers, adverse publicity regarding the alleged or actual failure by companies, including our clients and competitors, to comply with such laws or governmental or private enforcement actions related thereto, could result in a reduction in the use of our solution by our clients and potential clients, which could harm our business, financial condition, results of operations and cash flows.

On December 12, 2018, the FCC issued an order concluding that the Short Message Service, or SMS, or text messages, is an information service under federal law and not a telecommunications service. The regulatory significance to us is that the FCC's decision gives wireless carriers the flexibility to block SMS messages if the carriers identify the messages as unwanted by their wireless customers. Such blocking efforts by carriers may make it more difficult for our clients to use SMS messages that are provided by us as a part of our overall communications and outreach solution for our clients. Thus, although SMS comprises only a very small portion of our revenue base, its future availability as an effective tool for communication and outreach for our clients and their customers is uncertain and could cause our solution to be less valuable to clients and potential clients.

Increased taxes on our service may increase our clients' cost of using our service and/or increase our costs and reduce our profit margins to the extent the costs are not passed through to our clients, and we may be subject to liabilities for past sales and other taxes, surcharges and fees.

Based on analysis of our activities, we have determined that we are obligated to collect and remit U.S. state or local sales, use, gross receipts, excise and utility user taxes, as well as fees or surcharges as a communications service provider in certain U.S. states, municipalities or local tax jurisdictions. We are registered for collecting and remitting applicable taxes where such a determination has been made. Prior to our making such determination, we neither collected nor remitted these taxes, fees or surcharges to applicable local, municipal or state jurisdictions. We continue to analyze our activities to determine if we are subject to these taxes in additional jurisdictions and based on our ongoing assessment of our U.S. state and local tax collection and remittance obligations, we register for tax and regulatory purposes in such jurisdictions and commence collecting and remitting applicable state and local taxes and surcharges to these jurisdictions.

We have accrued a contingent liability of \$1.2 million for our best estimate of the probable amount of taxes and surcharges that may be imposed by various states and municipalities on our activities, including our usage-based and subscription services, prior to registration. This contingent liability is based on our analysis of a number of factors, including the source location of our usage-based fees, the taxability of our subscription services and the rules and regulations in each state. The actual amount of state and local taxes and surcharges paid may differ from our estimates. See Note 10 to the consolidated financial statements.

While we have accrued for these potential liabilities in each period, such accruals are based on analyses of our business activities, the operation of our solution, applicable statutes, regulations and rules in each state and locality and estimates of sales subject to sales tax or other charges. State and local taxing and regulatory authorities may

challenge our position and may decide to audit our business and operations with respect to state or local sales, use, gross receipts, excise and utility user taxes, fees or surcharges, which could result in our being liable for taxes, fees, or surcharges, as well as related penalties and interest, above our recorded accrued liability or additional liability for taxes, fees, or surcharges, as well as penalties and interest for our clients, which could harm our results of operations and our relationships with our clients. In addition, if our international sales grow, additional foreign countries may seek to impose sales or other tax collection obligations on us, which would increase our exposure to liability.

The applicability of state or local taxes, fees or surcharges relative to services such as ours is complex, ambiguous and subject to interpretation and change. If states enact new legislation or if taxing and regulatory authorities promulgate new rules or regulations or expand or otherwise alter their interpretations of existing rules and regulations, we could incur additional liabilities. The amount that we are required to pay under certain of these tax and regulatory structures also continues to increase as a percentage of our telecommunications revenues. The collection of additional taxes, fees or surcharges in the future could increase our prices or reduce our profit margins. Compliance with new or existing legislation, rules or regulations may also make us less competitive with those competitors who are not subject to, or choose not to comply with, such legislation, rules or regulations. We have incurred, and will continue to incur, substantial ongoing costs associated with complying with state or local tax, fee or surcharge requirements in the numerous markets in which we conduct or will conduct business.

Our ability to maintain compliance with complex rules and technological requirements intended to prevent robocalls and caller ID spoofing poses a significant business risk due to possible blocking of client voice traffic.

The FCC has adopted rules based on federal statute that require all providers of voice communications services, with limited exceptions, to implement the STIR/SHAKEN caller identification authentication framework designed to reduce fraudulent robocalls and illegal phone number identification, or ID, spoofing. STIR stands for Secure Telephony Identity Revisited. SHAKEN stands for Secure Handling of Asserted information using toKENs. We have completed our implementation of STIR/SHAKEN technology, but the implementation process was complex and involved compliance with a number of related regulatory regimes.

STIR/SHAKEN is a series of protocols and a governance framework in which the originating voice service provider attests to the calling party's identity and is intended to ensure the caller's ID has not been spoofed in order to reduce the number of illegal robocalls. The STIR/SHAKEN regulatory framework creates a significant business risk for companies such as ours that include clients that originate large volumes of telephone calls to consumers because, if an intermediate or terminating carrier is unable to verify the authenticity of an incoming call from one of our clients, they may block the call, preventing it from reaching the intended party, which would damage our relationship with our clients, and make our solution less attractive to our clients and potential clients.

In addition, the FCC is requiring voice service providers to implement other robocall prevention measures, including registering with the FCC's Robocall Mitigation Database and maintaining a robocall mitigation plan that includes conducting due diligence on customers to ensure they do not engage, or appear to engage, in robocalling or caller ID spoofing. Third party complaints and unusual calling patterns on end user bills must be investigated and the services of non-compliant clients terminated. Voice service providers must also participate in an Industry Traceback Group program to further demonstrate their commitment to preventing robocalls and caller ID spoofing. We have implemented these remedial measures to ensure that other carriers do not misidentify or block voice traffic originated by our clients. Although we believe we have achieved full compliance, the regulatory measures to prevent robocalling and caller ID spoofing are relatively new, complex and continue to change and therefore pose a risk to all voice service providers with respect to the possible misidentification and blocking of voice calls originated by their clients. These new compliance measures have and will increase our regulatory compliance and other costs, could make our solution less attractive to our clients, and any non-compliance could subject us to fines, damages and penalties, or injunctions precluding the use of our solutions or certain features thereof.

Our ability to offer services outside the United States is subject to different regulatory and taxation requirements, which may be complicated and uncertain.

As we continue to expand the sale and implementation of our solution internationally, we will be subject to additional regulations, taxes, surcharges and fees. Compliance with these new complex regulatory requirements differ from country to country, and are frequently changing and may impose substantial compliance burdens on our business. At times, it may be difficult to determine which laws and regulations apply and we may discover that we are required to comply with certain laws and regulations after having provided services for some time in that jurisdiction, which could subject us to retroactive taxes, fees and penalties, and we may be subject to conflicting requirements. Additionally, as we expand internationally, the risk that governments will regulate or impose new or increased taxes or fees on our services increases. Any such additional regulation or taxes could decrease the value of our international expansion, or impede our ability to expand internationally, and therefore harm our results of operations.

We are subject to assessments for unpaid USF contributions, as well as interest thereon and civil penalties, due to our late registration and past failure to recognize our obligation as a USF contributor and as an international carrier.

We are classified as a telecommunications service provider for regulatory purposes and we are required to make direct contributions to the USF based on revenue we receive from the resale of interstate and certain international telecommunications services. In order to comply with the obligation to make direct contributions, we are registered with the Universal Service Administrative Company, or USAC, which is charged by the FCC with administering the USF, and have been remitting the required contributions to USAC since our registration with USAC in April 2013.

We also made retroactive USF contributions based on our revenues for the period from 2008 to 2012. We have an unresolved and arguably dormant dispute with the FCC, however, regarding whether we are liable for USF contributions related to the period from 2003 through 2007. As of December 31, 2022, we had accrued \$0.1 million in interest related to the disputed assessments for the period of 2003 through 2007. See Note 10 to the consolidated financial statements.

Our ongoing obligations to pay federal, state and local telecommunications contributions and taxes may decrease our price advantage over, and ability to compete with our competitors who are not subject to, or choose not to comply with, those requirements. In addition, if we are unable to continue to pass some or all of the cost of these contributions and taxes to our clients, our profit margins on the telecommunication service minutes we resell will decrease. Our federal contributions and tax obligations may significantly increase in the future, due to new interpretations by governing authorities, governmental budget pressures, changes in our business model or solutions or other factors.

If we do not comply with FCC rules and regulations, we could be subject to further FCC enforcement actions, fines, loss of licenses and possibly restrictions on our ability to operate or offer certain of our services.

Since our business is regulated by the FCC, we are subject to existing or potential FCC regulations relating to privacy, disability access, porting of numbers, USF contributions and other requirements. If we do not comply with FCC rules and regulations, we could be subject to FCC enforcement actions, fines, loss of licenses and possibly restrictions on our ability to operate or offer certain of our services. Any enforcement action by the FCC, which may be a public process, would hurt our reputation in the industry, could impair our ability to sell our services to clients and could harm our business and results of operations.

The regulations to which we are subject (in whole or in part) include:

- the TRACED Act and corresponding regulations from the FCC, which requires carriers to authenticate incoming calls using the STIR/SHAKEN caller ID framework and correspondingly compels providers of telecommunications services to implement capabilities to certify as authentic the traffic they provide to those carriers;
- the Communications Assistance for Law Enforcement Act, or CALEA, which requires covered entities to assist law enforcement in undertaking electronic surveillance;

- enhanced 911 rules, KARI’s Law and RAY BAUM’s Act, which, in some circumstances, require telecommunications service providers to ensure their users can directly dial 911 emergency services and, if technically feasible, automatically convey dispatchable location information with the call;
- contributions to the USF which requires that we pay a percentage of our revenues resulting from the provision of interstate and some international telecommunications services to support certain federal programs;
- payment of annual FCC regulatory fees based on our interstate and international revenues;
- rules pertaining to access to our services by people with disabilities and contributions to the Telecommunications Relay Services fund; and
- FCC rules regarding CPNI which requires that we limit disclosure of certain information received from customers without client approval, subject to certain exceptions.

If we do not comply with any current or future rules or regulations that apply to our business, we could be subject to additional and substantial fines and penalties, we may have to restructure our solution, exit certain markets, accept lower margins or raise the price of our solution, any of which could harm our business and results of operations.

Reform of federal and state USF programs could increase the cost of our service to our clients, diminishing or eliminating our pricing advantage.

The FCC and a number of states are considering reform or other modifications to USF programs. The way we calculate our contribution may change if the FCC or certain states engage in reform or adopt other modifications.

Should the FCC or certain states adopt new contribution mechanisms or otherwise modify contribution obligations that increase our contribution burden, we will either need to raise the amount we currently collect from our clients to cover this obligation or absorb the costs, which would reduce our profit margins. Furthermore, the FCC has ruled that states can require us to contribute to state USF programs. A number of states already require us to contribute, while others are actively considering extending their programs to include the solution we provide. Currently our USF contributions are borne by our clients, which could result in our solution becoming less competitive as compared to products provided by our competitors.

We may not be able to utilize a significant portion of our net operating loss or research tax credit carryforwards, which could harm our profitability and financial condition.

As of December 31, 2022, we had federal, state and foreign net operating loss carryforwards due to prior period losses of \$456.9 million, \$310.9 million and \$13.5 million, respectively, available to reduce future income subject to income taxes. If not utilized, the federal and significant state net operating loss carryforwards will begin to expire in 2024 and 2028, respectively, while the foreign net operating loss carryforwards do not expire. As of December 31, 2022, we also had gross research credit carryforwards for federal and California state tax purposes of \$10.8 million and \$7.0 million, respectively. A portion of the federal research credit carryforwards will continue to expire in 2023. The California research credit carryforwards do not expire. If we are unable to generate sufficient taxable income to utilize our net operating loss and research tax credit carryforwards, these carryforwards could expire unused and be unavailable to offset future income tax liabilities, which could harm our profitability and financial condition in future periods.

In addition, under Section 382 of the Internal Revenue Code of 1986, as amended, or IRC Section 382, our ability to utilize net operating loss carryforwards or other tax attributes, such as research tax credits, in any taxable year may be limited if we experience an “ownership change.” An IRC Section 382 “ownership change” generally occurs if one or more stockholders or groups of stockholders who own at least 5% of our stock increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three-year period. Similar rules may apply under state tax laws. We experienced an ownership change prior to 2014 and the disclosed amounts of our net operating losses and research credit carryforwards have been reduced for the resulting effect of the IRC Section 382 limitations. Subsequent or future issuances or sales of our stock (including certain transactions involving our stock that are outside of our control) could cause an “ownership change” again, which would impose an annual limit on the amount of pre-ownership change net operating loss carryforwards and other tax attributes we can use to reduce our taxable income. This could potentially cause those tax attributes to expire unused or to be reduced, which would increase and accelerate our liability for income taxes. It is possible that such an

ownership change could materially reduce our ability to use our net operating loss carryforwards or other tax attributes to offset taxable income, which could require us to pay more income taxes than if we were able to fully utilize our net operating loss carryforwards and harm our profitability.

Privacy concerns and domestic or foreign laws and regulations may reduce the demand for our solution, increase our costs and harm our business.

Our clients use our solution to collect, transfer, use, and otherwise process, collectively, Process or Processing, personal data regarding their customers and potential customers. The Processing of personal data and other types of protected data subjects us and our customers to a number of domestic and international laws that govern and regulate the Processing of personal data and other types of protected data. These laws regulate and address a range of issues including data privacy (e.g., restrictions or technological or process requirements regarding the Processing of data), cybersecurity (e.g., requirements for the protection of personal data against compromise of the confidentiality, integrity, or availability of personal data), breach notification, data governance, and risk management and reporting. These laws can vary substantially from jurisdiction to jurisdiction, and are rapidly evolving. Domestic and international government authorities are considering adopting, or may adopt, laws and regulations in the future, regarding the Processing of personal data obtained from consumers and individuals.

In the U.S., there are numerous federal and state laws governing the privacy and security of personal data. For instance, we may be subject to FTC enforcement actions if the FTC has reason to believe we have engaged in unfair or deceptive privacy or data security practices in violation of the FTC Act. There are also new state privacy laws, including the California Consumer Privacy Act, or CCPA, the California Privacy Rights Act, or CPRA, the Colorado Privacy Act, or CPA, the Connecticut Data Privacy Act, or CDPA, the Utah Consumer Privacy Act, or UCPA, and the Virginia Consumer Data Protection Act, or VCDPA, that set forth comprehensive privacy obligations regarding the Processing of personal data. It is possible that other states may pass their own versions of data privacy laws.

Moreover, data protection laws and regulations outside the United States, including Brazil, Canada, China, Japan, Russia, Singapore, the United Kingdom and particularly in the EU, often are more restrictive than those in the United States. Such laws and regulations may have more stringent compliance obligations in regards to data protection. While some aspects of these laws are similar to the new U.S. state privacy laws in terms of providing for data subject privacy rights of access, deletion, correction, and portability, the EU laws often require affirmative consent for some types of data processing, and broader requirements for informing data protection authorities and individuals of security breaches that affect their personal data. We also may be bound by additional, more stringent contractual obligations relating to our collection, use, disclosure and data transfers of personal, financial, and other data outside the EU. It is possible that a governmental authority may implement a new law or interpret an existing law in a manner that limits our customers' ability to use our solution or that requires us to make costly or detrimental changes in our solution and services, whether on a one-time basis or as an ongoing increase in our operating costs and expenses. Further, some laws might require us to disclose proprietary or confidential aspects of our solution in a manner that compromises the effectiveness of our solution or that enables our competitors or bad actors to gain insight into the operation of our technology, enabling them to copy or circumvent our solution and thereby reducing the value of our technology.

The costs of compliance with, and other burdens imposed by, such laws and regulations that are applicable to us and the businesses of our clients may limit the use and adoption of our solution and reduce overall demand for our solution. Also, failure to comply with such laws may lead to significant fines, penalties or other regulatory liabilities, such as orders or consent decrees forcing us or our clients to modify business practices, and reputational damage or third-party lawsuits for any noncompliance with such laws. Our business could be harmed if legislation or regulations are adopted, interpreted or implemented in a manner that is inconsistent from country to country and inconsistent with our current policies and practices, or those of our clients.

Furthermore, data privacy and protection concerns may cause consumers to resist providing personal data or other types of protected data that may be subject to laws and regulations that is necessary to allow our clients to use our solution effectively. Even the perception of privacy concerns, whether or not valid, may inhibit market adoption of our solution in certain industries or countries.

The European Union's GDPR may continue to increase our costs and the costs of our clients to operate, limit the use of our solution or change the way we operate, exposes us to substantial fines and penalties if we fail to comply, and has led to similar laws being enacted in other jurisdictions.

The GDPR replaced the EU Data Protection Directive, also known as Directive 95/46/EC, and is intended to harmonize data protection laws throughout the EU by applying a single data protection law that is binding throughout each member state. We and many of our customers are subject to the GDPR based upon our processing of personal data collected from EU data subjects, such as our processing of personal data of our customers in the EU and our processing of our EU employees' personal data.

The GDPR enhances data protection obligations for processors and controllers of personal data, including, for example, expanded disclosures about how personal information is to be used, limitations on retention of information, mandatory data breach notification requirements and onerous new obligations on services providers. Non-compliance with the GDPR can trigger steep fines of up to €20 million or 4% of total worldwide annual turnover, whichever is higher. The member states of the EU were tasked under the GDPR to enact certain implementing legislation that would add to or further interpret the GDPR requirements and this additional implementing legislation potentially extends our obligations and potential liability for failing to meet such obligations.

Given the breadth and depth of changes in data protection obligations, our compliance with the GDPR's requirements will continue to require time, resources and review of the technology and systems we use to satisfy the GDPR's requirements. We have ongoing procedures to maintain GDPR compliance. We continue to deliver product features that enhance our data management and security in support of GDPR compliance.

Among the compliance obligations the GDPR raises for us and our customers are requirements regarding the transfer of personal data from the EU to other jurisdictions, including the United States. We continue to rely on Standard Contractual Clauses, or SCCs, and have updated our use of use of SCCs to the EU's latest versions, as well as separate U.K. versions of the SCCs. Even still, there continue to be EU legal decisions and certain regulatory guidance that cast doubt on the legality of EU-U.S. data flows in general. Any inability to transfer personal data from the EU to the U.S. in compliance with data protection laws may impede our ability to attract and retain customers and adversely affect our business and financial position. As a result, it may be necessary to establish additional systems and business operations in the EU to avoid the transfer of personal data out of the EU. Should a change in the conduct of our business be required, it may involve substantial expense and the diversion of resources from other aspects of our business, all of which may harm our business and results of operations.

Jurisdictions outside of the EU are also considering and/or enacting comprehensive data protection legislation. For example, on July 8, 2019, Brazil enacted the General Data Protection Law, or the LGPD, and on June 5, 2020, Japan passed amendments to its Act on the Protection of Personal Information, or the APPI. Both laws broadly regulate the processing of personal information in a manner comparable to the GDPR, and violators of the LGPD and APPI face substantial penalties. We also continue to see jurisdictions, such as Russia, imposing data localization laws, which under Russian laws require personal information of Russian citizens to be, among other data processing operations, initially collected, stored, and modified in Russia. Similarly, on November 1, 2021, China's Personal Information Protection law came into effect, which places restrictions on the transfer of personal information to third parties within China or overseas. These regulations may deter customers from using services such as ours, and may inhibit our ability to expand into those markets or prohibit us from continuing to offer services in those markets without significant financial burden.

The GDPR and other laws or regulations associated with the enhanced protection of certain types of personal data, could greatly increase our cost of providing our solutions and services, require significant changes to our operations or even prevent us from offering certain services in jurisdictions in which we operate. Failure to comply with data protection regulations may result in data protection authorities and other privacy regimes imposing additional obligations to obtain consent from data subjects by or on behalf of our customers. Additionally, the inability to guarantee compliance or otherwise provide acceptable privacy assurances may inhibit the sale and use of our software in the EU and certain other markets, which could, were it to occur, harm our business and operating results.

Because the interpretation and application of many privacy and data protection laws (including the GDPR), commercial frameworks, and standards are uncertain, it is possible that these laws, frameworks, and standards may be interpreted and applied in a manner that is inconsistent with our existing data protection practices. If so, we and our customers are at risk of enforcement actions taken by EU data protection authorities or litigation from consumer advocacy groups acting on behalf of data subjects. In addition to the possibility of fines, lawsuits, breach of contract claims, and other claims and penalties, we could be required to fundamentally change our business activities and

practices or modify our solutions, 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 security or 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.

U.S. state privacy laws, including the CCPA, CPA, CTDPA, UCPA and VCDPA could increase our costs and the costs of our clients to operate, limit the use of our solution or change the way we operate, and expose us to substantial fines and class action risk if we fail to comply, and lead to similar laws being enacted in other states.

The CCPA, CPA, CTDPA, UCPA and VCDPA apply to certain entities doing business in California, Colorado, Connecticut, Utah and Virginia. We and our qualifying customers were required to comply with the requirements of the CCPA on January 1, 2020 and have been subject to the VCDPA since January 1, 2023. The CPA and CTDPA will be effective July 1, 2023 and the UCPA will come into effect on December 31, 2023.

The U.S. state privacy laws establish a privacy framework for covered businesses by creating an expanded definition of personal data and creating new data privacy rights for eligible residents in those states, including the right to the right to access, delete or correct such data, the right to opt out of sales or use of their personal data for targeted advertising or profiling purposes, the right to limit the use and disclosure of their sensitive personal data and the right to be free from discrimination for exercising their rights. Eligible residents of those states may also appeal any decision or indecision related to the exercise of any of their data privacy rights. As required by the statutes, covered entities doing business in California, Colorado, Connecticut, Utah and Virginia have disclosure obligations to consumers for whom they collect or process personal data. Complying with these obligations involves continued expenditures that could increase as more consumers exercise their rights under the statute.

The U.S. state privacy laws create new and potentially severe statutory damages frameworks for violations of their provisions. Additionally, the CCPA creates a private right of action for consumers whose personal data is subject to a data breach. This private right of action has the potential to create significant class action liability for businesses, like ours, that operate in California. To protect against these new risks, it may be necessary to change our insurance programs.

The effects of the U.S. state privacy laws are potentially significant and may require us to modify our data collection or processing practices and policies and to incur substantial costs and expenses in an effort to comply and increase our potential exposure to regulatory enforcement and/or litigation. We anticipate that more states may enact legislation similar to the CCPA, CPA, CTDPA, UCPA and VCDPA, by providing consumers with new privacy rights and increases the privacy and security obligations of entities handling certain personal data of such consumers. These laws have prompted a number of proposals for new federal and state-level privacy legislation. Such proposed legislation, if enacted, may add additional complexity, variation in requirements, restrictions and potential legal risk, require additional investment of resources in compliance programs, impact strategies and the availability of previously useful data and could result in increased compliance costs and/or changes in business practices and policies.

Risks Related to Ownership of Our Convertible Senior Notes

Servicing our debt may require a significant amount of cash. We may not have sufficient cash flow from our business to pay our indebtedness, and we may not have the ability to raise the funds necessary to settle conversions of the convertible senior notes in cash or to repurchase the convertible senior notes for cash upon a fundamental change, which could adversely affect our business and results of operations.

In May 2018, we issued \$258.8 million in aggregate principal amount of the 2023 convertible senior notes in a private offering. In May 2020, we repurchased or exchanged \$181.0 million in aggregate principal amount of the 2023 convertible senior notes through individually negotiated private transactions in the 2023 Note Repurchase Transactions. As of December 31, 2022, after giving effect to the 2023 Note Repurchase Transactions and other settlements, we had approximately \$0.2 million in aggregate principal amount of the 2023 convertible senior notes outstanding. The 2023 convertible senior notes mature on May 1, 2023 and the interest rate of the 2023 convertible senior notes is fixed at 0.125% per annum, payable semiannually in arrears on May 1 and November 1 of each year.

In May and June 2020, we issued \$747.5 million in aggregate principal amount of the 2025 convertible senior notes in a private offering, all of which were outstanding as of December 31, 2022. The 2025 convertible senior notes mature on June 1, 2025, and the interest rate of the 2025 convertible senior notes is fixed at 0.500% per annum, payable semiannually in arrears on June 1 and December 1 of each year, beginning on December 1, 2020.

Our ability to make scheduled payments of principal and interest, or to refinance our indebtedness, including the convertible senior notes, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control, including those described in this report. Our business may not generate cash flows from operations in the future that are sufficient to service our debt and make necessary capital expenditures. If we are unable to generate sufficient cash flows, we may be required to pursue one or more alternatives, such as selling assets, restructuring debt or obtaining additional debt financing or equity capital on terms that may be onerous or highly dilutive to existing holders of our common stock. Our ability to obtain additional financing or refinance the 2025 convertible senior notes, or any future indebtedness, will depend on conditions in the capital markets and our financial condition at such time, among other factors. We may not be able to engage in any of these activities on favorable terms or at all, which could result in a default on our debt obligations or other material adverse effects on our business and financial condition.

Subject to certain conditions, holders of both series of the convertible senior notes have the right to require us to repurchase for cash all or any portion of their convertible senior notes upon the occurrence of a fundamental change (as defined in the indentures governing the convertible senior notes) at a fundamental change repurchase price equal to 100% of the principal amount of the applicable series of convertible senior notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the applicable fundamental change repurchase date.

Upon conversion of either or both series of convertible senior notes in accordance with their terms, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to settle a portion or all of our conversion obligation through the payment of cash. We may not have enough available cash or be able to obtain financing at the time we are required to make repurchases in connection with such conversion and our ability to pay may be further limited by law, regulatory authority or agreements governing our future indebtedness. Our failure to repurchase any convertible senior notes at a time when the repurchase is required by the applicable indenture or to pay any cash payable on any future conversions as required by the applicable indenture would constitute a default under such indenture. A default under either such indenture would lead to, and the occurrence of the fundamental change itself may also lead to, a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness or repurchase any convertible senior notes when required, or to make cash payments upon conversions thereof.

If triggered, the conditional conversion feature of the 2025 convertible senior notes may adversely affect our financial condition and operating results.

If and to the extent the conditional conversion feature of our 2025 convertible senior notes is triggered, holders of such convertible senior notes will be entitled to convert their convertible senior notes at any time during specified periods at their option. During the three months ended December 31, 2022, the conversion features of the 2025 convertible senior notes were not triggered. Accordingly, holders of the 2025 convertible senior notes are not entitled to convert such convertible senior notes from January 1, 2023 to March 31, 2023. Whether the 2025 convertible senior notes will be convertible after March 31, 2023 will depend on the satisfaction of the conversion conditions.

To the extent that the conditional conversion features of the 2025 convertible senior notes are triggered in the future, holders of the 2025 convertible senior notes will be entitled to convert their 2025 convertible senior notes at any time during the specified periods at their option. If one or more holders elect to convert their 2025 convertible senior notes during any such specified period, we have the option to pay or deliver, as the case may be, cash, shares of our common stock or a combination of cash and shares of our common stock, at our election. Any election to settle conversions of 2025 convertible senior notes with cash could adversely affect our liquidity.

Transactions relating to the convertible senior notes may dilute the ownership interests of our existing stockholders or adversely affect the market price of our common stock; the trading price of our convertible senior notes may be affected by volatility in the price of our common stock.

The conversion of some or all of either series of convertible senior notes would dilute the ownership interests of our existing stockholders to the extent we satisfy our conversion obligation by delivering shares of our common stock. In this regard, if holders of the convertible senior notes elect to convert their notes, we may settle our conversion obligations by delivering to them cash, shares of our common stock or a combination thereof. In addition, we may issue shares of our common stock in connection with repurchases, exchanges or other transactions involving the convertible senior notes, such as the 2023 Note Repurchase Transactions, which involved the issuance of 2,723,581 shares of our common stock to certain holders of the 2023 convertible senior notes. We received

elections to convert a significant portion of 2023 convertible senior notes from the fourth quarter of 2019 through the fourth quarter of 2022. We have elected to satisfy our obligations through the payment of cash in certain circumstances, the issuance of shares of common stock in other circumstances, or a combination thereof, to such convertible senior note holders. See Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operation—Liquidity and Capital Resources, for further discussion of our elections to satisfy our conversion obligations.

In addition, in connection with the issuance of the 2023 convertible senior notes and the 2025 convertible senior notes, we entered into capped call transactions with certain financial institutions, or the Option Counterparties. The capped call transactions are expected generally to reduce the potential dilution to holders of our common stock upon any conversion or settlement of either series of convertible notes and/or offset any cash payments we are required to make in excess of the principal amount of such convertible senior notes, as the case may be, with such reduction and/or offset subject to a cap under the terms of the capped call transactions. We expect that the Option Counterparties or their respective affiliates may from time to time purchase shares of our common stock and/or enter into various derivative transactions with respect to our common stock in connection with their hedging activities relating to the capped call transactions. The Option Counterparties or their respective affiliates also may modify their hedge positions by entering into or unwinding such derivative transactions and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the applicable maturity of either series of convertible senior notes. These activities could negatively affect the market price of our common stock.

Volatility and declines in the trading price of our common stock may result in decreases in the trading prices of our convertible senior notes. Our convertible senior notes do not trade in a liquid market and are thus subject to increased volatility, particularly when our common stock price is volatile.

General Risk Factors

Our stock price has been volatile, may continue to be volatile and may decline, including due to factors beyond our control.

The market price of our common stock has been volatile in the past and may fluctuate significantly in the future in response to numerous factors, many of which are beyond our control. During the twelve months ended December 31, 2022, the sale price per share of our common stock ranged from a low of \$46.61 to a high of \$144.24. Factors that may contribute to continuing volatility in the price of our common stock include:

- actual or anticipated fluctuations or declines in our operating results;
- the impact of adverse economic conditions, including the impact of macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the impact of the Russia-Ukraine conflict, or other factors;
- loss of clients or a reduction, or slower growth, in subscriptions or features subscribed to by our existing clients;
- any major change in our board of directors or management, including in connection with our recent CEO transition;
- loss of key personnel;
- the impacts of the COVID-19 pandemic and related matters on the equity capital markets and economy in general, or on us or our industry in particular;
- the financial projections we provide to the public, any changes in these projections, our failure to meet these projections, or our failure to exceed these projections by amounts or percentages expected by our investors and analysts;
- failure of securities analysts to initiate or maintain coverage of our company, changes in financial estimates by any securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- ratings changes by any securities analysts who follow our company;
- sales of our common stock (or securities that convert into our common stock) by us or sales by our significant stockholders, or the public announcement of same;
- the assessment of our business or position in our market published in research and other reports;
- announcements by us or our competitors of significant product or technical innovations, financings, acquisitions, strategic partnerships, joint ventures or capital commitments;
- entry into the market by new competitors, or the introduction of new products or the generation of new sales by us or our competitors;

- changes in operating performance and stock market valuations of other technology companies generally, or those in the software as a service industry in particular;
- price and volume fluctuations in the overall stock market, including as a result of trends in the U.S. or global economy;
- lawsuits threatened or filed against us;
- security breaches or incidents impacting our clients or their customers and security breaches of companies that provide solutions similar to our solution, which could negatively impact our industry as a whole;
- legislation or regulation of our business, the business of our clients, the internet and/or contact centers;
- new entrants into and consolidations of the contact center market, including the transition by providers of legacy on-premise contact center systems to cloud solutions;
- acquisitions by us or our competitors, and our ability to effectively integrate and achieve the desired benefits from acquisitions by us;
- the perceived or real impact of events that harm our competitors;
- developments with respect to patents or proprietary rights; and
- other events or factors, including those resulting from war, incidents of terrorism or responses to these events, which would be unrelated to our business and industry, and outside of our control.

In addition, stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many technology companies, particularly in connection with the continued macroeconomic deterioration, including increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency rates, the Russia-Ukraine conflict and the COVID-19 pandemic. Stock prices of many technology companies have recently declined, including in some cases in a manner unrelated or disproportionate to the operating performance of those companies. These and other factors may disproportionately impact the trading price of our common stock. In the past, stockholders have instituted securities class action litigation following periods of volatility. If we were to become involved in such securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business and harm our business, results of operations, financial condition, reputation and cash flows.

If securities or industry analysts discontinue publishing research or reports about our business, or publish negative reports about our business, our share price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business, our industry, our market and our competitors. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our shares or change their opinion of our shares or our business, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in financial markets or our industry market, which could cause our share price or trading volume to decline.

Substantial future sales of shares of our common stock could cause the market price of our common stock and our convertible senior notes to decline.

The market price of shares of our common stock and our convertible senior notes could decline as a result of substantial sales of our common stock, particularly sales by our directors, executive officers and significant stockholders or the perception in the market that holders of a large number of shares intend to sell their shares.

The future registration of shares of our common stock may cause our stock price and the price of our convertible senior notes to decline, even before such shares are actually sold in the market. We have registered shares of common stock that we may issue under our employee equity incentive plans. These shares can be sold freely in the public market upon issuance.

We are unable to predict the effect that sales, or the perception that our shares may be available for sale, will have on the prevailing market price of our common stock.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of our company more difficult, limit attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change in control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws:

- provide that our board of directors is classified into three classes of directors;

- provide that stockholders may remove directors only for cause;
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that all vacancies, including newly created directorships, may, except as otherwise required by law, be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum;
- provide that our stockholders may not take action by written consent, and may only take action at annual or special meetings of our stockholders;
- provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner, and also specify requirements as to the form and content of a stockholder's notice;
- restrict the forum for certain litigation against us to Delaware;
- restrict the forum for complaints asserting a cause of action under the Securities Act to the federal district courts;
- do not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election);
- provide that special meetings of our stockholders may be called only by the chairman of the board, our chief executive officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors; and
- provide that stockholders will be permitted to amend our amended and restated bylaws and certain parts of our amended and restated certificate of incorporation only upon receiving at least 66²/₃% of the votes entitled to be cast by holders of all outstanding shares then entitled to vote generally in the election of directors, voting together as a single class.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, 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.

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 amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the sole and exclusive forum for certain disputes between us and our stockholders, and our Bylaws provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action under the Securities Act, each of which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees, or agents.

Our amended and restated certificate of incorporation provides that, unless we consent to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of fiduciary duty owed by any of our directors, officers or other employees to us or to our stockholders, (3) any action asserting a claim arising pursuant to the Delaware General Corporation Law or (4) any action asserting a claim governed by the internal affairs doctrine. Furthermore, our Bylaws provide that, unless we consent in writing to an alternative forum, the federal district courts of the United States are the sole and exclusive forum for the resolution of any complaint asserting a cause of action under the Securities Act.

These choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, employees, or agents, which may discourage such lawsuits against us and our directors, officers, employees and agents even though an action, if successful, might benefit our stockholders. Stockholders who do bring a claim in the Court of Chancery could face additional litigation costs in pursuing any such claim, particularly if they do not reside in or near the State of Delaware. The Court of Chancery or federal district courts may also reach different judgments or results than would other courts, including courts where a stockholder considering an action may be located or would otherwise choose to bring the action, and

such judgments or results may be more favorable to us than to our stockholders. Alternatively, if a court were to find either of these choice of forum provisions to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, operating results and financial condition.

We have never paid cash dividends and do not intend to pay dividends for the foreseeable future.

We have never declared or paid any cash dividends on our common stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, including under any future loan facilities, general business conditions and other factors that our board of directors may deem relevant. While our convertible senior notes do not prohibit payment of dividends, any dividends declared and paid by our board of directors would result in an adjustment to the conversion rate of such notes such that additional shares would be issuable upon conversion. Accordingly, holders of our common stock must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

ITEM 1B. Unresolved Staff Comments

None.

ITEM 2. Properties

We currently lease approximately 173,000 square feet of office space worldwide. Information concerning our principal leased properties as of December 31, 2022 is set forth below:

Location	Principal Use	Square Footage	Lease Expiration Date
San Ramon, California	Corporate headquarters, sales, marketing, product design, professional services, research and development	104,000	January 2031
The Philippines	Technical support, training and other professional services	26,600	July 2023
Portugal	Portions of engineering and operations	20,600	August 2025
Australia	Research and development, sales, marketing and client support services	14,000	October 2027

The hosting of our equipment and software at co-located third-party facilities is also significant to our business. We have entered into rental agreements with third-party facilities in Santa Clara, California; Atlanta, Georgia; Slough, England; and Amsterdam, the Netherlands, which require monthly payments for a fixed period of time in exchange for certain guarantees of space, and network and telecommunication availability. These agreements expire at various dates through 2026.

We believe our facilities are sufficient for our current needs.

ITEM 3. Legal Proceedings

Information with respect to this item may be found under the heading “Legal Matters” in Note 10 of the Notes to Consolidated Financial Statements in this Annual Report on Form 10-K, which information is incorporated herein by reference.

ITEM 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market Information for Common Stock

Our common stock trades on The NASDAQ Global Market, or NASDAQ, under the symbol “FIVN.”

Number of Common Stock Holders

On February 21, 2023, there were 15 stockholders of record of our common stock who held an aggregate of 71,151,340 shares of our common stock. We believe that there are a substantially greater number of beneficial owners of our common stock.

Dividend Policy

We have never declared or paid any cash dividends on our common stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. In addition, while our convertible senior notes do not prohibit payment of dividends, any dividends declared and paid by our board of directors would result in an adjustment to the conversion rate of such notes such that additional shares would be issuable upon conversion. Any future determination to declare cash dividends will be made at the discretion of our board of directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, including under any future loan facilities, general business conditions and other factors that our board of directors may deem relevant.

Stock-Based Compensation

For information on securities authorized for issuance under our equity compensation plans, see ITEM 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

Recent Sales of Unregistered Securities

None.

Purchases of Equity Securities by the Issuer and Affiliated Purchasers

None.

Stock Performance Graph

The graph below compares the cumulative total return on our common stock with that of the Russell 2000 Index and the NASDAQ Computer and Data Processing Index. The period shown commences on December 31, 2017 and ends on December 31, 2022. The graph assumes \$100 was invested at the close of market on December 31, 2017 in the common stock of Five9, the Russell 2000 Index and the NASDAQ Computer and Data Processing Index, and assumes the reinvestment of any dividends. The stock price performance on the following graph is not intended to forecast or be indicative of future stock price performance of our common stock.



This performance graph shall not be deemed “soliciting material” or to be “filed” with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Five9, Inc. under the Securities Act of 1933, as amended, or the Securities Act of 1934 Exchange, as amended.

ITEM 6. [Reserved]

ITEM 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

You should read the following discussion in conjunction with the consolidated financial statements and notes thereto included elsewhere in this report.

Overview

We are a pioneer and leading provider of intelligent cloud contact center market with more than 2,500 clients. We believe we achieved this leadership position through our expertise and technology, which has empowered us to help organizations of all sizes transition from legacy on-premise contact center systems to our cloud solution. Our

solution, comprised of our VCC cloud platform and applications, allows simultaneous management and optimization of customer interactions across voice, chat, email, web, social media and mobile channels, either directly or through our APIs. Our VCC cloud platform matches each customer interaction with an appropriate agent resource and delivers relevant customer data to the agent in real-time through integrations with adjacent enterprise applications, such as CRM software, to optimize the customer experience and improve agent productivity. Unlike legacy on-premise contact center systems, our solution requires minimal up-front investment, can be rapidly deployed and adjusted depending on our client's requirements.

Since founding our business in 2001, we have focused exclusively on delivering cloud contact center software. We initially targeted smaller contact center opportunities with our telesales team and, over time, invested in expanding the breadth and depth of the functionality of our cloud platform to meet the evolving requirements of our clients. In 2009, we made a strategic decision to expand our market opportunity to include larger contact centers. This decision drove further investments in research and development and the establishment of our field sales team to meet the requirements of these larger contact centers. We believe this shift has helped us diversify our client base, while significantly enhancing our opportunity for future revenue growth. To complement these efforts, we have also focused on building client awareness and driving adoption of our solution through marketing activities, which include internet advertising, digital marketing campaigns, social media, trade shows, industry events, telemarketing and out of home campaigns.

We provide our solution through a SaaS business model with recurring subscriptions. We offer a comprehensive suite of applications delivered on our VCC cloud platform that are designed to enable our clients to manage and optimize interactions across inbound and outbound contact centers. We primarily generate revenue by selling subscriptions and related usage of our VCC cloud platform. We charge our clients monthly subscription fees for access to our solution, primarily based on the number of agent seats, as well as the specific functionalities and applications our clients deploy. We define agent seats as the maximum number of named agents allowed to concurrently access our solution. Our clients typically have more named agents than agent seats, and multiple named agents may use an agent seat, though not simultaneously. Substantially all of our clients purchase both subscriptions and related telephony usage from us. A small percentage of our clients subscribe to our platform but purchase telephony usage directly from wholesale telecommunications service providers. We do not sell telephony usage on a stand-alone basis to any client. The related usage fees are based on the volume of minutes for inbound and outbound interactions. We also offer bundled plans, generally for smaller deployments, where the client is charged a single monthly fixed fee per agent seat that includes both subscription and unlimited usage in the contiguous 48 states and, in some cases, Canada. We offer monthly, annual and multiple-year contracts to our clients, generally with 30 days' notice required for reductions in the number of agent seats. Increases in the number of agent seats can be provisioned almost immediately. Our clients, therefore, are able to adjust the number of agent seats used to meet their changing contact center volume needs. Our larger clients typically choose annual contracts, which generally include an implementation and ramp period of several months. Fixed subscription fees, including bundled plans, are generally billed monthly in advance, while related usage fees are billed in arrears. For the years ended December 31, 2022, 2021 and 2020, subscription and related usage fees accounted for 91%, 92% and 92% of our revenue, respectively. The remainder was comprised of professional services revenue from the implementation and optimization of our solution.

Macroeconomic and Other Factors

We are subject to risks and exposures, including those caused by adverse economic conditions, including macroeconomic deterioration, the Russia-Ukraine conflict and the COVID-19 pandemic.

Macroeconomic factors include the global economic slowdown, increased inflation, increased interest rates, supply chain disruptions, decreased economic output and fluctuations in currency exchange rates. We continuously monitor the direct and indirect impacts of these circumstances on our business and financial results, as well as the overall global economy and geopolitical landscape. While the implications of macroeconomic events on our business, results of operations and overall financial position remain uncertain over the long term, we continue to experience macroeconomic headwinds on our installed base business, which typically contributes approximately half of our revenue growth, particularly in two verticals, healthcare and consumer, which are typically our two strongest seasonal industries in the fourth quarter. There has also been some adverse impact on the mid-market portion of our net new clients business.

In March 2022 we decided to close our Russia office and to establish a new European development center in Portugal, in part due to the growing uncertainty arising from the Russia-Ukraine conflict. During the year ended December 31, 2022, we incurred approximately \$7.9 million in costs related to the closure and relocation of our

Russian operations, of which \$0.7 million was recorded in cost of revenue, \$5.9 million was recorded in research and development expense, \$1.4 million was recorded in general and administrative expense and \$(0.1) million was recorded in interest income and other in our consolidated statements of operations and comprehensive loss. We currently do not believe that this decision will have a material effect on our business, results of operations or financial condition.

The COVID-19 pandemic had a moderately positive impact on our financial results due to the shift from brick-and-mortar to virtual. The severity and duration of the COVID-19 pandemic, and its continuing impact on the U.S. and global economy remains uncertain, but we believe that most of this benefit has now dissipated.

Key GAAP Operating Results

Our revenue increased to \$778.8 million for the year ended December 31, 2022, from \$609.6 million and \$434.9 million for the years ended December 31, 2021 and 2020, respectively. Revenue growth was primarily attributable to our larger clients, driven by an increase in our sales and marketing activities and our improved brand awareness. For each of the years ended December 31, 2022, 2021 and 2020, no single client accounted for more than 10% of our total revenue. As of December 31, 2022, we had over 2,500 clients across multiple industries with a wide range of seat sizes. We had a net loss of \$94.7 million, \$53.0 million and \$42.1 million for the years ended December 31, 2022, 2021 and 2020, respectively.

We have continued to make significant expenditures and investments, including in sales and marketing, research and development and infrastructure. We primarily evaluate the success of our business based on revenue growth and the efficiency and effectiveness of our investments. The growth of our business and our future success depend on many factors, including our ability to continue to expand our base of larger clients, grow revenue from our existing clients, innovate and expand internationally. While these areas represent significant opportunities for us, they also pose risks and challenges that we must successfully address, including the impact of macroeconomic deterioration, the Russia-Ukraine conflict and the COVID-19 pandemic, in order to successfully grow our business and improve our operating results.

Key Operating and Non-GAAP Financial Performance Metrics

In addition to measures of financial performance presented in our consolidated financial statements, we monitor the key metrics set forth below to help us evaluate growth trends, establish budgets, measure the effectiveness of our sales and marketing efforts and assess operational efficiencies.

Annual Dollar-Based Retention Rate

We believe that our Annual Dollar-Based Retention Rate provides insight into our ability to retain and grow revenue from our clients, and is a measure of the long-term value of our client relationships. Our Annual Dollar-Based Retention Rate is calculated by dividing our Retained Net Revenue by our Retention Base Net Revenue on a monthly basis, which we then average using the rates for the trailing twelve months for the period presented. We define Retention Base Net Revenue as recurring net revenue from all clients in the comparable prior year period, and we define Retained Net Revenue as recurring net revenue from that same group of clients in the current period. We define recurring net revenue as net subscription and related usage revenue.

The following table shows our Annual Dollar-Based Retention Rate based on Net Revenue for the periods presented:

	Twelve Months Ended December 31,	
	2022	2021
Annual Dollar-Based Retention Rate	115%	122%

Our Dollar-Based Retention Rate decreased year-over-year primarily due to the initial benefit we previously experienced in 2021 from the COVID-19 pandemic and macroeconomic headwinds we started experiencing in 2022.

Adjusted EBITDA

We monitor adjusted EBITDA, a non-GAAP financial measure, to analyze our financial results and believe that it is useful to investors, as a supplement to U.S. GAAP measures, in evaluating our ongoing operational performance and enhancing an overall understanding of our past financial performance. We believe that adjusted EBITDA helps illustrate underlying trends in our business that could otherwise be masked by the effect of the

income or expenses that we exclude from adjusted EBITDA. Furthermore, we use this measure to establish budgets and operational goals for managing our business and evaluating our performance. We also believe that adjusted EBITDA provides an additional tool for investors to use in comparing our recurring core business operating results over multiple periods with other companies in our industry.

Adjusted EBITDA should not be considered in isolation from, or as a substitute for, financial information prepared in accordance with U.S. GAAP, and our calculation of adjusted EBITDA may differ from that of other companies in our industry. We compensate for the inherent limitations associated with using adjusted EBITDA through disclosure of these limitations, presentation of our financial statements in accordance with U.S. GAAP and reconciliation of adjusted EBITDA to the most directly comparable U.S. GAAP measure, net loss. We calculate adjusted EBITDA as net loss before (1) depreciation and amortization, (2) stock-based compensation, (3) interest expense, (4) interest (income) and other, (5) exit costs related to the closure and relocation of our Russian operations, (6) acquisition-related transaction and one-time integration costs, (7) contingent consideration expense, (8) refund for prior year overpayment of USF fees, (9) provision for (benefit from) income taxes, and (10) other items that do not directly affect what we consider to be our core operating performance.

The following table shows a reconciliation of net loss to adjusted EBITDA for the periods presented (in thousands):

	Year Ended December 31,	
	2022	2021
Net loss	\$ (94,650)	\$ (53,000)
Non-GAAP adjustments:		
Depreciation and amortization ⁽¹⁾	44,671	38,732
Stock-based compensation ⁽²⁾	172,507	108,805
Interest expense	7,493	8,027
Interest (income) and other	(4,813)	8
Exit costs related to closure and relocation of Russian operations ⁽³⁾	7,190	—
Acquisition-related transaction costs and one-time integration costs	6,901	13,576
Contingent consideration expense	260	5,640
Refund for prior year overpayment of USF fees	(3,511)	—
Provision for (benefit from) income taxes	4,388	(11,285)
Adjusted EBITDA	<u>\$ 140,436</u>	<u>\$ 110,503</u>

(1) Depreciation and amortization expenses included in our results of operations for the periods presented are as follows (in thousands):

	Year Ended December 31,	
	2022	2021
Cost of revenue	\$ 34,955	\$ 30,870
Research and development	3,164	3,277
Sales and marketing	4	4
General and administrative	6,548	4,581
Total depreciation and amortization	<u>\$ 44,671</u>	<u>\$ 38,732</u>

(2) See Note 7 to the consolidated financial statements for stock-based compensation expense included in our results of operations for the periods presented.

(3) Exit costs related to the closure of our Russian operations were \$3.4 million and one-time and relocation-related costs were \$4.5 million during the year ended December 31, 2022. The \$7.2 million adjustment presented above was net of \$0.8 million included in "Depreciation and amortization" and \$(0.1) million included in "Interest (income) and other."

Key Components of Our Results of Operations

Revenue

Our revenue consists of subscription and related usage as well as professional services. We consider our subscription and related usage to be recurring revenue. This recurring revenue includes fixed subscription fees for the delivery and support of our VCC cloud platform, as well as related usage fees. The related usage fees are generally based on the volume of minutes for inbound and outbound client interactions. We also offer bundled plans, generally for smaller deployments, where the client is charged a single monthly fixed fee per agent seat that includes both subscription and unlimited usage in the contiguous 48 states and, in some cases, Canada. We offer monthly, annual and multiple-year contracts for our clients, generally with 30 days' notice required for reductions in the number of agent seats. Increases in the number of agent seats can be provisioned almost immediately. Our clients, therefore, are able to adjust the number of agent seats used to meet their changing contact center volume needs. Our larger clients typically choose annual contracts, which generally include an implementation and ramp period of several months.

Fixed subscription fees, including plans with bundled usage, are generally billed monthly in advance, while variable usage fees are billed in arrears. Fixed subscription fees are recognized on a straight-line basis over the applicable term, which is predominantly the monthly contractual billing period. Support activities include technical assistance for our solution and upgrades and enhancements on a when and if available basis, which are not billed separately. Variable subscription related usage fees for non-bundled plans are billed in arrears based on client-specific per minute rate plans and are recognized as actual usage occurs. We generally require advance deposits from clients based on estimated usage. All fees, except usage deposits, are non-refundable.

In addition, we generate professional services revenue from assisting clients in implementing our solution and optimizing use. These services include application configuration, system integration and education and training services. Professional services are primarily billed on a fixed-fee basis and are typically performed by us directly. In limited cases, our clients choose to perform these services themselves or engage their own third-party service providers to perform such services. Professional services are recognized as the services are performed using the proportional performance method, with performance measured based on labor hours, provided all other criteria for revenue recognition are met.

We expect that adverse economic conditions will continue to have an adverse impact on our revenue in future periods. For example, we continue to experience macroeconomic headwinds on our installed base business, which typically contributes approximately half of our revenue growth, particularly in two verticals, healthcare and consumer, which are typically our two strongest seasonal industries in the fourth quarter. There has also been some adverse impact on the mid-market portion of our net new clients business.

Cost of Revenue

Our cost of revenue consists primarily of personnel costs, including stock-based compensation, fees that we pay to telecommunications providers for usage, USF contributions and other regulatory costs, depreciation and related expenses of our servers and equipment, costs to build out and maintain co-location data centers, costs of public cloud-based data centers, allocated office and facility costs, amortization of acquired technology and amortization of internal-use software costs. Cost of revenue can fluctuate based on a number of factors, including the fees we pay to telecommunications providers, which vary depending on our clients' usage of our VCC cloud platform, the timing of capital expenditures and related depreciation charges and changes in headcount. We expect to continue investing in professional services, public cloud, cloud operations, client support and network infrastructure to maintain high quality and availability of services, which we believe will result in absolute dollar increases in cost of revenue but percentage of revenue declines in the long-term through economies of scale.

Operating Expenses

We classify our operating expenses as research and development, sales and marketing, and general and administrative expenses.

Research and Development. Our research and development expenses consist primarily of salary and related expenses, including stock-based compensation, for personnel related to the development of improvements and expanded features for our services, as well as quality assurance, testing, product management and allocated overhead. We expense research and development expenses as they are incurred except for internal use software development costs that qualify for capitalization. We believe that continued investment in our solution is important

for our future growth, and we expect our research and development expenses to increase in absolute dollars and fluctuate as a percentage of revenue in the near and longer term.

Sales and Marketing. Sales and marketing expenses consist primarily of salaries and related expenses, including stock-based compensation, for personnel in sales and marketing, sales commissions, as well as advertising, marketing, corporate communications, travel costs and allocated overhead. We believe it is important to continue investing in sales and marketing to continue to generate revenue growth, and we expect sales and marketing expenses to increase in absolute dollars and fluctuate as a percentage of revenue in the near and longer term as we continue to support our growth initiatives.

General and Administrative. General and administrative expenses consist primarily of salary and related expenses, including stock-based compensation, for management, finance and accounting, legal, information systems and human resources personnel, professional fees, compliance costs, other corporate expenses and allocated overhead. We expect that general and administrative expenses will fluctuate in absolute dollars and as a percentage of revenue in the near term, but to increase in absolute dollars and decline as a percentage of revenue in the longer term.

Results of Operations for the Years Ended December 31, 2022 and 2021

Based on the consolidated statements of operations and comprehensive loss set forth in this annual report, the following table sets forth our operating results as a percentage of revenue for the periods indicated:

	Year Ended December 31,	
	2022	2021
Revenue	100 %	100 %
Cost of revenue	47 %	44 %
Gross profit	53 %	56 %
Operating expenses:		
Research and development	18 %	18 %
Sales and marketing	34 %	32 %
General and administrative	12 %	16 %
Total operating expenses	64 %	66 %
Loss from operations	(11)%	(10)%
Other (expense) income, net:		
Interest expense	(1)%	(1)%
Interest income and other	1 %	— %
Total other (expense) income, net	— %	(1)%
Loss before income taxes	(11)%	(11)%
Provision for (benefit from) income taxes	1 %	(2)%
Net loss	(12)%	(9)%

Year-to-year comparisons between 2021 and 2020 have been omitted from this Form 10-K but may be found in “Management's Discussion and Analysis of Financial Condition” in Part II, Item 7 of our Form 10-K for the fiscal year ended December 31, 2021, which specific discussion is incorporated herein by reference.

Comparison of the Years Ended December 31, 2022 and 2021

Revenue

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
Revenue	\$778,846	\$609,591	\$169,255	28%

The increase in revenue for 2022 compared to 2021 was primarily attributable to our larger clients, driven by an increase in our sales and marketing activities and our improved brand awareness.

Cost of Revenue

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
Cost of revenue	\$367,501	\$271,099	\$96,402	36%
% of Revenue	47%	44%		

The increase in cost of revenue for 2022 compared to 2021 was primarily due to a \$37.9 million increase in personnel costs, including stock-based compensation costs, driven mainly by increased headcount and higher salaries, a \$29.4 million increase in depreciation, data center and public cloud costs to support our growing capacity needs, a \$19.4 million increase in third-party hosted software costs driven by increased client activities, a \$5.1 million increase in consulting costs for global expansion, a \$3.4 million increase in usage and carrier costs due to increased volume, and a \$3.2 million increase in staff augmentation costs related to implementation of our solutions,

offset in part by a \$2.5 million decrease in USF contributions and other federal telecommunication service fees due primarily to a change in methodology, which resulted in a \$3.5 million refund for 2020 that was received in 2022. The \$3.5 million refund for 2020, accompanied by the decrease in the USF contribution rates resulted in a decrease in USF costs for 2022 compared to 2021. This decrease in USF costs was offset in part by increased client usage.

Gross Profit

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
Gross profit	\$411,345	\$338,492	\$72,853	22%
% of Revenue	53%	56%		

The increase in gross profit for 2022 compared to 2021 was primarily due to increases in subscription and related revenues. The decrease in gross margin for 2022 compared to 2021 was primarily due to increased cost of revenue as described above, which grew at a higher rate than our growth in revenue. We expect gross margin to increase in the long term despite continued investments in professional services, public cloud, cloud operations, client support and network infrastructure, as we expect revenue growth in the long term to more than offset these increases.

Operating Expenses

Research and Development

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
Research and development	\$141,794	\$106,897	\$34,897	33%
% of Revenue	18%	18%		

The increase in research and development expenses for 2022 compared to 2021 was primarily due to a \$35.2 million increase in personnel-related costs including stock-based compensation costs, driven mainly by increased headcount and higher salaries, and a \$2.3 million increase in office, facilities and related costs, offset in part by \$5.6 million in research and development costs that qualified for capitalization.

Sales and Marketing

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
Sales and marketing	\$261,990	\$193,929	\$68,061	35%
% of Revenue	34%	32%		

The increase in sales and marketing expenses for 2022 compared to 2021 was primarily due to a \$38.3 million increase in personnel-related costs, including stock-based compensation costs driven mainly by increased headcount and higher salaries, a \$16.2 million increase in sales commission expenses driven by the growth in sales and bookings of our solution, a \$5.0 million increase in travel costs and an in-person user conference as a result of an increase in business travel as COVID-19 restrictions decreased, and a \$2.2 million increase in office, facilities and related costs. The remaining net increase in sales and marketing expenses was primarily due to the execution of our growth strategy to acquire new clients, increase the number of agent seats within our existing client base, and increased advertising and other marketing expenses to increase our brand awareness.

General and Administrative

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
General and administrative	\$95,143	\$93,916	\$1,227	1%
% of Revenue	12%	16%		

The increase in general and administrative expenses for 2022 compared to 2021 was primarily due to a \$11.9 million increase in personnel costs including stock-based compensation costs, driven mainly by increased headcount and higher salaries, partially offset by a \$5.7 million decrease in legal and other professional service costs due to a decline in M&A activities and by a \$5.4 million decrease in contingent consideration expense for the Inference acquisition.

Other (Expense) Income, Net

	Year Ended December 31,		\$ Change	% Change
	2022	2021		
	(in thousands, except percentages)			
Interest expense	\$ (7,493)	\$ (8,027)	\$ 534	7 %
Interest income and other	4,813	(8)	4,821	nm
Total other (expense) income, net	\$ (2,680)	\$ (8,035)	\$ 5,355	67 %
% of Revenue	(1)%	(1)%		

nm - not meaningful

The decrease in interest expense for 2022 compared to 2021 was primarily due to the reduction in the aggregate outstanding principal amount of our 2023 convertible senior notes. See Note 6 to the consolidated financial statements for further details.

The increase in interest income and other for 2022 compared to 2021 was primarily due to higher interest income on our marketable investments.

Liquidity and Capital Resources

To date, we have financed our operations, primarily through sales of our solution, net proceeds from our equity and debt financings, including the issuance of our 2025 convertible senior notes in May and June 2020 and of our 2023 convertible senior notes in May 2018, and lease facilities. As of December 31, 2022, we had \$627.9 million in working capital, which included \$180.5 million in cash and cash equivalents, \$433.7 million in short-term marketable investments and excluded long-term marketable investments of \$0.9 million. We believe our existing cash and cash equivalents will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months.

We plan to continue to finance our operations in the future primarily through sales of our solution, net proceeds from equity and debt financings, and lease facilities. Our future capital requirements will depend on many factors including our growth rate, continuing market acceptance of our solution, the strength of the global economy, client retention, growth within our installed base, our ability to gain new clients, the timing and extent of spending to support research and development efforts, the outcome of any pending or future litigation or other claims by third parties or governmental entities, the expansion of sales and marketing activities and personnel, the introduction of new and enhanced offerings, expenses incurred in closing our Russia operations and expanding our new office in Portugal and any operational disruptions due to this transition, and the effect of the length and severity of the current economic downturn, the Russia-Ukraine conflict and the COVID-19 pandemic on these or other factors. We may also acquire or invest in complementary businesses, technologies and intellectual property rights, which may increase our use of cash and future capital requirements, both to pay acquisition costs and to support our combined operations. We may raise additional capital through equity or debt financings at any time to fund these or other requirements. However, we may not be able to raise additional capital through equity or debt financings when needed on terms acceptable to us or at all, depending on our financial performance, economic and market conditions, the trading price of our common stock, and other factors, including the length and severity of the current economic downturn and fluctuations in the financial markets, including due to the Russia-Ukraine conflict and the ongoing COVID-19 pandemic. If we are unable to raise additional capital as needed, our business, operating results and

financial condition could be harmed. In addition, if our operating performance during the next twelve months is below our expectations, our liquidity and ability to operate our business also could be harmed.

If we raise additional funds by issuing equity or equity-linked securities, the ownership of our existing stockholders would be diluted. If we raise additional funds through the incurrence of additional indebtedness, we will be subject to increased debt service obligations and could also be subject to restrictive covenants and other operating restrictions that could negatively impact our ability to operate our business.

Cash Flows

The following table summarizes our cash flows for the periods presented (in thousands):

	Year Ended December 31,	
	2022	2021
Net cash provided by operating activities	\$ 88,865	\$ 28,998
Net cash provided by (used in) investing activities	30,963	(150,478)
Net cash used in financing activities	(30,232)	(7,501)
Net increase (decrease) in cash, cash equivalents and restricted cash	<u>\$ 89,596</u>	<u>\$ (128,981)</u>

Cash Flows from Operating Activities

Cash provided by operating activities is primarily influenced by our personnel-related expenditures, data center and telecommunications carrier costs, office and facility related costs, USF contributions and other regulatory costs and the amount and timing of client payments. If we continue to improve our financial results, we expect net cash provided by operating activities to increase. Our largest source of operating cash inflows is cash collections from our clients for subscription and related usage services. Payments from clients for these services are typically received monthly.

Net cash provided by operating activities was \$88.9 million during the year ended December 31, 2022. Net cash provided by operating activities resulted from our net loss of \$94.7 million, adjustments to reconcile net loss to net cash provided by operating activities of \$271.0 million, primarily consisting of \$172.5 million of stock-based compensation, \$44.7 million of depreciation and amortization, \$41.0 million of amortization of commission costs, \$10.4 million of amortization of operating lease right-of-use assets, \$3.7 million of amortization of issuance costs on our convertible senior notes, and \$(5.9) million payment for the Inference contingent consideration in excess of its acquisition-date fair value, partially offset by use of cash for operating assets and liabilities of \$(87.5) million primarily due to the timing of cash payments to vendors and cash receipts from customers.

Cash Flows from Investing Activities

Net cash provided by investing activities of \$31.0 million in 2022 was comprised of \$525.2 million related to cash proceeds from sales and maturities of marketable investments, offset in part by \$435.8 million related to purchases of marketable investments, \$52.3 million in capital expenditures, \$3.9 million in capitalized software development costs and \$2.0 million in connection with an equity investment in a privately-held company.

Cash Flows from Financing Activities

Net cash used in financing activities of \$30.2 million in 2022 related to \$34.1 million of cash paid in connection with other 2023 convertible senior note settlements and \$24.0 million of cash paid in connection with the contingent consideration payment related to the Inference acquisition, of which \$18.1 million represented the acquisition-date fair value and was presented as a financing activity and \$5.9 million represented the amount of payment in excess of the acquisition-date fair value and was presented as an operating activity, partially offset by cash proceeds of \$13.4 million from the sale of common stock under our employee stock purchase plan and \$8.5 million from the exercise of stock options.

Contractual and Other Obligations

Our material cash requirements include the following contractual and other obligations.

Convertible Senior Notes

In May and June 2020, we issued \$747.5 million aggregate principal amount of our 2025 convertible senior notes in a private offering. The 2025 convertible senior notes mature on June 1, 2025 and are our senior unsecured obligations. The 2025 convertible senior notes bear interest at a fixed rate of 0.50% per annum, payable semiannually in arrears on June 1 and December 1 of each year, beginning December 1, 2020. The total net proceeds from the offering, after deducting initial purchasers' discounts and commissions and estimated debt issuance costs, were approximately \$728.8 million. As of December 31, 2022, the aggregate principal amount outstanding of our 2025 convertible senior notes was \$747.5 million.

In May 2018, we issued \$258.8 million aggregate principal amount of our 2023 convertible senior notes in a private offering. The 2023 convertible senior notes mature on May 1, 2023 and are our senior unsecured obligations. The 2023 convertible senior notes bear interest at a fixed rate of 0.125% per annum, payable semiannually in arrears on May 1 and November 1 of each year. The total net proceeds from the offering, after deducting the initial purchasers' discounts and estimated debt issuance costs, were approximately \$250.8 million. As of December 31, 2022, after giving effect to the 2023 Note Repurchase Transactions and other settlements upon conversion requests, approximately \$0.2 million aggregate principal amount of 2023 convertible senior notes remained outstanding.

See Note 6 to the consolidated financial statements included in this report for further details.

Leases

We have leases for offices, data centers and computer and networking equipment that expire at various dates through 2031. Our leases have remaining terms of one to ten years. Some of the leases include an option to extend the leases for up to three to five years, and some of the leases include the option to terminate the leases upon 30-days notice. We had outstanding operating lease obligations of \$57.9 million as of December 31, 2022, with \$12.2 million payable within 12 months, \$17.1 million payable within one to three years, \$11.4 million payable within three to five years, and \$17.1 million after five years. See Note 13 to the consolidated financial statements included in this report for further details.

Cloud Services

As of December 31, 2022, we had outstanding cloud service agreement commitments totaling \$41.1 million, of which \$29.0 million is expected to be paid in 2023 and the remaining \$12.1 million in 2024.

Hosting and Telecommunication Usage Services

We have agreements with third parties to provide co-location hosting and telecommunication usage services. The agreements require payments per month for a fixed period of time in exchange for certain guarantees of network and telecommunication availability. As of December 31, 2022, we had outstanding hosting and telecommunication usage services obligations of \$16.0 million, with \$8.1 million payable within 12 months, \$7.5 million payable within one to three years, and \$0.4 million payable within three to five years.

Indemnification Agreements

In the ordinary course of business, we enter into agreements of varying scope and terms pursuant to which we agree to indemnify clients, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of 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, officers and certain employees that will 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. There are no claims that we are aware of that could have a material effect on our consolidated balance sheet, consolidated statements of operations and comprehensive loss, or consolidated statements of cash flows.

Contingencies — Legal and Regulatory

We are subject to certain legal and regulatory proceedings, and from time to time may be involved in a variety of claims, lawsuits, investigations, and proceedings relating to contractual disputes, intellectual property rights, employment matters, regulatory compliance matters, and other litigation matters relating to various claims that arise in the normal course of business. We determine whether an estimated loss from a contingency should be accrued by assessing whether a loss is deemed probable and can be reasonably estimated. We assess our potential liability by analyzing specific litigation and regulatory matters using reasonably available information. We develop our views on estimated losses in consultation with inside and outside counsel, which involves a subjective analysis of potential results and outcomes, assuming various combinations of appropriate litigation and settlement strategies. Legal fees are expensed in the period in which they are incurred. See Note 10 to the consolidated financial statements for more details.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses and related disclosures. On an ongoing basis, we evaluate our estimates and assumptions. Our actual results may differ from these estimates under different assumptions or conditions. We currently do not have any critical accounting estimates that involve a significant level of estimation uncertainty that could have a material impact on our consolidated financial statements.

Our significant accounting policies are described in Note 1 to the consolidated financial statements.

Revenue Recognition

Revenue is recognized when control of the promised services is transferred to customers, in an amount that reflects the consideration that we expect to receive in exchange for those services. We generate all of our revenue from contracts with customers. In contracts with multiple performance obligations, we identify each performance obligation and evaluate whether the performance obligations are distinct within the context of the contract at contract inception. Performance obligations that are not distinct at contract inception are combined. We allocate the transaction price to each distinct performance obligation proportionately based on the estimated standalone selling price for each performance obligation. We then look to how services are transferred to the customer in order to determine the timing of revenue recognition. Most services provided under our agreements result in the transfer of control over time.

Our revenue consists of subscription services and related usage as well as professional services. We charge clients subscription fees, usually billed on a monthly basis, for access to our VCC solution. The subscription fees are primarily based on the number of agent seats, as well as the specific VCC functionalities and applications deployed by the client. Agent seats are defined as the maximum number of named agents allowed to concurrently access the VCC cloud platform. Clients typically have more named agents than agent seats. Multiple named agents may use an agent seat, though not simultaneously. Substantially all of our clients purchase both subscriptions and related telephony usage. A small percentage of our clients subscribe to our platform but purchase telephony usage directly from a wholesale telecommunications service provider. We do not sell telephony usage on a stand-alone basis to any client. The related usage fees are based on the volume of minutes used for inbound and outbound client interactions. Revenue generated from telephony usage is presented in revenue and cost of sales on a gross basis, as we are the party that controls the service and are responsible for fulfilling the promise to provide the call service by diverting the calls to selected carriers. We also offer bundled plans, generally for smaller deployments, whereby the client is charged a single monthly fixed fee per agent seat that includes both subscription and unlimited usage in the contiguous 48 states and, in some cases, Canada. Professional services revenue is derived primarily from VCC implementations, including application configuration, system integration, optimization, education and training services. Clients are not permitted to take possession of our software.

We offer monthly, annual and multiple-year contracts to our clients, generally with 30 days' notice required for reductions in the number of agent seats. Increases in the number of agent seats can be provisioned almost immediately. Our clients, therefore, are able to adjust the number of agent seats used to meet their changing contact center volume needs. Our larger clients typically choose annual contracts, which generally include an implementation and ramp period of several months. Fixed subscription fees, including bundled plans, are generally billed monthly in advance, while related usage fees are billed in arrears. Support activities include technical assistance for our solution and upgrades and enhancements to our VCC cloud platform on a when-and-if-available basis, which are not billed separately.

Professional services are primarily billed on a fixed-fee basis and are performed by us directly or, alternatively, clients may also choose to perform these services themselves or engage their own third-party service providers. Revenue for professional services is recognized over time as services are performed, based on the proportion of labor hours expended compared to the total hours expected to complete the related performance obligation.

The estimation of variable consideration for each performance obligation requires us to make subjective judgments. In the early stages of our larger contracts, in order to allocate the overall transaction fee on a relative stand-alone selling price basis to our multiple performance obligations, we estimate variable consideration to be included in the transaction fee to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently

resolved. When services are included in the contract with the customer and are not sold at their stand-alone selling price, we are required to estimate the number of seats the customer will use, especially during the initial ramp period of the contract, during which we bill under an ‘actual usage’ model for subscription-related services. We expect estimated variable consideration to continue to not have a material impact on the allocation of transaction fees to multiple performance obligations.

The revenue recognition standards include guidance relating to any tax assessed by a governmental authority that is directly imposed on a revenue-producing transaction between a seller and a customer and may include, but is not limited to, sales, use, value added and excise taxes. We record USF contributions and other regulatory costs on a gross basis in our consolidated statements of operations and comprehensive loss and record surcharges and sales, use and excise taxes billed to our clients on a net basis. The cost of gross USF contributions payable to the USAC and suppliers is presented as a cost of revenue in the consolidated statements of operations and comprehensive loss.

Business Combinations, Goodwill, and Acquisition-Related Intangible Assets

Accounting for business combinations requires us to make significant estimates and assumptions. We allocate the purchase consideration to the tangible and intangible assets acquired and liabilities assumed based on their estimated fair value at the acquisition dates, with the excess recorded to goodwill. Critical estimates in valuing certain intangible assets and contingent consideration include, but are not limited to, future expected cash flows, expected asset lives, royalty rates, and discount rates. The amounts and useful lives assigned to acquisition-related intangible assets impact the amount and timing of future amortization expense.

We use estimates, assumptions, and judgments when performing a goodwill impairment test or assessing the recoverability of acquisition-related finite-lived intangible assets. We test goodwill for impairment on an annual basis in the fourth quarter and more frequently if a significant event or circumstance indicates impairment, and assess the recoverability of acquisition-related intangible assets whenever events or circumstances indicate that the carrying amounts of such assets may not be recoverable. We also evaluate the estimated remaining useful lives of acquisition-related intangible assets for changes in circumstances that warrant a revision to the remaining periods of amortization.

Recent Accounting Pronouncements

Refer to Note 1 in Item 8 of this Form 10-K for information related to recent accounting pronouncements.

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 interest rates and foreign currency exchange rates. We do not hold or issue financial instruments for trading purposes.

Interest Rate Sensitivity

We had cash and cash equivalents, and marketable securities (short and long-term) totaling \$615.1 million as of December 31, 2022. Cash equivalents and marketable securities were invested primarily in U.S. agency and government sponsored securities, U.S. treasury securities, municipal bonds, commercial paper, corporate bonds, certificates of deposit and money market funds. Our investment policy is focused on the preservation of capital and supporting our liquidity needs. Under this policy, we invest in highly rated securities, while limiting the amount of credit exposure to any one issuer other than the U.S. government. We do not invest in financial instruments for trading or speculative purposes, nor do we use leveraged financial instruments. We utilize external investment managers who adhere to the guidelines of our investment policy. A hypothetical 100 basis point change in interest rates would not have a material impact on the value of our cash and cash equivalents or marketable investments.

As of December 31, 2022, the aggregate principal amount outstanding of our 2025 convertible senior notes and 2023 convertible senior notes was \$747.5 million and \$0.2 million, respectively. The fair value of the convertible senior notes are subject to interest rate risk, market risk and other factors due to their conversion features. The fair value of the convertible senior notes will generally increase as our common stock price increases and will generally decrease as our common stock price declines. The interest and market value changes affect the fair value of the convertible senior notes but do not impact our financial position, cash flows or results of operations due to the fixed nature of the debt obligations. Additionally, we carry the convertible senior notes at face value less

unamortized discount on our consolidated balance sheets, and we present the fair value for required disclosure purposes only.

Our convertible senior notes bear fixed interest rates and, therefore, are not subject to interest rate risk. We have not utilized derivative financial instruments, derivative commodity instruments or other market risk sensitive instruments, positions or transactions in any material fashion, except for the privately negotiated capped call transactions entered into in May and June 2020 and May 2018 related to the issuance of our 2025 convertible senior notes and our 2023 convertible senior notes, respectively.

Foreign Currency Risk

The functional currency of our foreign subsidiaries is the U.S. dollar. Our sales are primarily denominated in U.S. dollars and, therefore, our revenue is not directly subject to foreign currency risk. However, we are indirectly exposed to foreign currency risk. A stronger U.S. dollar makes our solution more expensive outside the United States and therefore can reduce demand. A weaker U.S. dollar could have the opposite effects. Such economic exposure to currency fluctuations is difficult to measure or predict because our sales are influenced by many factors in addition to the impact of currency fluctuations.

Our operating expenses are generally denominated in the currencies of the countries in which our operations are located, except for Russia where compensation of our employees was primarily denominated in the U.S. dollar. In March 2022, we made a decision to close our Russia office in June 2022 and to establish a new European development center in Portugal.

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, the effect of a hypothetical 10% change in foreign currency exchange rates applicable to our business would have a maximum impact of \$6.3 million on our operating expenses.

ITEM 8. Financial Statements and Supplementary Data.

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors
Five9, Inc.:

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

We have audited the accompanying consolidated balance sheets of Five9, Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations and comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2022, based on criteria, established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

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

Change in Accounting Principle

As discussed in Note 6 to the consolidated financial statements, the Company has changed its method of accounting for convertible senior notes as of January 1, 2021 due to the adoption of Accounting Standards Update (ASU) No. 2020-06, Debt-Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging-Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity.

Basis for Opinions

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control Over Financial Reporting

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

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

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated 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 consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a 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.

Evaluation of the sufficiency of audit evidence over revenues from subscription services and related usage

As discussed in Note 1 to the consolidated financial statements, the Company charges its clients subscription fees, usually billed on a monthly basis, for access to the Company's Virtual Contract Center ("VCC") cloud platform. The subscription fees are primarily based on the number of agent seats as well as the specific VCC functionalities and applications deployed by the client. Agent seats are defined as the maximum number of named agents allowed to concurrently access the VCC cloud platform. Substantially all of the Company's clients purchase both subscriptions and related telephony usage. The related telephony usage fees are generally based on the volume of minutes used for inbound and outbound client interactions. There are high volumes of subscription and related usage transactions processed across multiple information technology ("IT") systems.

We identified the evaluation of the sufficiency of audit evidence over subscription services and related usage as a critical audit matter. Revenues from subscription services and related usage involve a high volume of automated transactions dependent on the Company's IT systems. Therefore, our audit procedures required the involvement of IT professionals and auditor judgement was required to determine the nature and extent of audit evidence obtained and evaluate the results of the procedures.

The following are the primary procedures we performed to address this critical audit matter. We involved IT professionals with specialized skills and knowledge, who assisted in evaluating the design and testing the operating effectiveness of certain internal controls over the Company's revenue process. This included controls over the capture and flow of subscription and related usage transactional information through the Company's IT systems. We placed test calls and observed that call attributes such as duration and type of service were captured in the relevant IT systems. We assessed the recorded revenue by comparing total cash received during the year, adjusted for reconciling items, to the revenue recognized. Such assessment also evaluated the relevance and reliability of reconciling items to underlying documentation, including the changes in accounts receivable and deferred revenue. We evaluated the sufficiency of audit evidence obtained by assessing the results of procedures performed, including the appropriateness of the nature and extent of such evidence.

/s/ KPMG LLP

We have served as the Company's auditor since 2012.

Santa Clara, California
February 24, 2023

FIVE9, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share data)

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 180,520	\$ 90,878
Marketable investments	433,743	378,980
Accounts receivable, net	87,494	83,731
Prepaid expenses and other current assets	29,711	30,342
Deferred contract acquisition costs, net	47,242	33,295
Total current assets	778,710	617,226
Property and equipment, net	101,221	77,785
Operating lease right-of-use assets	44,120	48,703
Intangible assets, net	28,192	39,897
Goodwill	165,420	165,420
Marketable investments	885	147,377
Other assets	11,057	11,871
Deferred contract acquisition costs, net — less current portion	114,880	84,663
Total assets	\$ 1,244,485	\$ 1,192,942
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 23,629	\$ 20,510
Accrued and other current liabilities	53,092	78,577
Operating lease liabilities	10,626	9,826
Accrued federal fees	2,471	2,282
Sales tax liabilities	2,973	2,660
Deferred revenue	57,816	43,720
Convertible senior notes	169	—
Total current liabilities	150,776	157,575
Convertible senior notes - less current portion	738,376	768,599
Sales tax liabilities — less current portion	899	877
Operating lease liabilities — less current portion	41,389	47,088
Other long-term liabilities	3,080	7,671
Total liabilities	934,520	981,810
Commitments and contingencies (Note 10)		
Stockholders' equity:		
Preferred stock, \$0.001 par value; 5,000 shares authorized, no shares issued and outstanding as of December 31, 2022 and 2021	—	—
Common stock, \$0.001 par value; 450,000 shares authorized, 71,047 shares and 68,488 shares issued and outstanding as of December 31, 2022 and 2021, respectively	71	68
Additional paid-in capital	635,668	439,787
Accumulated other comprehensive loss	(2,688)	(287)
Accumulated deficit	(323,086)	(228,436)
Total stockholders' equity	309,965	211,132
Total liabilities and stockholders' equity	\$ 1,244,485	\$ 1,192,942

See accompanying notes to the consolidated financial statements.

FIVE9, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE LOSS

(In thousands, except per share data)

	Year Ended December 31,		
	2022	2021	2020
Revenue	\$ 778,846	\$ 609,591	\$ 434,908
Cost of revenue	367,501	271,099	180,284
Gross profit	411,345	338,492	254,624
Operating expenses:			
Research and development	141,794	106,897	68,747
Sales and marketing	261,990	193,929	132,413
General and administrative	95,143	93,916	65,769
Total operating expenses	498,927	394,742	266,929
Loss from operations	(87,582)	(56,250)	(12,305)
Other (expense) income, net:			
Interest expense	(7,493)	(8,027)	(28,348)
Loss on early extinguishment of debt	—	—	(6,964)
Other (expense) and interest income	4,813	(8)	3,034
Total other (expense) income, net	(2,680)	(8,035)	(32,278)
Loss before income taxes	(90,262)	(64,285)	(44,583)
Provision for (benefit from) income taxes	4,388	(11,285)	(2,453)
Net loss	<u>\$ (94,650)</u>	<u>\$ (53,000)</u>	<u>\$ (42,130)</u>
Net loss per share:			
Basic and diluted	<u>\$ (1.35)</u>	<u>\$ (0.79)</u>	<u>\$ (0.66)</u>
Shares used in computing net loss per share:			
Basic and diluted	<u>69,920</u>	<u>67,512</u>	<u>64,154</u>
Comprehensive Loss:			
Net Loss	\$ (94,650)	\$ (53,000)	\$ (42,130)
Other comprehensive loss	(2,401)	(622)	(241)
Comprehensive loss	<u>\$ (97,051)</u>	<u>\$ (53,622)</u>	<u>\$ (42,371)</u>

See accompanying notes to the consolidated financial statements.

FIVE9, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance as of December 31, 2019	61,544	\$ 61	\$351,870	\$ 576	\$ (156,049)	\$ 196,458
Equity component of issuance of the 2025 convertible senior notes, net of issuance costs	—	—	154,363	—	—	154,363
Purchase of capped calls related to the 2025 convertible senior notes	—	—	(90,448)	—	—	(90,448)
Equity component from conversion of the 2023 convertible senior notes	—	—	(336,592)	—	—	(336,592)
Issuance of common stock upon partial conversion of the 2023 convertible senior notes	3,015	3	309,686	—	—	309,689
Fair value of Inference assumed unvested stock options for services completed prior to the acquisition	—	—	192	—	—	192
Issuance of common stock upon exercise of stock options	558	1	11,655	—	—	11,656
Issuance of common stock upon vesting of restricted stock units	1,210	1	(1)	—	—	—
Issuance of common stock under ESPP	169	1	11,469	—	—	11,470
Stock-based compensation	—	—	64,747	—	—	64,747
Other comprehensive loss	—	—	—	(241)	—	(241)
Net loss	—	—	—	—	(42,130)	(42,130)
Balance as of December 31, 2020	66,496	67	476,941	335	(198,179)	279,164
Cumulative effect adjustment due to adoption of ASU 2020-06 ⁽¹⁾	—	—	(168,412)	—	22,743	(145,669)
Issuance of common stock upon partial conversion of the 2023 convertible senior notes	454	—	(353)	—	—	(353)
Partial unwind of capped calls and retirement of common stock related to the 2023 convertible senior notes	(69)	—	9	—	—	9
Issuance of common stock upon exercise of stock options	389	—	7,402	—	—	7,402
Issuance of common stock upon vesting of restricted stock units	1,097	1	(2)	—	—	(1)
Issuance of common stock under ESPP	121	—	15,397	—	—	15,397
Stock-based compensation	—	—	108,805	—	—	108,805
Other comprehensive loss	—	—	—	(622)	—	(622)
Net loss	—	—	—	—	(53,000)	(53,000)
Balance as of December 31, 2021	68,488	68	439,787	(287)	(228,436)	211,132
Issuance of common stock upon partial conversion of the 2023 convertible senior notes	574	1	(281)	—	—	(280)
Partial unwind of capped calls and retirement of common stock related to the 2023 convertible senior notes	(119)	—	10	—	—	10
Issuance of common stock upon exercise of stock options	531	1	8,521	—	—	8,522
Issuance of common stock upon vesting of restricted stock units	1,383	1	—	—	—	1
Issuance of common stock under ESPP	190	—	13,413	—	—	13,413
Stock-based compensation	—	—	174,218	—	—	174,218
Other comprehensive loss	—	—	—	(2,401)	—	(2,401)
Net loss	—	—	—	—	(94,650)	(94,650)
Balance as of December 31, 2022	<u>71,047</u>	<u>\$ 71</u>	<u>\$635,668</u>	<u>\$ (2,688)</u>	<u>\$ (323,086)</u>	<u>\$ 309,965</u>

- (1) Effective January 1, 2021, the Company adopted ASU 2020-06. Accordingly, the Company recorded a net reduction to opening accumulated deficit of \$22.7 million and a net reduction to opening additional paid-in capital of \$168.4 million as of January 1, 2021 due to the cumulative impact of adopting this new standard.

See accompanying notes to the consolidated financial statements.

FIVE9, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(thousands)

	Year Ended December 31,		
	2022	2021	2020
Cash flows from operating activities:			
Net loss	\$ (94,650)	\$ (53,000)	\$ (42,130)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Depreciation and amortization	44,671	38,732	25,087
Amortization of operating lease right-of-use assets	10,377	8,698	5,687
Amortization of deferred contract acquisition costs	41,034	26,050	16,495
Amortization of premium on marketable investments	(90)	6,385	3,090
Provision for doubtful accounts	1,105	808	754
Stock-based compensation	172,507	108,805	64,747
Amortization of discount and issuance costs on convertible senior notes	3,743	3,957	25,738
Loss on early extinguishment of debt	—	—	6,964
Deferred taxes	3,088	(6,907)	(178)
Change in fair value of contingent consideration	260	5,640	—
Payment of contingent consideration liability in excess of acquisition-date fair value	(5,900)	—	—
Tax benefit of valuation allowance associated with an acquisition	—	—	(2,910)
Other	188	396	(147)
Changes in operating assets and liabilities:			
Accounts receivable	(4,899)	(35,986)	(9,958)
Prepaid expenses and other current assets	661	(14,193)	(5,313)
Deferred contract acquisition costs	(85,197)	(71,380)	(45,454)
Other assets	(319)	(1,216)	(1,911)
Accounts payable	845	4,305	6,181
Accrued and other current liabilities	(8,379)	20,562	9,374
Accrued federal fees and sales tax liabilities	524	(497)	1,302
Deferred revenue	13,176	10,462	7,971
Other liabilities	(3,880)	(22,623)	1,913
Net cash provided by operating activities	<u>88,865</u>	<u>28,998</u>	<u>67,302</u>
Cash flows from investing activities:			
Purchases of marketable investments	(435,768)	(680,490)	(620,948)
Proceeds from sales of marketable investments	600	44,288	1,899
Proceeds from maturities of marketable investments	524,568	527,940	432,579
Purchases of property and equipment	(52,272)	(42,216)	(30,422)
Capitalization of software development costs	(3,899)	—	—
Payments of initial direct costs	(266)	—	—
Cash paid for an equity investment in a privately-held company	(2,000)	—	—
Cash paid to acquire Inference and Virtual Observer	—	—	(165,338)
Cash paid to acquire substantially all of the assets of Whendu	—	—	(100)
Net cash provided by (used in) investing activities	<u>30,963</u>	<u>(150,478)</u>	<u>(382,330)</u>
Cash flows from financing activities:			
Proceeds from issuance of convertible senior notes	—	—	728,812
Payments for capped call transactions	—	—	(90,448)
Repurchase of a portion of 2023 convertible senior notes, net of costs	(34,067)	(24,688)	(200,350)
Proceeds from exercise of common stock options	8,522	7,402	11,656
Proceeds from sale of common stock under ESPP	13,413	15,397	11,469
Payment of contingent consideration liability up to acquisition-date fair value	(18,100)	—	—

	Year Ended December 31,		
	2022	2021	2020
Payment of holdbacks related to acquisitions	—	(5,000)	—
Payments of finance leases	—	(612)	(3,715)
Net cash (used in) provided by financing activities	(30,232)	(7,501)	457,424
Net increase (decrease) in cash and cash equivalents	89,596	(128,981)	142,396
Cash and cash equivalents:			
Beginning of year	91,391	220,372	77,976
End of year	<u>\$ 180,987</u>	<u>\$ 91,391</u>	<u>\$ 220,372</u>
Supplemental disclosures of cash flow data:			
Cash paid for interest	\$ 3,744	\$ 4,073	\$ 2,324
Cash paid for income taxes	1,033	31	293
Non-cash investing and financing activities:			
Equipment purchased and unpaid at period-end	12,332	13,871	8,114
Capitalization of leasehold improvement through non-cash lease incentive	109	5,121	—
Acquisition and related transaction costs accrued at period-end	—	—	586
Stock-based compensation included in capitalized software development costs	1,711	—	—
Reconciliation of Cash, Cash Equivalents and Restricted Cash to the Consolidated Balance Sheets - Beginning of Period:			
Cash and cash equivalents	\$ 90,878	\$ 220,372	\$ 77,976
Restricted cash in other assets	513	—	—
Total cash, cash equivalents and restricted cash	<u>\$ 91,391</u>	<u>\$ 220,372</u>	<u>\$ 77,976</u>
Reconciliation of Cash, Cash Equivalents and Restricted Cash to the Consolidated Balance Sheets - End of Period:			
Cash and cash equivalents	\$ 180,520	\$ 90,878	\$ 220,372
Restricted cash in other assets	467	513	—
Total cash, cash equivalents and restricted cash	<u>\$ 180,987</u>	<u>\$ 91,391</u>	<u>\$ 220,372</u>

See accompanying notes to the consolidated financial statements.

FIVE9, INC.

Notes to Consolidated Financial Statements

1. Description of Business and Summary of Significant Accounting Policies

Five9, Inc. and its wholly-owned subsidiaries (the “Company”) is a provider of cloud software for contact centers. The Company was incorporated in Delaware in 2001 and is headquartered in San Ramon, California. The Company has offices in Europe, Asia and Australia, which primarily provide research, development, sales, marketing, and client support services.

Termination of Proposed Merger with Zoom

On July 16, 2021, the Company entered into an Agreement and Plan of Merger (the “Merger Agreement”) by and among the Company, Zoom Video Communications, Inc., a Delaware corporation (“Zoom”), and Summer Merger Sub, Inc., a Delaware corporation and a direct, wholly owned subsidiary of Zoom (“Merger Sub”). On September 30, 2021, at a special meeting of the Company’s stockholders, a vote to approve the Merger was unsuccessful and immediately following the special meeting the Company and Zoom mutually agreed to terminate the Merger Agreement. The Company incurred approximately \$7.6 million in transaction costs related to the Merger recorded in general and administrative expense in its consolidated statements of operations and comprehensive loss.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States (“GAAP”) and applicable rules and regulations of the Securities and Exchange Commission (“SEC”) regarding annual financial reporting. All intercompany transactions and balances have been eliminated in consolidation.

The consolidated statement of cash flows for the year ended December 31, 2021 included in this Annual Report differs from the consolidated statement of cash flows for the year ended December 31, 2021 included in the Form 10-K for the year ended December 31, 2021 due to the changes in restricted cash, which was previously presented within operating activities and is now included within the beginning and ending cash, cash equivalents and restricted cash balances.

Use of Estimates

The preparation of consolidated financial statements in accordance with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. The significant estimates made by management affect revenue and related reserves, as well as the fair value of liabilities assumed through business combinations. Management periodically evaluates such estimates and they are adjusted prospectively based upon such periodic evaluation. Actual results could differ from those estimates.

Foreign Currency

The functional currency of the Company’s foreign subsidiaries is the U.S. dollar. For these subsidiaries, the monetary assets and liabilities resulting from foreign currency transactions are adjusted to reflect the exchange rate as of the balance sheet date. Foreign currency transaction gains and losses were not significant in any period and are reported in “Other (expense) income, net” in the consolidated statements of operations and comprehensive loss.

Cash and Cash Equivalents

The Company’s cash and cash equivalents consist of highly liquid investments with maturities of three months or less at the time of purchase. The Company’s cash equivalents consist of investments in money market funds and U.S. treasury securities.

Marketable Investments

The Company's marketable investments consist of U.S. agency securities and government sponsored securities, U.S. treasury securities, certificates of deposit, municipal bonds, corporate bonds and commercial paper. The Company determines the appropriate classification of its investments in marketable investments at the time of purchase and re-evaluates such designation at each balance sheet date. The Company's marketable investments have been classified and accounted for as available-for-sale. Marketable investments are carried at fair value.

Concentration Risks

Financial instruments, which potentially subject the Company to significant concentrations of credit risk, consist primarily of cash and cash equivalents, marketable investments and accounts receivable. A significant portion of the Company's cash and cash equivalents is held at three large reputable financial institutions. Total cash and cash equivalents in excess of insured limits were \$178.6 million and \$89.2 million as of December 31, 2022 and 2021, respectively. The Company has not experienced any losses in such accounts.

As of December 31, 2022 and 2021, no single client represented more than 10% of accounts receivable. For the years ended December 31, 2022, 2021 and 2020, no single client represented more than 10% of revenue.

Allowance for Doubtful Accounts

The Company uses an expected credit loss model, which requires it to consider historical loss rates and expectations of forward-looking losses to estimate its allowance for doubtful accounts on its trade accounts receivables, unbilled accounts receivables and contract assets.

The following table presents the changes in the allowance for doubtful accounts (in thousands):

	Year Ended December 31,	
	2022	2021
Balance, beginning of period	\$ 220	\$ 127
Add: bad debt expense	1,105	808
Less: write-offs, net of recoveries	(1,063)	(715)
Balance, end of period	<u>\$ 262</u>	<u>\$ 220</u>

Property and Equipment, Net

Property and equipment is stated at cost less accumulated depreciation and amortization, and is depreciated using the straight-line method over the estimated useful lives of the assets as follows:

Asset Category	Estimated Useful Lives
Computer and network equipment	3 to 5 years
Computer software	3 years
Internal-use software and development costs	1 to 5 years
Furniture and fixtures	7 years
Leasehold improvements	Shorter of useful life or lease term

The Company capitalizes certain qualifying costs incurred during the development stage of internal-use software. Costs related to preliminary project activities and post-implementation activities are expensed in research and development as incurred. Preliminary project activities include conceptual formulation, evaluation and final selection of alternatives, planning, proof of concept and requirement analysis of the selected alternative. The post-implementation stage begins when the internal-use software is ready for its intended use, and includes all internal and external training and application maintenance activities. Capitalized internal-use software costs are included within property and equipment, net on the consolidated balance sheets, and are amortized over the estimated useful life of the software, which is three years. The related amortization expense is recognized in cost of revenue.

Maintenance and repairs are charged to expense as incurred, and improvements and betterments are capitalized. When assets are retired or otherwise disposed of, the cost and accumulated depreciation and amortization are removed from the consolidated balance sheet and any resulting gain or loss is reflected in the consolidated statements of operations and comprehensive loss in the period realized.

The Company evaluates the recoverability of property and equipment for possible impairment whenever events or circumstances indicate that the carrying amount of such assets or asset groups may not be recoverable. Recoverability of these assets is measured by a comparison of the carrying amounts to the future undiscounted cash flows the assets or asset groups are expected to generate. If such evaluation indicates that the carrying amount of the assets or asset groups is not recoverable, the carrying amount of such assets or asset groups is reduced to fair value. No impairment losses have been recognized in any of the periods presented.

Business Combinations

The Company uses its best estimates and assumptions to assign fair value to the tangible and intangible assets acquired and liabilities assumed as of the acquisition date. The Company's estimates are inherently uncertain and subject to change. During the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the fair value of these tangible and intangible assets and liabilities assumed, with the corresponding offset to goodwill. In addition, uncertain tax positions and tax-related valuation allowances are initially established in connection with a business combination as of the acquisition date. Upon the conclusion of the measurement period or final determination of the fair value of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to its consolidated statements of operations and comprehensive loss.

Goodwill and Intangible Assets

The Company records goodwill when the consideration paid in a business combination exceeds the fair value of the net tangible assets and the identified intangible assets acquired. Goodwill is not amortized, but instead is required to be tested for impairment annually and whenever events or changes in circumstances indicate that the carrying value of goodwill may exceed its fair value.

The Company performs testing for impairment of goodwill in its fourth quarter, or as events occur or circumstances change that would more likely than not reduce the fair value of the Company's single reporting unit below its carrying amount. A qualitative assessment is first made to determine whether it is necessary to perform the quantitative goodwill impairment test. This initial qualitative assessment includes, among other things, consideration of: (i) market capitalization of the Company; (ii) past, current and projected future earnings and equity; (iii) recent trends and market conditions; and (iv) valuation metrics involving similar companies that are publicly-traded and acquisitions of similar companies, if available. If this initial qualitative assessment indicates that it is more likely than not that impairment exists, a second quantitative assessment will be performed, involving a comparison between the estimated fair values of the Company's single reporting unit with its respective carrying amount including goodwill. If the carrying value exceeds estimated fair value, an impairment charge is recorded for the excess.

Intangible assets, consisting of acquired developed technology, domain names and customer relationships, are carried at cost less accumulated amortization. All intangible assets have been determined to have definite lives and are amortized on a straight-line basis over their estimated remaining economic lives, ranging from three to six years. Amortization expense related to developed technology is included in cost of revenue. Amortization expense related to customer relationships is included in sales and marketing expense. Amortization expense related to domain names is included in general and administrative expense. Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate an asset's carrying value may not be recoverable.

Revenue Recognition

Revenue is recognized when control of the promised services is transferred to customers in an amount that reflects the consideration that the Company expects to receive in exchange for those services. The Company generates all of its revenue from contracts with customers. In contracts with multiple performance obligations, it identifies each performance obligation and evaluates whether the performance obligations are distinct within the context of the contract at contract inception. Performance obligations that are not distinct at contract inception are combined. The Company allocates the transaction price to each distinct performance obligation proportionately based on the estimated standalone selling price for each performance obligation. The Company then looks to how services are transferred to the customer in order to determine the timing of revenue recognition. Most services provided under the Company's agreements result in the transfer of control over time.

The Company's revenue consists of subscription services and related usage as well as professional services. The Company charges clients subscription fees, usually billed on a monthly basis, for access to the Company's VCC

solution. The subscription fees are primarily based on the number of agent seats, as well as the specific VCC functionalities and applications deployed by the client. Agent seats are defined as the maximum number of named agents allowed to concurrently access the VCC cloud platform. Clients typically have more named agents than agent seats. Multiple named agents may use an agent seat, though not simultaneously. Substantially all of the Company's clients purchase both subscriptions and related telephony usage. A small percentage of the Company's clients subscribe to its platform but purchase telephony usage directly from a wholesale telecommunications service provider. The Company does not sell telephony usage on a stand-alone basis to any client. The related usage fees are generally based on the volume of minutes used for inbound and outbound client interactions. Revenue generated from telephony usage is presented in revenue and cost of sales on a gross basis, as the Company is the party that controls the service and is responsible for fulfilling the promise to provide the call service by diverting the calls to selected carriers. The Company also offers bundled plans, generally for smaller deployments, whereby the client is charged a single monthly fixed fee per agent seat that includes both subscription and unlimited usage in the contiguous 48 states and, in some cases, Canada. Professional services revenue is derived primarily from VCC implementations, including application configuration, system integration, optimization, education and training services. Clients are not permitted to take possession of the Company's software.

The Company offers monthly, annual and multiple-year contracts to its clients, generally with 30 days' notice required for reductions in the number of agent seats. Increases in the number of agent seats can be provisioned almost immediately. The Company's clients, therefore, are able to adjust the number of agent seats used to meet their changing contact center needs. The Company's larger clients typically choose annual contracts, which generally include an implementation and ramp period of several months. Fixed subscription fees, including bundled plans, are generally billed monthly in advance, while related usage fees are billed in arrears. Support activities include technical assistance for the Company's solution and upgrades and enhancements to the VCC cloud platform on a when-and-if-available basis, which are not billed separately.

The Company generally requires advance deposits from its clients based on estimated usage when such usage is not billed as part of a bundled plan. Any unused portion of the deposit is refundable to the client upon termination of the arrangement, provided all amounts due have been paid. All fees, except usage deposits, are non-refundable.

Professional services are primarily billed on a fixed-fee basis. Revenue for professional services is recognized over time, as services are performed.

The estimation of variable consideration for each performance obligation requires the Company to make subjective judgments resulting in estimated variable consideration that is included in the transaction fee. This is done to the extent that it is probable, in the Company's judgment, that a significant reversal in the amount of cumulative revenue recognized under the contract will not occur. The Company estimates the variable consideration in order to allocate the overall transaction fee on a relative stand-alone selling price basis to its multiple performance obligations. When services are included in the contract with the customer and are not sold at their stand-alone selling price, the Company is required to estimate the number of seats the customer will use, especially during the initial ramp period of the contract, during which the Company bills under an 'actual usage' model for subscription-related services. To date, variable consideration has not had a material impact on the allocation of transaction fees to multiple performance obligations.

The Company recognizes revenue on fixed fee professional services performance obligations based on the proportion of labor hours expended compared to the total hours expected to complete the related performance obligation. The determination of the total labor hours expected to complete the performance obligations involves judgment, which influences the initial stand-alone selling price estimate as well as the timing of professional services revenue recognition, although this is typically resolved in a short time frame.

When a contract with a customer is signed, the Company assesses whether collection of the fees under the arrangement is probable. The Company assesses collection based on a number of factors, including past transaction history and the creditworthiness of the client. The Company maintains a revenue reserve for potential credits to be issued in accordance with service level agreements or for other revenue adjustments.

Deferred Revenue

Deferred revenue consists of billings or payments received from clients for subscription services, usage and professional services in advance of revenue recognition and is recognized in accordance with the Company's revenue recognition policy discussed above. The Company generally invoices its clients monthly in advance for

subscription services. Accordingly, the deferred revenue balance does not represent the total contract value of sales arrangements.

Cost of Revenue

Cost of revenue consists primarily of personnel costs, including stock-based compensation, fees that the Company pays to telecommunications providers for usage, USF contributions and other regulatory costs, depreciation and related expenses of servers and equipment, costs to build out and maintain co-location data centers, costs of public cloud-based data centers, allocated office and facility costs, amortization of acquired technology and amortization of internal-use software costs. Personnel costs include those associated with support of the Company's solution, clients and data center operations, as well as with providing professional services. Data center costs include costs for servers and equipment to build out and setup, as well as co-location fees for the right to place the Company's servers in data centers owned by third parties.

Research and Development

Research and development expenses consist primarily of salary and related expenses, including stock-based compensation, for personnel related to the development of improvements and expanded features for the Company's solution, as well as quality assurance, testing, product management and allocated overhead. Research and development costs are expensed as incurred except for internal use software development costs that qualify for capitalization. The Company reviews development costs incurred for internal-use software in the application development stage and assesses costs for capitalization.

Advertising Costs

The Company primarily advertises its services through the internet and in conjunction with partners. Advertising costs are expensed as incurred and were \$28.1 million, \$20.8 million and \$15.6 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Commissions

Commissions consist of variable compensation earned by sales personnel and referral fees the Company pays to third parties. The Company defers all incremental commission costs to obtain the contract, and amortizes these costs over a period of benefit determined to be five years. Commission expense was \$47.3 million, \$31.1 million and \$21.9 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Stock-Based Compensation

All stock-based compensation granted to employees and non-employee directors is measured at the grant date fair value of the award. The Company estimates the fair value of stock options under the Company's Equity Incentive Plans and purchase rights under the Company's 2014 Employee Stock Purchase Plan ("2014 ESPP Plan" or "ESPP") using the Black-Scholes option-pricing model. The fair value of restricted stock units ("RSUs"), including performance-based restricted stock units ("PRSUs") subject to performance conditions, is equal to the fair value of the Company's common stock on the date of grant. The fair value of PRSUs subject to market conditions are determined using a Monte Carlo Simulation model. Compensation expense is recognized net of actual forfeitures using the straight-line method over the service period, which is generally the vesting period.

Income Taxes

The Company accounts for income taxes using the asset and liability method. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. Deferred tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in operations in the period that includes the enactment date. The Company records a valuation allowance to reduce its deferred tax assets to the amount of future tax benefit that is more likely than not to be realized. As of December 31, 2022, and 2021, the Company recorded a full valuation allowance against the U.S. net deferred tax assets because of its history of operating losses in the United States. As of December 31, 2022 and 2021, the Company recognized a net deferred tax asset balance of \$3.8 million and \$6.9 million, respectively, related to its

operations in the UK and Australia. The Company classifies interest and penalties on unrecognized tax benefits as income tax expense.

Comprehensive loss

Comprehensive loss consists of net loss, and unrealized gains or losses on available-for-sale marketable investments. The Company presents comprehensive loss as part of the consolidated statements of operations. The changes in the accumulated balances of the components of other comprehensive loss were not material for the periods presented.

Net Loss Per Share

Basic net loss per share is calculated by dividing net loss by the weighted average number of shares of common stock outstanding during the period, and excludes any dilutive effects of employee stock-based awards and potential shares issuable upon conversion of the convertible senior notes. Diluted net loss per share is computed giving effect to all potentially dilutive shares of common stock, including common stock issuable upon exercise of stock options, vesting of RSUs and PRSUs, and shares of common stock issuable upon conversion of convertible senior notes. In periods of net loss, all potentially issuable shares of common stock are excluded from the diluted net loss per share computation because they are anti-dilutive. Therefore, basic and diluted net loss per share are the same for all years presented in the Company's consolidated statements of operations and comprehensive loss.

Indemnification

The Company, in the ordinary course of business, enters into agreements of varying scope and terms pursuant to which it agrees to indemnify clients, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, including breach of security, services to be provided by the Company or from intellectual property infringement claims made by third parties. To date, the Company has not incurred any material costs as a result of such indemnification provisions and the Company has not accrued any liabilities related to such obligations in the consolidated financial statements as of December 31, 2022 and 2021.

Segment Information

The Company has determined that its Chief Executive Officer is its chief operating decision maker. The Company's Chief Executive Officer reviews financial information presented on a consolidated basis for purposes of assessing performance and making decisions on how to allocate resources. Accordingly, the Company has determined that it operates in a single reportable segment.

Recent Accounting Pronouncements Not Yet Effective

The Company has reviewed, or is in the process of evaluating, all issued, but not yet effective, accounting pronouncements and does not believe the future adoption of any such accounting pronouncements will cause a material impact on its consolidated financial position, operating results or statements of cash flows.

2. Revenue

Contract Balances

The following table provides information about accounts receivable, net, deferred contract acquisition costs, net, contract assets and contract liabilities from contracts with customers (in thousands):

	<u>December 31, 2022</u>	<u>December 31, 2021</u>
Accounts receivable, net	\$ 87,494	\$ 83,731
Deferred contract acquisition costs, net:		
Current	\$ 47,242	\$ 33,295
Non-current	114,880	84,663
Total deferred contract acquisition costs, net	<u>\$ 162,122</u>	<u>\$ 117,958</u>
Contract assets and contract liabilities:		
Contract assets (included in prepaid expenses and other current assets)	\$ 3,401	\$ 2,593
Contract liabilities (deferred revenue)	57,816	43,720
Noncurrent contract liabilities (deferred revenue) (included in other long term liabilities)	1,178	2,097
Net contract liabilities	<u>\$ (55,593)</u>	<u>\$ (43,224)</u>

The Company receives payments from customers based upon billing cycles. Invoice payment terms are usually 30 days or less. Accounts receivable are recorded when the right to consideration becomes unconditional.

Deferred contract acquisition costs are recorded when incurred and are amortized over an estimated customer benefit period of five years.

The Company's contract assets consist of unbilled amounts typically resulting from professional services revenue recognition when it exceeds the total amounts billed to the customer. The Company's contract liabilities consist of advance payments and billings in excess of revenue recognized.

In the year ended December 31, 2022, the Company recognized revenue of \$37.7 million related to its contract liabilities at December 31, 2021.

Remaining Performance Obligations

As of December 31, 2022, the aggregate amount of the total transaction price allocated in contracts with original duration of greater than one year to the remaining performance obligations was \$758.9 million. The Company expects to recognize revenue on approximately three-fourths of the remaining performance obligations over the next 24 months, with the balance recognized thereafter. The Company excludes amounts for remaining performance obligations that are part of contracts with an original expected duration of one year or less. Such remaining performance obligations represent unsatisfied or partially unsatisfied performance obligations.

3. Investments and Fair Value Measurements

Marketable Investments

The Company's marketable investments have been classified and accounted for as available-for-sale. The Company's marketable investments as of December 31, 2022 and 2021 were as follows (in thousands):

	December 31, 2022			
<u>Short-Term Marketable Investments</u>	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of deposit	\$ 747	\$ —	\$ (13)	\$ 734
U.S. treasury securities	186,776	8	(1,382)	185,402
U.S. agency and government-sponsored securities	197,597	29	(1,660)	195,966
Commercial paper	25,386	—	—	25,386
Municipal bonds	22,764	—	(145)	22,619
Corporate bonds	3,658	—	(22)	3,636
Total	<u>\$ 436,928</u>	<u>\$ 37</u>	<u>\$ (3,222)</u>	<u>\$ 433,743</u>

	December 31, 2022			
<u>Long-Term Marketable Investments</u>	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
U.S. agency securities	\$ 885	\$ —	\$ —	\$ 885
Total	<u>\$ 885</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 885</u>

	December 31, 2021			
<u>Short-Term Marketable Investments</u>	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of deposit	\$ 1,615	\$ —	\$ —	\$ 1,615
U.S. treasury securities	83,237	—	(24)	83,213
U.S. agency securities	159,070	—	(65)	159,005
Commercial paper	47,555	—	—	47,555
Municipal bonds	75,337	—	(96)	75,241
Corporate bonds	12,355	2	(6)	12,351
Total	<u>\$ 379,169</u>	<u>\$ 2</u>	<u>\$ (191)</u>	<u>\$ 378,980</u>

	December 31, 2021			
<u>Long-Term Marketable Investments</u>	Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of deposit	\$ 746	\$ —	\$ (2)	\$ 744
U.S. treasury securities	63,566	—	(251)	63,315
U.S. agency securities	63,960	—	(254)	63,706
Municipal bonds	18,655	—	(64)	18,591
Corporate bonds	1,026	—	(5)	1,021
Total	<u>\$ 147,953</u>	<u>\$ —</u>	<u>\$ (576)</u>	<u>\$ 147,377</u>

The following table presents the gross unrealized losses and the fair value for those marketable investments that were in an unrealized loss position for less than 12 months as of December 31, 2022 and 2021 (in thousands):

	December 31, 2022		December 31, 2021	
	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value
Certificates of deposit	\$ (13)	\$ 734	\$ (2)	\$ 2,010
U.S. treasury securities	(1,382)	126,534	(275)	140,527
U.S. agency securities	(1,660)	172,458	(320)	222,710
Municipal bonds	(145)	12,623	(160)	87,184
Corporate bonds	(22)	3,636	(10)	9,428
Total	<u>\$ (3,222)</u>	<u>\$ 315,985</u>	<u>\$ (767)</u>	<u>\$ 461,859</u>

Although the Company had certain available-for-sale debt securities in an unrealized loss position as of December 31, 2022, no impairment loss was recorded since it did not intend to sell them, did not anticipate a need to sell them, and the decline in fair value was not due to any credit-related factors.

Fair Value Measurements

The Company carries cash equivalents and marketable investments at fair value. Fair value is based on the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

Level 1 — Observable inputs, which include unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 — Observable inputs other than Level 1 inputs, such as quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 — Unobservable inputs that are supported by little or no market activity and that are based on management's assumptions, including fair value measurements determined by using pricing models, discounted cash flow methodologies or similar techniques.

The Company determined the fair value of its Level 1 financial instruments, which are traded in active markets, using quoted market prices for identical instruments.

Marketable investments classified within Level 2 of the fair value hierarchy are valued based on other observable inputs, including broker or dealer quotations or alternative pricing sources. When quoted prices in active markets for identical assets or liabilities are not available, the Company relies on non-binding quotes from its investment managers, which are based on proprietary valuation models of independent pricing services. These models generally use inputs such as observable market data, quoted market prices for similar instruments, historical pricing trends of a security as relative to its peers. To validate the fair value determination provided by its investment managers, the Company reviews the pricing movement in the context of overall market trends and trading information from its investment managers. The Company performs routine procedures such as comparing prices obtained from independent source to ensure that appropriate fair values are recorded.

The following tables set forth the Company's assets measured at fair value by level within the fair value hierarchy (in thousands):

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents				
Money market funds	\$ 37,560	\$ —	\$ —	\$ 37,560
U.S. treasury securities	19,700	—	—	19,700
Total cash equivalents	<u>\$ 57,260</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 57,260</u>
Marketable investments (short and long-term)				
Certificates of deposit	\$ —	\$ 734	\$ —	\$ 734
U.S. treasury securities	185,402	—	—	185,402
U.S. agency and government sponsored securities	—	196,851	—	196,851
Commercial paper	—	25,386	—	25,386
Municipal bonds	—	22,619	—	22,619
Corporate bonds	—	3,636	—	3,636
Total marketable investments	<u>\$ 185,402</u>	<u>\$ 249,226</u>	<u>\$ —</u>	<u>\$ 434,628</u>
December 31, 2021				
	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents				
Money market funds	\$ 31,380	\$ —	\$ —	\$ 31,380
Certificates of deposit	—	747	—	747
Total cash equivalents	<u>\$ 31,380</u>	<u>\$ 747</u>	<u>\$ —</u>	<u>\$ 32,127</u>
Marketable investments (short and long-term)				
Certificates of deposit	\$ —	\$ 2,359	\$ —	\$ 2,359
U.S. Treasury	146,528	—	—	146,528
U.S. agency and government sponsored securities	—	222,711	—	222,711
Commercial paper	—	47,555	—	47,555
Municipal bonds	—	93,832	—	93,832
Corporate bonds	—	13,372	—	13,372
Total marketable investments	<u>\$ 146,528</u>	<u>\$ 379,829</u>	<u>\$ —</u>	<u>\$ 526,357</u>
Liabilities				
Contingent consideration	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 23,740</u>	<u>\$ 23,740</u>

As of December 31, 2022 and 2021, the estimated fair value of the Company's outstanding 2023 convertible senior notes was \$0.3 million and \$114.9 million, respectively. As of December 31, 2022 and 2021, the estimated fair value of the Company's outstanding 2025 convertible senior notes was \$687.1 million and \$917.3 million, respectively. The fair values were determined based on the quoted price of the convertible senior notes in an inactive market on the last trading day of the reporting period and have been classified as Level 2 in the fair value hierarchy. See Note 6 for further information on the Company's convertible senior notes.

As part of the agreement to acquire Inference Solutions Inc. ("Inference") in November 2020, the Company was obligated to pay contingent earn out consideration of up to \$24.0 million based upon achievement of certain milestones and relative thresholds during the earn out measurement period which ended on December 31, 2021. The fair value of the contingent consideration arrangement was classified within Level 3 and was determined using a probability-based scenario analysis approach. The resulting probability-weighted contingent consideration amounts

were discounted based on the Company's estimated cost of debt. During 2022, the Company concluded and paid the final contingent consideration amount of \$24.0 million.

A reconciliation of the beginning and ending balance for contingent consideration consisted of the following (in thousands):

	Contingent Consideration
Balance, December 31, 2020	\$ 18,100
Change in fair value of contingent consideration	5,640
Balance, December 31, 2021	23,740
Change in fair value of contingent consideration	260
Less: Payment	(24,000)
Balance, December 31, 2022	<u>\$ —</u>

In February 2022, the Company made a \$2.0 million equity investment in a privately-held company that it does not have the ability to exercise significant influence over. The Company elected the measurement alternative for an equity security without a readily determinable fair value. Accordingly, this investment will be accounted for at its cost minus impairment, if any, and is classified within Level 3. If the Company identifies observable price changes in orderly transactions for such investment or a similar investment, it will measure the investment at fair value as of the date that the observable transaction or events occurred. The Company concluded that there was no indicator of impairment of this investment as of December 31, 2022.

Except for the \$2.0 million equity investment and contingent consideration described above, there were no assets or liabilities measured at fair value on a non-recurring basis as of December 31, 2022 and 2021.

The fair value of the Company's other financial instruments', including accounts receivable, accounts payable and other current liabilities, approximate their carrying value due to the relatively short maturity of those instruments. The carrying amounts of the Company's operating leases approximate their fair value, which is the present value of expected future cash payments based on assumptions about current interest rates and the creditworthiness of the Company.

4. Financial Statement Components

Cash and cash equivalents consisted of the following (in thousands):

	December 31,	
	2022	2021
Cash	\$ 123,260	\$ 58,751
Certificates of deposit	—	747
Money market funds	37,560	31,380
U.S. Treasury	19,700	—
Total cash and cash equivalents	<u>\$ 180,520</u>	<u>\$ 90,878</u>

Accounts receivable, net consisted of the following (in thousands):

	December 31,	
	2022	2021
Trade accounts receivable	\$ 77,621	\$ 75,970
Unbilled trade accounts receivable, net of advance client deposits	10,135	7,981
Allowance for doubtful accounts	(262)	(220)
Accounts receivable, net	<u>\$ 87,494</u>	<u>\$ 83,731</u>

Prepaid expenses and other current assets consisted of the following (in thousands):

	December 31,	
	2022	2021
Prepaid expenses	\$ 17,151	\$ 21,306
Other current assets	9,159	6,443
Contract assets	3,401	2,593
Prepaid expenses and other current assets	<u>\$ 29,711</u>	<u>\$ 30,342</u>

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

	December 31,	
	2022	2021
Computer and network equipment	\$ 148,789	\$ 116,701
Computer software	50,955	44,268
Internal-use software development costs	6,111	500
Furniture and fixtures	3,326	3,953
Leasehold improvements	6,574	5,914
Property and equipment	215,755	171,336
Accumulated depreciation and amortization	(114,534)	(93,551)
Property and equipment, net	<u>\$ 101,221</u>	<u>\$ 77,785</u>

Depreciation and amortization expense associated with property and equipment was \$33.0 million, \$26.9 million and \$18.2 million for the years ended December 31, 2022, 2021 and 2020, respectively.

Property and equipment capitalized under finance lease obligations consists primarily of computer and network equipment and was as follows (in thousands):

	December 31,	
	2022	2021
Gross	\$ 36,282	\$ 42,541
Less: accumulated depreciation and amortization	(36,203)	(41,689)
Total	<u>\$ 79</u>	<u>\$ 852</u>

Other assets consisted of the following (in thousands):

	December 31,	
	2022	2021
Other assets	\$ 5,081	\$ 4,964
Equity investment in a privately-held company	2,000	—
Deferred tax assets	3,976	6,907
Other assets	<u>\$ 11,057</u>	<u>\$ 11,871</u>

Accrued and other current liabilities consisted of the following (in thousands):

	December 31,	
	2022	2021
Accrued expenses	\$ 19,343	\$ 20,108
Accrued compensation and benefits	33,749	34,729
Contingent consideration	—	23,740
Accrued and other current liabilities	<u>\$ 53,092</u>	<u>\$ 78,577</u>

Other long-term liabilities consisted of the following (in thousands):

	December 31,	
	2022	2021
Deferred revenue	\$ 1,178	\$ 2,097
Deferred tax liabilities	157	—
Other long-term liabilities	1,745	5,574
Other long-term liabilities	<u>\$ 3,080</u>	<u>\$ 7,671</u>

5. Goodwill and Intangible Assets

Goodwill

There was no activity in the Company's goodwill balance during the years ended December 31, 2022 and 2021.

During the fourth quarter of 2022, the Company completed its annual goodwill impairment test. Based on its assessment of the qualitative factors, the Company's management concluded that the fair value of the Company's goodwill was more likely than not greater than its carrying amount as of December 31, 2022. As such, it was not necessary to perform the quantitative goodwill impairment test. Subsequent to the 2022 annual impairment test, the Company believes there have been no significant events or circumstances negatively affecting the valuation of goodwill. As of December 31, 2022 and 2021, there was no impairment to the carrying value of the Company's goodwill.

Intangible Assets

The following table summarizes the activity in the Company's intangible asset balances during the years ended December 31, 2022 and 2021 (in thousands):

	Intangible Assets
Beginning of the period, January 1, 2021	\$ 51,684
Amortization	(11,787)
End of the period, December 31, 2021	39,897
Amortization	(11,705)
End of the period, December 31, 2022	<u>\$ 28,192</u>

The components of intangible assets were as follows (in thousands):

	December 31, 2022				December 31, 2021			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Remaining Amortization Period (Years)	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Weighted Average Remaining Amortization Period (Years)
Developed technology	\$ 56,214	\$ (28,881)	\$ 27,333	3.2	\$ 56,214	\$ (17,821)	\$ 38,393	4.0
Acquired workforce	470	(470)	—	0.0	470	(334)	136	0.9
Customer relationships	1,600	(741)	859	2.7	1,600	(421)	1,179	3.7
Trademarks	500	(500)	—	0.0	500	(311)	189	0.9
Total	<u>\$ 58,784</u>	<u>\$ (30,592)</u>	<u>\$ 28,192</u>	3.2	<u>\$ 58,784</u>	<u>\$ (18,887)</u>	<u>\$ 39,897</u>	4.0

Amortization expense related to intangible assets was \$11.7 million, \$11.8 million and \$6.8 million for the years ended December 31, 2022, 2021 and 2020, respectively.

As of December 31, 2022, the expected future amortization expense for intangible assets was as follows (in thousands):

Period	Expected Future Amortization Expense
2023	\$ 10,870
2024	7,527
2025	5,595
2026	4,200
2027	—
Thereafter	—
Total	<u>\$ 28,192</u>

Intangible assets are reviewed for impairment whenever events or changes in circumstances indicate an asset's carrying value may not be recoverable. The Company concluded that there was no indicators of impairment of its intangible assets as of December 31, 2022 and 2021.

6. Debt

2025 Convertible Senior Notes and Related Capped Call Transactions

In May and June 2020, the Company issued \$747.5 million aggregate principal amount of 2025 convertible senior notes in a private offering, which aggregate principal amount included the exercise in full of the initial purchasers' option to purchase up to an additional \$97.5 million principal amount of the 2025 convertible senior

notes. The 2025 convertible senior notes mature on June 1, 2025 and bear interest at a fixed rate of 0.500% per annum, payable semiannually in arrears on June 1 and December 1 of each year, beginning on December 1, 2020. The total net proceeds from the issuance of the 2025 convertible senior notes, after deducting initial purchasers' discounts and commissions and estimated debt issuance costs, were approximately \$728.8 million.

Each \$1,000 principal amount of the 2025 convertible senior notes is initially convertible into 7.4437 shares of the Company's common stock (the "2025 Conversion Option"), which is equivalent to an initial conversion price of approximately \$134.34 per share of common stock, subject to adjustment upon the occurrence of specified events. The initial conversion price represents a premium of approximately 30% to the \$103.34 per share closing price of the Company's common stock on The Nasdaq Global Market on May 21, 2020. The 2025 convertible senior notes are convertible, in multiples of \$1,000 principal amount, at the option of the holders prior to the close of business on the business day immediately preceding March 1, 2025, only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on September 30, 2020 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (2) during the five business day period after any five consecutive trading day period (the "2025 Measurement Period") in which the trading price (as defined in the 2025 Indenture governing the 2025 convertible senior notes) per \$1,000 principal amount of the 2025 convertible senior notes for each trading day of the 2025 Measurement Period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate in effect on each such trading day; (3) if the Company calls any or all of the 2025 convertible senior notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or (4) upon the occurrence of specified corporate events. On or after March 1, 2025 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert all or any portion of their 2025 convertible senior notes, in multiples of \$1,000 principal amount, at the option of the holder regardless of the foregoing circumstances.

Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. If the Company undergoes a fundamental change (as defined in the indenture governing the 2025 convertible senior notes), subject to certain conditions, holders may require the Company to repurchase for cash all or any portion of their 2025 convertible senior notes, in principal amounts of \$1,000 or a multiple thereof, at a fundamental change repurchase price equal to 100% of the principal amount of the 2025 convertible senior notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. In addition, following certain corporate events or if the Company issues a notice of redemption, it will, under certain circumstances, increase the conversion rate for holders who elect to convert their notes in connection with such corporate event or during the relevant redemption period.

There have been no changes to the initial conversion price of the 2025 convertible senior notes since issuance. The closing market price of the Company's common stock of \$67.86 per share as of December 30, 2022, the last trading day during the three months ended December 31, 2022, was below \$174.64 per share, which represents 130% of the initial conversion price of \$134.34 per share. Additionally, the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day, December 30, 2022, was not greater than or equal to 130% of the initial conversion price. As such, during the three months ended December 31, 2022, the conditions allowing holders of the 2025 convertible senior notes to convert were not met. The 2025 convertible senior notes are therefore not convertible for the three months ending March 31, 2023.

The Company may not redeem the 2025 convertible senior notes prior to June 6, 2023. The Company may redeem for cash all or any portion of the 2025 convertible senior notes, at its option, on or after June 6, 2023 and prior to March 1, 2025 if the last reported sale price of its common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending not more than two trading days immediately preceding the date on which the Company provides notice of redemption at a redemption price equal to 100% of the principal amount of the 2025 convertible senior notes to be redeemed, plus accrued and unpaid interest, if any, to, but excluding, the redemption date. No sinking fund is provided for the 2025 convertible senior notes.

The 2025 convertible senior notes are the Company's senior unsecured obligations and rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated in right of payment to the 2025 convertible senior notes; equal in right of payment to any of the Company's unsecured indebtedness that is not so

subordinated (including the 2023 convertible senior notes); effectively junior in right of payment to any of the Company's secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of the Company's subsidiaries.

The net carrying amount of the 2025 convertible senior notes as of December 31, 2022 and 2021 was as follows (in thousands):

	December 31, 2022	December 31, 2021
Principal	\$ 747,500	\$ 747,500
Unamortized issuance costs	(9,124)	(12,835)
Net carrying amount	<u>\$ 738,376</u>	<u>\$ 734,665</u>

Interest expense related to the 2025 convertible senior notes was as follows (in thousands):

	Year Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Contractual interest expense	\$ 3,737	\$ 4,007	\$ 2,230
Amortization of debt discount	—	—	16,528
Amortization of issuance costs	3,711	3,674	1,538
Total interest expense	<u>\$ 7,448</u>	<u>\$ 7,681</u>	<u>\$ 20,296</u>

In connection with the issuance of the 2025 convertible senior notes, the Company entered into privately negotiated capped call transactions (the "2025 Capped Call Transactions") with certain financial institutions. The initial cap price of the 2025 Capped Call Transactions was \$206.68 per share and is subject to certain adjustments under the terms of the 2025 Capped Call Transactions. The 2025 Capped Call Transactions cover, subject to anti-dilution adjustments, approximately 5.6 million shares of the Company's common stock.

2023 Convertible Senior Notes and Related Capped Call Transactions

In May 2018, the Company issued \$258.8 million aggregate principal amount of the 2023 convertible senior notes in a private offering. The 2023 convertible senior notes mature on May 1, 2023 and bear interest at a fixed rate of 0.125% per annum, payable semiannually in arrears on May 1 and November 1 of each year. The total net proceeds from the offering, after deducting initial purchasers' discounts and commissions and estimated debt issuance costs, was approximately \$250.8 million.

In May 2020, the Company used part of the net proceeds from the issuance of the 2025 convertible senior notes to repurchase, exchange or otherwise retire approximately \$181.0 million aggregate principal amount of the 2023 convertible senior notes in privately-negotiated transactions for aggregate consideration of \$449.6 million, consisting of \$181.0 million in cash and 2,723,581 shares of the Company's common stock (the "2023 Note Repurchase Transactions").

As of December 31, 2022, after giving effect to the 2023 Note Repurchase Transactions and other settlements upon conversion requests, approximately \$0.2 million aggregate principal amount of 2023 convertible senior notes remained outstanding.

The 2023 Note Repurchase Transactions were accounted for as a debt extinguishment. Pursuant to ASC Subtopic 470-20 under existing accounting rules prior to ASU 2020-06 adoption, total consideration for the 2023 Note Repurchase Transactions was separated into liability and equity components by estimating the fair value of a similar liability without a conversion option and assigning the residual value to the equity component. The gain or loss on extinguishment of the debt was subsequently determined by comparing the repurchase consideration allocated to the liability component to the sum of the carrying value of the liability component, net of the proportionate amounts of unamortized debt discount and the remaining unamortized debt issuance costs. Of the \$449.6 million in aggregate consideration paid by the Company in connection with the 2023 Note Repurchase Transactions, \$155.8 million and \$293.8 million were allocated to the debt and equity components, respectively, using an effective interest rate of 5.32% to determine the fair value of the liability component. This interest rate was based on the income and market-based approaches used to determine the effective interest rate of the 2023 convertible senior notes, adjusted for the remaining term of the 2023 convertible senior notes. As of the settlement

of the 2023 Note Repurchase Transactions, the carrying value of the 2023 convertible senior notes subject to the 2023 Note Repurchase Transactions, net of unamortized debt discount and issuance costs, was \$150.4 million. The Company also incurred approximately \$0.5 million in third party transaction costs related to the 2023 Note Repurchase Transactions. These costs were allocated to the liability and equity components in proportion to the allocation of consideration transferred at settlement and accounted for as debt extinguishment costs and equity reacquisition costs, respectively. The 2023 Note Repurchase Transactions resulted in a \$5.8 million loss on early debt extinguishment in the second quarter of fiscal 2020, of which \$2.7 million consisted of unamortized debt issuance costs.

Each \$1,000 principal amount of the 2023 convertible senior notes was initially convertible into 24.4978 shares of the Company's common stock (the "2023 Conversion Option"), which is equivalent to an initial conversion price of approximately \$40.82 per share of common stock, subject to adjustment upon the occurrence of specified events. The 2023 convertible senior notes were convertible, in multiples of \$1,000 principal amount, at the option of the holders at any time prior to the close of business on the business day immediately preceding November 1, 2022, only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ended on September 30, 2018 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day; (2) during the five business day period after any five consecutive trading day period (the "2023 Measurement Period") in which the trading price (as defined in the indenture governing the 2023 convertible senior notes) per \$1,000 principal amount of the 2023 convertible senior notes for each trading day of the 2023 Measurement Period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate in effect on each such trading day; (3) if the Company calls any or all of the 2023 convertible senior notes for redemption, at any time prior to the close of business on the second scheduled trading day immediately preceding the redemption date; or (4) upon the occurrence of specified corporate events. On or after November 1, 2022 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert all or any portion of their 2023 convertible senior notes, in multiples of \$1,000 principal amount, at the option of the holder regardless of the foregoing circumstances.

Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock, at the Company's election. If the Company undergoes a fundamental change (as defined in the indenture governing the 2023 convertible senior notes), subject to certain conditions, holders may require the Company to repurchase for cash all or any portion of their 2023 convertible senior notes, in principal amounts of \$1,000 or a multiple thereof, at a fundamental change repurchase price equal to 100% of the principal amount of the 2023 convertible senior notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. In addition, following certain corporate events that occur prior to the maturity date or if the Company issues a notice of redemption, it will, under certain circumstances, increase the conversion rate for holders who elect to convert their 2023 convertible senior notes in connection with such corporate event or during the relevant redemption period.

There have been no changes to the initial conversion price of the 2023 convertible senior notes since issuance. During each of the quarters from the third quarter of 2019 through the third quarter of 2022, one of the triggers for convertibility of the 2023 convertible senior notes was triggered as the last reported sale price of the Company's common stock was greater than \$53.07 per share, which represents 130% of the initial conversion price of \$40.82 per share, for at least 20 trading days in the period of 30 consecutive trading days ended on, and including, the last trading day of the quarter for each quarter of 2020, 2021 and for the first three quarters of 2022. As a result, the 2023 convertible senior notes were convertible, in multiples of \$1,000 principal amount, at the option of the 2023 convertible senior note holders between October 1, 2019 to October 31, 2022. The 2023 convertible senior notes continue to be convertible from November 1, 2022 until the close of business on the second scheduled trading day immediately preceding the maturity date. During 2021, the Company paid \$24.7 million in cash and issued 453,943 shares of its common stock to settle aggregate principal amount of \$24.6 million of its 2023 convertible senior notes. During 2022, the Company paid \$34.1 million in cash and issued 573,633 shares of its common stock to settle aggregate principal amount of \$34.1 million of its 2023 convertible senior notes. As of December 31, 2022, approximately \$0.2 million aggregate principal amount of the 2023 convertible senior notes remained outstanding. The conversions that occurred prior to January 1, 2021 resulted in a \$1.2 million loss on early debt extinguishment. The conversions that occurred during 2021 and 2022 were subject to ASU 2020-06 and such conversions were accounted for as contractual conversions, which did not result in any gain or loss upon their settlement.

During 2021, the Company received 68,905 shares from the partial unwind of capped calls resulting from the settlement of its 2023 convertible senior notes. During 2022, the Company received an additional 119,492 shares from the partial unwind of capped calls resulting from the settlement of its 2023 convertible senior notes. The receipt of the 68,905 and 119,492 shares reduced the number of shares of common stock outstanding.

The 2023 convertible senior notes are the Company's senior unsecured obligations and rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated in right of payment to the 2023 convertible senior notes; equal in right of payment to any of the Company's unsecured indebtedness that is not so subordinated (including the 2025 convertible senior notes); effectively junior in right of payment to any of the Company's secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of the Company's subsidiaries.

The net carrying amount of the 2023 convertible senior notes as of December 31, 2022 and 2021 was as follows (in thousands):

	December 31, 2022	December 31, 2021
Principal	\$ 169	\$ 34,225
Unamortized issuance costs	—	(291)
Net carrying amount	<u>\$ 169</u>	<u>\$ 33,934</u>

Interest expense related to the 2023 convertible senior notes was as follows (in thousands):

	Year Ended		
	December 31, 2022	December 31, 2021	December 31, 2020
Contractual interest expense	\$ 6	\$ 42	\$ 184
Amortization of debt discount	—	—	7,006
Amortization of issuance costs	32	283	666
Total interest expense	<u>\$ 38</u>	<u>\$ 325</u>	<u>\$ 7,856</u>

In connection with the issuance of the 2023 convertible senior notes, the Company entered into privately negotiated capped call transactions (the “2023 Capped Call Transactions”) with certain financial institutions. The initial cap price of the 2023 Capped Call Transactions was \$62.80 per share, and is subject to certain adjustments under the terms of the 2023 Capped Call Transactions. The 2023 Capped Call Transactions cover, subject to anti-dilution adjustments, approximately 6.3 million shares of the Company’s common stock.

In connection with the 2023 Note Repurchase Transactions, the Company amended the 2023 Capped Call Transactions such that the portion associated with the 2023 convertible senior notes subject to the 2023 Note Repurchase Transactions would remain outstanding notwithstanding the retirement of \$181.0 million aggregate principal amount of 2023 convertible senior notes. Following such amendment, the 2023 Capped Call Transactions continue to meet the accounting criteria to be recorded in stockholders’ equity and are not accounted for as derivatives.

Adoption of ASU 2020-06

On January 1, 2021, the Company elected to early adopt ASU 2020-06 based on a modified retrospective transition method. Under such transition, prior-period information was not retrospectively adjusted.

Prior to the adoption of ASU 2020-06, the 2025 and 2023 convertible senior notes were separated into liability and equity components. The carrying amount of the liability component was calculated by measuring the fair value of a similar debt instrument that does not have an associated conversion feature. The equity component was recorded in additional paid-in-capital and was not re-measured as long as it continued to meet the conditions for equity classification. The excess of the principal amount of the liability component over its carrying amount (the “Debt Discount”) was amortized to interest expense over the contractual term of the 2025 and 2023 convertible senior notes at an effective interest rate of 5.76% and 6.39%, respectively.

Prior to the adoption of ASU 2020-06, the debt issuance costs related to the 2025 and 2023 convertible senior notes were allocated to the liability and equity components based on their relative values. Issuance costs attributable to the liability component were amortized to interest expense using the effective interest method over the contractual term of the 2025 and 2023 convertible senior notes. Issuance costs attributable to the equity component were netted with the equity component in additional paid-in-capital.

In accounting for the 2025 and 2023 convertible senior notes after adoption of ASU 2020-06, the 2025 convertible senior notes are accounted for as a single liability, and the issuance costs related to the 2025 and 2023 convertible senior notes are being amortized to interest expense over the contractual term at an effective interest rate of 1.0% and 0.76%, respectively.

7. Stockholders' Equity

Capital Structure

Common Stock

The Company is authorized to issue 450,000,000 shares of common stock with a par value of \$0.001 per share. As of December 31, 2022 and 2021, the Company had 71,047,179 and 68,488,337 shares of common stock issued and outstanding, respectively.

During 2022 and 2021, the Company issued 573,633 and 453,943 shares, respectively, of common stock in connection with 2023 convertible senior note settlements. During 2022 and 2021, the Company also received 119,492 and 68,905 shares, respectively, from the partial unwind of capped calls resulting from the settlement of its 2023 convertible senior notes. The receipt of the 119,492 and 68,905 shares reduced the number of shares of common stock outstanding. See Note 6 for further details.

Holders of the Company's common stock are entitled to dividends, if and when declared by the board of directors. In the event of liquidation, dissolution or winding up, subject to the rights of the holders of any then outstanding shares of preferred stock, holders of common stock will be entitled to receive the assets and funds of the Company that are legally available for distribution.

Preferred Stock

The Company is authorized to designate and issue up to 5,000,000 shares of preferred stock with a par value of \$0.001 per share in one or more series without stockholder approval and to fix the rights, preferences, privileges and restrictions thereof. As of December 31, 2022 and 2021, there were no shares of preferred stock issued and outstanding.

Common Stock Reserved for Future Issuance

Shares of common stock reserved for future issuance related to outstanding equity awards and employee equity incentive plans as of December 31, 2022, were as follows (in thousands):

	Common Stock Reserved
Stock options outstanding	1,481
RSUs (including PRSUs) outstanding	3,718
Shares available for future grant under 2014 Plan	14,230
Shares available for future issuance under ESPP	3,570
Total shares of common stock reserved	<u>22,999</u>

Equity Incentive Plans

Prior to the Company's initial public offering ("IPO") in April 2014, the Company granted stock options under its Amended and Restated 2004 Equity Incentive Plan, as amended ("2004 Plan").

Under the terms of the 2004 Plan, the Company had the ability to grant incentive and nonstatutory stock options. Incentive stock options could only be granted to Company employees. Nonstatutory stock options could be granted to Company employees, directors and consultants. Such options are exercisable at prices, as determined by the board of directors, generally equal to the fair value of the Company's common stock at the date of grant. Options granted to employees generally vest over a four-year period, with an initial vesting period of 12 months for 25% of the shares, and the remaining 75% of the shares vesting monthly on a ratable basis over the remaining 36 months. Options generally expire 10 years after the grant date and are generally exercisable upon vesting. Vested options generally expire 90 days after termination of the optionee's employment or relationship as a consultant or director, unless otherwise extended by the terms of the stock option agreement.

In March 2014, the Company's board of directors and stockholders approved the 2014 Equity Incentive Plan ("2014 Plan") and 5,300,000 shares of common stock were authorized for issuance under the 2014 Plan. In addition, on the first day of each year beginning in 2015 and ending in 2024, the 2014 Plan provides for an annual automatic increase to the shares reserved for issuance in an amount equal to 5% of the total number of shares outstanding on December 31st of the preceding calendar year or a lesser number as determined by the Company's board of

directors. Pursuant to the automatic annual increase, 3,552,358 additional shares were reserved under the 2014 Plan on January 1, 2023. No further grants were made under the 2004 Plan once the 2014 Plan became effective on April 3, 2014. Upon the effectiveness of the 2014 Plan, all shares reserved for future issuance under the 2004 Plan became available for issuance under the 2014 Plan. Additionally, any forfeited or expired shares that would have otherwise returned to the 2004 Plan, instead return to the 2014 Plan. The 2014 Plan allows the Company to grant stock options, RSUs, restricted stock awards, performance stock awards, stock appreciation rights, performance cash awards, and other stock awards. To date, the Company has granted stock options and RSUs under the 2014 Plan. Stock options granted under the 2014 Plan are in general at a price equal to the fair market value of the common stock on the date of grant and vest over four years. The Company's stock options expire 10 years from the date of grant. Each RSU granted under the 2014 Plan represents a right to receive one share of the Company's common stock when the RSU vests. RSUs generally vest over one to four years. Vested options generally expire three months after termination of the optionee's employment or relationship as a consultant or director, unless otherwise extended by the terms of the stock option agreement.

In connection with the Company's acquisition of Inference, the Company assumed unvested stock options that had been granted under the Inference Technologies Group Inc. 2018 Equity Incentive Plan. Each of the assumed stock options are subject to substantially the same terms and conditions as applied to the assumed stock options immediately prior to the acquisition date, except that the number of shares of the Company's common stock subject to each assumed stock option and the exercise price has been adjusted in accordance with the terms of the acquisition agreement. If these assumed stock options are cancelled, forfeited or expire unexercised, the underlying shares do not become available for future grant. As of the acquisition date, the estimated fair value of the assumed unvested options was \$7.6 million, of which \$0.2 million was recognized as goodwill and the balance of \$7.4 million is being recognized as stock-based compensation expense over the remaining service period of the assumed unvested stock options.

Stock Options

A summary of the Company's stock option activity during the year ended December 31, 2022 is as follows (in thousands, except years and per share data):

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value ⁽¹⁾
Outstanding as of December 31, 2021	1,982	\$ 38.65		
Options granted	81	110.05		
Options exercised	(531)	16.06		
Options forfeited or expired	(51)	122.88		
Outstanding as of December 31, 2022	<u>1,481</u>	47.75	4.6	\$ 51,226
Vested and expected to vest as of December 31, 2022	<u>1,481</u>	47.75	4.6	51,226
Exercisable as of December 31, 2022	<u>1,263</u>	35.60	4.0	50,583

(1) The aggregate intrinsic value amounts are computed based on the difference between the exercise price of the stock options and the fair market value of the Company's common stock of \$67.86 per share as of December 30, 2022 for all in-the-money stock options outstanding.

Following is additional information pertaining to the Company's stock option activity (in thousands, except per share data):

	Year Ended December 31,		
	2022	2021	2020
Weighted average grant date fair value per share of options granted, excluding assumed stock options	\$ 50.44	\$ 78.72	\$ 38.80
Weighted average grant date fair value per share of assumed stock options	—	—	125.96
Intrinsic value of options exercised ⁽¹⁾	45,698	59,762	47,529
Total fair value of options vested during the period	11,421	12,760	7,846
Cash received from options exercised	8,522	7,402	11,656

(1) Intrinsic value of options exercised is the difference between the fair market value of the Company's common stock at the time of exercise and the exercise price paid.

Restricted Stock Units (including Performance-Based Restricted Stock Units)

A summary of RSU activity (including PRSUs) during the year ended December 31, 2022 is as follows (in thousands, except years and per share data):

	Number of Shares	Weighted Average Grant Date Fair Value Per Share
Outstanding as of December 31, 2021	2,560	\$ 125.65
RSUs granted ⁽¹⁾	2,912	90.51
RSUs vested and released	(1,383)	112.18
RSUs forfeited or cancelled	(371)	121.48
Outstanding as of December 31, 2022	3,718	103.55

(1) Includes 0.4 million PRSUs granted during 2022.

Performance-Based Restricted Stock Units

In 2022, the Company granted 0.3 million PRSUs subject to market and service conditions ("market-based PRSUs") and with a weighted average grant date fair value of \$30.6 million as part of its annual grant of equity incentive awards to certain executives and in connection with the appointment of Michael Burkland as the Company's new Chief Executive Officer. The amount that may be earned pursuant to the PRSUs ranges from 0% to 200% of the target number based on the Company's relative total shareholder return ("RTSR") performance as compared to the companies in the S&P Software and Services Select Index during three one-year performance periods. One-third of the total PRSUs may be earned and settled in shares following the end of each one-year performance period based on RTSR performance and subject to continued employment through the payment date, but the amount initially paid for the first two one-year performance periods is limited to 100% of the target amount for such years, and any PRSUs resulting from above-target performance in those first two years will be paid following the end of final one-year performance period, subject to the executive's continued employment through the payment date. If the Company's absolute total shareholder return for any performance period is negative, then no more than 100% of the target amount of PRSUs for such period may be earned. If an executive's employment with the Company terminates before the end of the final one-year performance period due to death or disability, 100% (if due to death) or 50% (if due to disability) of the unvested PRSUs may be earned subject to ultimate RTSR performance in each remaining performance period. Upon a qualifying termination of employment in connection with a change in control of the Company, the unvested PRSUs will vest on a double-trigger basis (i) at the target level for approximately 0.1 million of the market-based PRSUs and (ii) for approximately 0.2 million of the market-based PRSUs, (a) at the target level for the uncompleted portions of the performance periods and (b) at the actual level of performance measured through the date of the change in control of the Company, based on the price per share paid in such change in control. The fair value of the PRSUs are determined on their grant date using a Monte

Carlo Simulation model based upon assumptions presented below. The Company recognizes the fair value of the PRSUs ratably over their requisite service period.

In 2022, the Company granted 0.1 million shares of PRSUs subject to revenue-based performance and service conditions (“revenue-based PRSUs”), with a grant date fair value of \$6.6 million. The amount of revenue-based PRSUs that may be earned will be determined based on achievement of two quarterly revenue goals. One third of the revenue-based PRSUs may be earned based on achievement of the first revenue target and, if achieved, will vest in four quarterly installments, with the first installment occurring on the date such achievement is certified, subject to the executive's continuous service through the applicable vesting dates. Two thirds of the revenue-based PRSUs may be earned based on achievement of the second revenue target and, if achieved, will vest in eight quarterly installments, with the first installment occurring on the date such achievement is certified, subject to the executive's continuous service through the applicable vesting dates. The revenue-based PRSUs are otherwise on the Company's standard award terms from its market-based PRSUs. The Company concluded that the first revenue target was probable of achievement at December 31, 2022, thus recognized the related stock-based compensation cost through this period. The Company, however, concluded that, as of December 31, 2022, the second revenue target was not probable of achievement, thus recognized a cumulative catch-up adjustment in the fourth quarter of 2022 to reverse all previously recognized stock-based compensation cost related to this target. The Company will reassess the probability of the achievement of the performance conditions at each reporting period and a cumulative catch-up adjustment will be recorded to stock-based compensation cost for any change in the probability assessment.

Following is additional information pertaining to the Company’s RSU activity (including PRSUs) (in thousands, except per share data):

	Year Ended December 31,		
	2022	2021	2020
Weighted average grant date fair value per share of RSUs granted	\$ 90.51	\$ 177.00	\$ 86.15
Total fair value of RSUs vested during the period	125,798	174,500	136,805

Employee Stock Purchase Plan

In March 2014, the Company’s board of directors and stockholders adopted the 2014 ESPP and the shares authorized for issuance thereunder. The 2014 ESPP became effective on April 3, 2014.

The 2014 ESPP permits eligible employees to purchase shares of the Company’s common stock through payroll deductions with up to 15% of their pre-tax earnings subject to certain Internal Revenue Code limitations. The purchase price of the shares is 85% of the lower of the fair market value of the Company’s common stock on the first day of a six month offering period, except for the initial offering period, or the relevant purchase date. In addition, no participant may purchase more than 1,500 shares of common stock in each purchase period.

The number of shares of common stock originally reserved for issuance under the 2014 ESPP was 880,000 shares, which increases automatically each year, beginning on January 1, 2015 and continuing through January 1, 2024, by the lesser of (i) 1% of the total number of shares of the Company’s common stock outstanding on December 31 of the preceding calendar year; (ii) 1,000,000 shares of common stock (subject to adjustment to reflect any split or combination of its common stock); or (iii) such lesser number as determined by its board of directors. Pursuant to the automatic annual increase, 710,471 additional shares were reserved under the 2014 ESPP on January 1, 2023.

During 2022 and 2021, 190,257 and 120,992 shares were purchased by employees under the 2014 ESPP at a weighted average price of \$70.50 and \$127.36 per share, respectively.

Stock-Based Compensation

Stock-based compensation expenses for the years ended December 31, 2022, 2021 and 2020 were as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cost of revenue	\$ 33,297	\$ 17,734	\$ 9,422
Research and development	44,367	29,179	14,043
Sales and marketing	59,300	35,269	20,164
General and administrative	35,543	26,623	21,118
Total stock-based compensation	<u>\$ 172,507</u>	<u>\$ 108,805</u>	<u>\$ 64,747</u>

As of December 31, 2022, unrecognized stock-based compensation expense by award type and their expected weighted-average recognition periods are summarized in the following table (in thousands, except years).

	Stock Option	RSU (excluding PRSUs)	PRSU	ESPP
Unrecognized stock-based compensation expense	\$ 12,085	\$ 324,834	\$ 24,841	\$ 3,265
Weighted-average amortization period	2.2 years	2.4 years	2.5 years	0.4 years

The Company recognizes stock-based compensation expense that is calculated based upon awards that have vested, reduced for actual forfeitures. All stock-based compensation for equity awards granted to employees and non-employee directors is measured based on the grant date fair value of the award.

The Company values RSUs, including PRSUs subject to performance conditions, at the closing market price of its common stock on the date of grant. The Company estimates the fair value of each stock option and purchase right under the 2014 ESPP granted to employees on the date of grant using the Black-Scholes option-pricing model using the assumptions disclosed in the table below. The Company estimates the fair value of PRSUs subject to market conditions using a Monte Carlo Simulation model using the assumptions disclosed in the table below. Expected volatility is based upon the weighting of the Company's historical volatility. Prior to 2020, expected volatility was based upon the weighting of the Company's historical volatility and the historical volatility of a peer group of publicly traded companies. The expected term of options granted is estimated using the simplified method by taking the average of the vesting term and the contractual term of the option. The expected volatility assumption for purchase rights under the 2014 ESPP is based on the historical volatility of the Company's common stock. The risk-free rate for the expected term of the awards is based on U.S. Treasury zero-coupon issues at the time of grant. The Company has not paid, and does not anticipate paying, cash dividends on its shares of common stock. Accordingly, the expected dividend yield is zero.

The weighted average assumptions used to value stock options granted during the periods presented were as follows:

Stock Options	Year Ended December 31,		
	2022	2021	2020 ⁽¹⁾
Expected term (years)	6.0	6.0	5.7
Volatility	46%	47%	47%
Risk-free interest rate	1.8%	1.0%	0.9%
Dividend yield	—	—	—

- (1) The weighted average assumptions for the year ended December 31, 2020 includes assumed stock options. The weighted average assumptions, excluding the assumed stock options, were an expected term of 6.0 years, volatility of 47%, risk-free interest rate of 1.0% and dividend yield of 0%. The weighted average assumptions of the assumed stock options were an expected term of 4.3 years, volatility of 47%, risk-free interest rate of 0.3% and dividend yield of 0%.

The weighted average assumptions used to value PRSUs with market conditions granted during the periods presented were as follows:

PRSUs (Market Conditions)	Year Ended December 31,		
	2022	2021	2020
Expected term (years)	3.0	—	—
Volatility	53%	—	—
Risk-free interest rate	3.5%	—	—
Dividend yield	—	—	—

The weighted average assumptions used to value purchase rights under the 2014 ESPP granted during the periods presented were as follows:

ESPP	Granted In					
	November 2022	May 2022	November 2021	May 2021	November 2020	May 2020
Expected term (years)	0.5	0.5	0.5	0.5	0.5	0.5
Volatility	59%	46%	46%	49%	50%	50%
Risk-free interest rate	2.1%	0.2%	0.2%	0.1%	0.1%	0.2%
Dividend yield	—	—	—	—	—	—

8. Net Loss Per Share

Basic net loss per share is calculated by dividing net loss by the weighted average number of shares of common stock outstanding during the period, and excludes any dilutive effects of employee stock-based awards and potential shares upon conversion of the convertible senior notes. Diluted net loss per share is computed giving effect to all potentially dilutive shares of common stock, including common stock issuable upon exercise of stock options, vesting of RSUs and PRSUs, and shares of common stock issuable upon conversion of convertible senior notes. As the Company had net losses for the years ended December 31, 2022, 2021 and 2020, all potentially issuable shares of common stock were determined to be anti-dilutive.

The following table presents the calculation of basic and diluted net loss per share (in thousands, except per share data):

	Year Ended December 31,		
	2022	2021	2020
Net loss	\$ (94,650)	\$ (53,000)	\$ (42,130)
Weighted-average shares used in computing basic and diluted net loss per share	69,920	67,512	64,154
Basic and diluted net loss per share	\$ (1.35)	\$ (0.79)	\$ (0.66)

The following securities were excluded from the calculation of diluted net loss per share because their effect would have been anti-dilutive (in thousands):

	December 31,		
	2022	2021	2020
Stock options	1,481	1,982	2,255
RSUs (including PRSUs)	3,718	2,560	2,267
Convertible senior notes ⁽¹⁾	5,685	6,663	910
Total	10,884	11,205	5,432

⁽¹⁾ The Company used the if-converted method for 2022 and 2021 due to the adoption of ASU 2020-06 and under the treasury stock method for 2020.

Prior to the adoption of ASU 2020-06, the Company used the treasury stock method for calculating any potential dilutive effect of the conversion spread of its convertible senior notes. The conversion spread had a dilutive impact for the 2023 convertible senior notes during the year ended December 31, 2020 since the average market price of the Company's common stock during the period exceeded the initial conversion price of \$40.82 per share. However, the potential shares of common stock issuable upon the conversion of the 2023 convertible senior notes were excluded from the calculation of diluted net loss per share because their effect would have been anti-dilutive.

After the adoption of ASU 2020-06, the Company used the if-converted method for calculating any potential dilutive effect of the convertible senior notes for the years ended December 31, 2022 and 2021. Under this method, the Company calculates diluted earnings per share under both the cash and share settlement assumptions to determine which is more dilutive. If share settlement is more dilutive, the Company calculates diluted earnings per share assuming that all of the convertible senior notes were converted solely into shares of common stock at the beginning of the reporting period. The potential impact upon the conversion of the convertible senior notes were excluded from the calculation of diluted net loss per share for the years ended December 31, 2022 and 2021 because the effect would have been anti-dilutive.

9. Income Taxes

The following table presents components of loss before income taxes for the periods presented (in thousands):

	Year Ended December 31,		
	2022	2021	2020
United States	\$ (76,280)	\$ (59,856)	\$ (44,303)
International	(13,982)	(4,429)	(280)
Loss before income taxes	\$ (90,262)	\$ (64,285)	\$ (44,583)

Provision for (benefit from) income taxes for the periods presented consisted of (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Current:			
U.S. federal	\$ —	\$ —	\$ —
U.S. state	576	262	401
Foreign	724	(202)	233
Total provision for income taxes - Current	1,300	60	634
Deferred:			
U.S. federal	—	—	(2,495)
U.S. state	—	—	(414)
Foreign	3,088	(11,345)	(178)
Total provision for (benefit from) income taxes - Deferred	3,088	(11,345)	(3,087)
Total provision for (benefit from) income taxes	\$ 4,388	\$ (11,285)	\$ (2,453)

The Company recorded a deferred income tax expense during 2022 principally due to a repatriation of intellectual property from its Australian subsidiary to the U.S., where it is offset by a valuation allowance, and a decrease in available Australian net operating loss carryforwards.

Income tax (benefit) expense differed from the amount computed by applying the U.S. federal statutory income tax rate of 21% to pre-tax (loss) income for the periods presented as a result of the following (in thousands):

	Year Ended December 31,		
	2022	2021	2020
U.S. federal tax at statutory rate	\$ (18,957)	\$ (13,500)	\$ (9,362)
U.S. state income taxes	576	262	(345)
Section 162(m)	3,851	7,543	6,472
Global intangible low-taxed income	4,127	—	—
Non-deductible expenses	78	1,361	1,944
Research and development credit	(1,194)	(1,181)	(837)
Stock-based compensation	1,722	(25,241)	(23,800)
Tax benefit from acquisition/reorganizations	(3,852)	(5,877)	(2,495)
Foreign taxes	6,749	(4,760)	118
Other	—	20	533
Change in valuation allowance	11,288	30,088	25,319
Total provision for (benefit from) income taxes	\$ 4,388	\$ (11,285)	\$ (2,453)

The tax effects of temporary differences that give rise to significant portions of the Company's deferred tax assets and liabilities as of December 31, 2022 and 2021 related to the following (in thousands):

	December 31,	
	2022	2021
Deferred tax assets:		
Net operating loss and credit carryforwards	\$ 125,698	\$ 133,433
Capitalized R&D costs	30,552	—
Accrued liabilities	10,295	12,719
Allowance for doubtful accounts	1,143	712
Amortized intangibles	3,041	872
Deferred revenue	1,992	1,351
Accrued compensation	3,238	3,963
Long-term lease liabilities	12,421	13,618
Gross deferred tax assets	188,380	166,668
Valuation allowance	(135,406)	(121,835)
Net deferred tax assets	52,974	44,833
Deferred tax liabilities:		
Property and equipment	(2,737)	(2,633)
Other	(556)	(509)
Right of use assets	(10,419)	(11,573)
Deferred compensation - Current	(35,443)	(23,211)
Gross deferred tax liabilities	(49,155)	(37,926)
Net deferred taxes	\$ 3,819	\$ 6,907

With the exception of Russia, the Company has not provided for U.S. income taxes on undistributed earnings of its foreign subsidiaries because it intends to permanently re-invest those earnings outside the United States. The Company has plans to liquidate its Russian subsidiary. As such, the Company can no longer assert an intention to permanently re-invest those earnings. The undistributed earnings of the Company's foreign subsidiaries were immaterial as of December 31, 2022 and 2021 and no U.S. income taxes have been accrued.

A valuation allowance is provided for deferred tax assets where the recoverability of the assets is uncertain. The determination to provide a valuation allowance is dependent upon the assessment of whether it is more likely than not that sufficient future taxable income will be generated to utilize the deferred tax assets. Based on the weight of the available evidence, which includes the Company's historical operating losses, lack of taxable income and the accumulated deficit for the year ended December 31, 2022, the Company has provided a valuation allowance against its U.S. net deferred tax assets. However, the Company has recorded net foreign deferred tax assets associated with its U.K. and Australia operations totaling \$3.8 million, which cannot increase its U.S. valuation allowance. The net change in the valuation allowance for the years ended December 31, 2022 and 2021 was an increase of \$13.6 million and \$70.7 million, respectively. The increase in the valuation allowance in the current year was primarily attributed to the new requirement to capitalize tax research and development costs under Section 174 of the Internal Revenue Code of 1986, as amended ("IRC"), offset by an increase in the Company's deferred contract costs. The requirement to capitalize under Section 174 was passed with the Tax Cuts and Jobs Act of 2017 but was not effective until tax years beginning after December 31, 2021. Domestic expenditures will be amortized over five years, while foreign expenditures are amortized over fifteen years.

As of December 31, 2022, the Company had net operating loss carryforwards for federal, state and foreign income tax purposes of \$456.9 million, \$310.9 million and \$13.5 million, respectively, available to reduce future income subject to income taxes. If not utilized, the federal and significant state net operating loss carryforwards will begin to expire in 2024 and 2028, respectively, while the foreign net operating loss carryforwards do not expire. As of December 31, 2022, the Company also had gross research credit carryforwards for federal and California state tax purposes of \$10.8 million and \$7.0 million, available to reduce future income subject to income taxes. A portion of the federal research credit carryforwards will continue to expire in 2023. The California state research credits do not expire. The IRC imposes restrictions on the utilization of net operating losses and credits in the event of an

“ownership change” of a corporation. Accordingly, a company’s ability to use net operating losses and credits may be subject to substantial limitation as prescribed under the IRC Sections 382 and 383 and similar state provisions. Events that may cause limitations in the amount of the net operating losses and credits that the Company may use in any one year include, but are not limited to, a cumulative ownership change of more than 50% over a three-year period. In the event the Company has changes in ownership, net operating losses and research and development credit carryforwards, which are fully reserved by the deferred tax asset valuation allowance, could be limited and may expire unutilized.

Unrecognized Tax Benefits

The table below shows the changes in the gross amount of unrecognized tax benefits for the periods presented (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Unrecognized benefit — beginning of period	\$ 7,643	\$ 6,076	\$ 4,471
Gross increases — current year tax positions	1,773	1,851	1,605
Gross decreases — prior year tax positions	(1)	—	—
Settlements with tax authorities	—	(284)	—
Unrecognized benefit — end of period	<u>\$ 9,415</u>	<u>\$ 7,643</u>	<u>\$ 6,076</u>

As of each of December 31, 2022 and 2021, the Company did not have any unrecognized tax benefits that, if recognized, would have a material impact on its effective tax rate for each such respective year. The Company recognizes interest and penalties related to uncertain tax positions as income tax expense. The Company does not anticipate its total unrecognized tax benefits as of December 31, 2022 will significantly change due to settlement of examination or the expiration of statutes of limitation during the next 12 months. The Company is currently unaware of any uncertain tax positions that could result in significant additional payments, accruals or other material deviation in this estimate over the next 12 months.

The Company is subject to taxation in the United States, various states and several foreign jurisdictions. Due to the Company’s net carryover of unused operating losses, all years from 2001 forward remain subject to future examination by the U.S. federal and state tax authorities. The Company’s foreign tax returns are open to audit under the statutes of limitation of the respective foreign countries in which its subsidiaries are located. With the exception of Russia, the Company considers all undistributed earnings of its foreign subsidiaries indefinitely reinvested.

10. Commitments and Contingencies

Commitments

As of December 31, 2022, \$747.7 million of aggregate principal of the convertible senior notes were outstanding. The 2023 convertible senior notes and the 2025 convertible senior notes are due on May 1, 2023 and June 1, 2025, respectively. See Note 6 for more information concerning the convertible senior notes.

The Company had outstanding operating lease obligations of \$57.9 million as of December 31, 2022. See Note 13 for further details. As of December 31, 2022, the Company also had outstanding cloud service agreement commitments totaling \$41.1 million, of which \$29.0 million is expected to be paid in 2023 and the remaining \$12.1 million in 2024.

Hosting and Telecommunication Usage Services

The Company has agreements with third parties to provide co-location hosting and telecommunication usage services. The agreements require payments per month for a fixed period of time in exchange for certain guarantees of network and telecommunication availability.

As of December 31, 2022, future minimum payments under these arrangements were as follows in thousands):

Year Ending December 31,	Hosting Services	Telecommunication Usage Services
2023	\$ 588	\$ 7,467
2024	238	5,940
2025	4	1,304
2026	—	459
Thereafter	\$ —	\$ —
Total future minimum payment	\$ 830	\$ 15,170

Universal Services Fund Liability

The Company is classified as a telecommunications service provider for regulatory purposes and is required to make contributions to the USF based on the revenue the Company receives from the resale of interstate and some international telecommunications services. In order to comply with the obligation to make direct contributions, the Company is registered with the USAC, which is charged by the FCC with administering the USF, and has been remitting the required contributions to USAC since its registration with the USAC in April 2013. The Company also made retroactive USF contributions based on its revenues for the period from 2008 to 2012. The Company, however, has an unresolved and arguably dormant dispute with the FCC regarding whether the Company is liable for USF contributions related to the period from 2003 through 2007. As of December 31, 2022, the Company had accrued \$0.1 million in interest related to the disputed assessments for the period of 2003 through 2007.

State and Local Taxes and Surcharges

The Company, based on analysis of its activities, has determined that it is obligated to collect and remit U.S. state or local sales, use, gross receipts, excise and utility user taxes, as well as fees or surcharges as a communications service provider in certain U.S. states, municipalities or local tax jurisdictions. The Company is registered for, collecting and remitting applicable taxes where such a determination has been made. Prior to the Company's making such determination, the Company neither collected nor remitted these taxes, fees or surcharges to applicable local, municipal or state jurisdictions. The Company continues to analyze its activities to determine if it is subject to these taxes in additional jurisdictions and based on the Company's ongoing assessment of its U.S. state and local tax collection and remittance obligations, the Company registers for tax and regulatory purposes in such jurisdictions and commences collecting and remitting applicable state and local taxes and surcharges to these jurisdictions.

As of December 31, 2022 and 2021, the Company had total accrued liabilities of \$1.2 million and \$1.0 million, respectively, for such contingent sales taxes and surcharges that were not being collected from its clients but may be imposed by various taxing authorities, of which \$0.3 million and \$0.2 million, respectively, were included in current "Sales tax liabilities" on the consolidated balance sheets, and the remaining were included in non-current "Sales tax liabilities" on the consolidated balance sheets. The Company's estimate of the probable loss incurred under this contingency is based on its analysis of the source location of its usage-based fees and the regulations and rules in each tax jurisdiction.

Legal Matters

The Company is involved in various legal and regulatory matters arising in the normal course of business. In management's opinion, resolution of these matters is not expected to have a material impact on the Company's consolidated results of operations, cash flows, or its financial position. However, due to the uncertain nature of legal matters, an unfavorable resolution of a matter could materially affect the Company's future consolidated results of operations, cash flows or financial position in a particular period. The Company expenses legal fees as incurred.

Indemnification Agreements

In the ordinary course of business, the Company enters into agreements of varying scope and terms pursuant to which it agrees to indemnify clients, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of breach of such agreements, including breach of security, services to be provided by the Company or from intellectual property infringement claims made by third parties. In addition, the Company has entered into indemnification agreements with its directors, officers and certain employees

that requires it, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. There are no claims that the Company is aware of that could have a material effect on the consolidated balance sheets, consolidated statements of operations and comprehensive loss, or consolidated statements of cash flows.

11. Geographical Information

The following table summarizes revenues by geographic region based on client billing address (in thousands):

	Year Ended December 31,		
	2022	2021	2020
United States	\$ 702,206	\$ 556,385	\$ 400,509
International	76,640	53,206	34,399
Total revenue	<u>\$ 778,846</u>	<u>\$ 609,591</u>	<u>\$ 434,908</u>

The following table summarizes total property and equipment, net in the respective locations (in thousands):

	December 31,	
	2022	2021
United States	\$ 92,659	\$ 68,674
International	8,562	9,111
Property and equipment, net	<u>\$ 101,221</u>	<u>\$ 77,785</u>

12. Retirement Plans

The Company has a 401(k) plan to provide tax deferred salary deductions for all eligible employees. Participants may make voluntary contributions to the 401(k) plan, limited by certain Internal Revenue Service restrictions. The Company is responsible for the administrative costs of the 401(k) plan. The Company began matching employee contributions in cash in the fourth quarter of 2019. The contribution expense for the years ended December 31, 2022 and 2021 was \$2.1 million and \$1.8 million, respectively.

The Company complies with the requirement of maintaining a retirement plan for employees in the Philippines. This plan is a non-contributory and defined benefit plan that provides retirement to employees equal to approximately one month salary for every year of credited service for employees who attain the normal retirement age of 60 with at least five years of service. The benefits are paid in a lump sum amount upon retirement from the Company. Total defined benefit liability under this plan was \$0.5 million and \$0.6 million as of each of December 31, 2022 and 2021, respectively. Total retirement expense for this plan were \$0.2 million, \$0.2 million, and \$0.1 million for the years ended December 31, 2022, 2021, and 2020, respectively.

13. Leases

The Company has leases for offices, data centers and computer and networking equipment that expire at various dates through 2031. The Company's leases have remaining terms of one to ten years, some of the leases include a Company option to extend the leases for up to three to five years, and some of the leases include the option to terminate the leases upon 30-days notice. The Company does not separate lease and non-lease components for real estate operating leases.

The components of lease expenses were as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Operating lease cost	\$ 12,072	\$ 10,238	\$ 6,142
Finance lease cost:			
Amortization of right-of-use assets	\$ 56	\$ 438	\$ 748
Interest on finance lease liabilities	—	—	212
Total finance lease cost	\$ 56	\$ 438	\$ 960

Supplemental cash flow information related to leases was as follows (in thousands):

	Year Ended December 31,		
	2022	2021	2020
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash used in operating leases	\$ (11,684)	\$ (7,178)	\$ (6,531)
Financing cash used in finance leases	—	(612)	(3,715)
Right of use assets obtained in exchange for lease obligations:			
Operating leases	5,984	50,101	5,980
Finance leases	—	—	—

Supplemental balance sheet information related to leases was as follows (in thousands):

	December 31,	
	2022	2021
Operating leases		
Operating lease right-of-use assets	\$ 44,120	\$ 48,703
Operating lease liabilities:	\$ 10,626	\$ 9,826
Operating lease liabilities — less current portion	41,389	47,088
Total operating lease liabilities	\$ 52,015	\$ 56,914
Finance leases		
Property and equipment, gross	\$ 36,282	\$ 42,541
Less: accumulated depreciation and amortization	(36,203)	(41,689)
Property and equipment, net	\$ 79	\$ 852

Weighted average remaining terms were as follows (in years):

	December 31,	
	2022	2021
Weighted average remaining lease term		
Operating leases	6.4 years	7.3 years
Finance leases	0.0 years	0.0 years

Weighted average discount rates were as follows:

	December 31,	
	2022	2021
Weighted average discount rate		
Operating leases	3.4 %	3.2 %
Finance leases	— %	— %

Maturities of lease liabilities were as follows (in thousands):

Year Ending December 31,	Operating Leases
2023	\$ 12,246
2024	9,986
2025	7,144
2026	5,679
2027	5,718
Thereafter	17,081
Total future minimum lease payments	57,854
Less: imputed interest	(5,839)
Total	\$ 52,015

14. Acquisitions

Inference Solutions

On November 18, 2020, the Company acquired all of the issued and outstanding shares of Inference for total consideration of approximately \$156.7 million. The total consideration comprised of \$137.0 million in cash, net of cash acquired, and \$18.1 million in estimated fair value of contingent earn out consideration. The contingent earn

out consideration was up to \$24.0 million and was based upon achievement of certain milestones and relative thresholds during the earn out measurement period which ended on December 31, 2021. The range of amounts that the Company could pay under the contingent consideration arrangement was between \$0.0 million and \$24.0 million. During 2022, the Company concluded and paid the final contingent consideration amount of \$24.0 million. See Note 3 for additional information regarding the contingent consideration arrangement. This acquisition, which was accounted for as a business combination, is intended to accelerate the Company's AI position through the addition of Inference's widely deployed IVA platform.

The excess of the purchase price over identifiable intangible assets and net tangible assets in the amount of \$131.0 million was allocated to goodwill, which is not deductible for tax purposes. The fair values assigned to assets acquired and liabilities assumed are based on management's best estimates and assumptions as of the reporting date and are considered final. The following table presents the final allocation of the purchase price at the acquisition date (in thousands):

Cash	\$	1,394
Property and equipment acquired		124
Other assets acquired		2,238
Acquired technology		28,600
Customer relationships		1,100
Trade name and trademarks		400
Goodwill		130,976
Total assets acquired		164,832
Liabilities assumed		(3,525)
Deferred tax liability		(4,616)
Total consideration	\$	<u>156,691</u>
Total consideration (net of cash acquired)	\$	<u><u>155,297</u></u>

The acquired technology, customer relationships, and trade name are being amortized on a straight-line basis over their assigned useful lives of six years, five years, and two years, respectively. The Company used the income approach to estimate the fair value of intangible assets acquired.

The results of operations of this acquisition are included in the accompanying consolidated statements of operations and comprehensive loss from the date of acquisition.

Virtual Observer

On April 1, 2020, the Company acquired all of the issued and outstanding shares of common stock of Virtual Observer, formerly Coordinated Systems, Inc., for cash consideration of approximately \$32.2 million, subject to adjustment, pursuant to a stock purchase agreement by and among the Company and Robert H. Hutcheon, David R. Brower and Daniel J. McGrail, dated January 15, 2020. This acquisition, which was accounted for as a business combination, is intended to expand the Company's portfolio to include a cloud-based WFO offering as a complement to its ongoing strategic partnerships with leading WFO providers.

The excess of the purchase price over identifiable intangible assets and net tangible assets in the amount of \$22.6 million was allocated to goodwill, which is not deductible for tax purposes. The fair values assigned to assets acquired and liabilities assumed are based on management's best estimates and assumptions as of the reporting date and are considered final. The following table presents the final allocation of the purchase price at the acquisition date

(in thousands):

Cash	\$	168
Tangible assets acquired		200
Acquired technology		12,200
Customer relationships		500
Trade name and trademarks		100
Goodwill		22,646
Total assets acquired		<u>35,814</u>
Deferred tax liability		(2,910)
Liabilities assumed		<u>(682)</u>
Total	\$	<u><u>32,222</u></u>

The acquired technology, customer relationships, and trade name and trademarks are being amortized on a straight-line basis over their estimated useful lives of five years, five years, and two years, respectively. The Company used the income approach to estimate the fair value of intangible assets acquired.

The results of operations of this acquisition are included in the accompanying consolidated statements of operations and comprehensive loss from the date of acquisition.

15. Selected Quarterly Financial Data (Unaudited)

Selected quarterly financial information for 2022 and 2021 is as follows:

	Quarter Ended							
	Dec. 31, 2022	Sept. 30, 2022	Jun. 30, 2022	Mar. 31, 2022	Dec. 31, 2021	Sept. 30, 2021	Jun. 30, 2021	Mar. 31, 2021
	(unaudited, in thousands, except per share data)							
Revenue	\$ 208,345	\$ 198,342	\$ 189,382	\$ 182,777	\$ 173,599	\$ 154,328	\$ 143,782	\$ 137,882
Cost of revenue ⁽¹⁾⁽²⁾	96,294	94,111	88,229	88,867	79,764	67,137	64,395	59,803
Gross profit	112,051	104,231	101,153	93,910	93,835	87,191	79,387	78,079
Operating expenses:								
Research and development ⁽¹⁾⁽²⁾	36,865	34,113	34,992	35,824	30,448	29,680	24,648	22,121
Sales and marketing ⁽¹⁾⁽²⁾	65,928	67,353	64,098	64,611	53,394	49,712	46,024	44,799
General and administrative ⁽¹⁾⁽²⁾	22,509	24,496	23,824	24,314	21,972	26,790	22,909	22,245
Total operating expenses	125,302	125,962	122,914	124,749	105,814	106,182	93,581	89,165
Loss from operations	(13,251)	(21,731)	(21,761)	(30,839)	(11,979)	(18,991)	(14,194)	(11,086)
Other (expense) income, net:								
Interest expense	(1,887)	(1,879)	(1,857)	(1,870)	(2,024)	(1,947)	(2,118)	(1,938)
Other (expense) and interest income	2,706	982	280	845	(43)	213	(353)	175
Total other (expense) income, net	819	(897)	(1,577)	(1,025)	(2,067)	(1,734)	(2,471)	(1,763)
Loss before income taxes	(12,432)	(22,628)	(23,338)	(31,864)	(14,046)	(20,725)	(16,665)	(12,849)
Provision for (benefit from) income taxes	1,221	579	332	2,256	(10,445)	(188)	(135)	(517)
Net loss	<u>\$ (13,653)</u>	<u>\$ (23,207)</u>	<u>\$ (23,670)</u>	<u>\$ (34,120)</u>	<u>\$ (3,601)</u>	<u>\$ (20,537)</u>	<u>\$ (16,530)</u>	<u>\$ (12,332)</u>
Net loss per share:								
Basic	<u>\$ (0.19)</u>	<u>\$ (0.33)</u>	<u>\$ (0.34)</u>	<u>\$ (0.49)</u>	<u>\$ (0.05)</u>	<u>\$ (0.30)</u>	<u>\$ (0.25)</u>	<u>\$ (0.18)</u>
Diluted	<u>\$ (0.19)</u>	<u>\$ (0.33)</u>	<u>\$ (0.34)</u>	<u>\$ (0.49)</u>	<u>\$ (0.05)</u>	<u>\$ (0.30)</u>	<u>\$ (0.25)</u>	<u>\$ (0.18)</u>
Shares used in computing net loss per share:								
Basic	<u>70,704</u>	<u>70,232</u>	<u>69,748</u>	<u>68,974</u>	<u>68,207</u>	<u>67,800</u>	<u>67,292</u>	<u>66,721</u>
Diluted	<u>70,704</u>	<u>70,232</u>	<u>69,748</u>	<u>68,974</u>	<u>68,207</u>	<u>67,800</u>	<u>67,292</u>	<u>66,721</u>

(1) Included stock-based compensation as follows:

	Quarter Ended							
	Dec. 31, 2022	Sept. 30, 2022	Jun. 30, 2022	Mar. 31, 2022	Dec. 31, 2021	Sept. 30, 2021	Jun. 30, 2021	Mar. 31, 2021
	(unaudited, in thousands)							
Cost of revenue	\$ 8,638	\$ 8,329	\$ 8,538	\$ 7,793	\$ 6,854	\$ 3,994	\$ 3,781	\$ 3,105
Research and development	11,799	10,603	11,818	10,145	9,163	9,101	6,152	4,763
Sales and marketing	15,152	15,761	14,963	13,424	11,987	8,304	8,208	6,771
General and administrative	8,235	9,810	9,467	8,032	7,597	5,996	6,760	6,269
Total stock-based compensation	<u>\$ 43,824</u>	<u>\$ 44,503</u>	<u>\$ 44,786</u>	<u>\$ 39,394</u>	<u>\$ 35,601</u>	<u>\$ 27,395</u>	<u>\$ 24,901</u>	<u>\$ 20,908</u>

(2) Included depreciation and amortization expenses as follows:

	Quarter Ended							
	Dec. 31, 2022	Sept. 30, 2022	Jun. 30, 2022	Mar. 31, 2022	Dec. 31, 2021	Sept. 30, 2021	Jun. 30, 2021	Mar. 31, 2021
	(unaudited, in thousands)							
Cost of revenue	\$ 8,803	\$ 8,904	\$ 8,747	\$ 8,500	\$ 8,301	\$ 7,658	\$ 7,825	\$ 7,087
Research and development	768	768	804	825	948	1,004	729	596
Sales and marketing	1	1	1	1	1	1	1	1
General and administrative	1,449	1,542	2,088	1,469	1,288	1,117	1,096	1,079
Total depreciation and amortization	<u>\$ 11,021</u>	<u>\$ 11,215</u>	<u>\$ 11,640</u>	<u>\$ 10,795</u>	<u>\$ 10,538</u>	<u>\$ 9,780</u>	<u>\$ 9,651</u>	<u>\$ 8,763</u>

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

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of December 31, 2022.

Based on management's evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2022, our disclosure controls and procedures were designed, 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 the SEC rules and forms, and that such information is accumulated and communicated to our management as appropriate to allow timely decisions regarding required disclosures.

In designing and evaluating our disclosure controls and procedures, management recognizes that any disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act). Our management conducted an assessment of the effectiveness of our internal control over financial reporting as of December 31, 2022 based on the criteria set forth in the 2013 Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the assessment, our management has concluded that our internal control over financial reporting was effective as of December 31, 2022 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

KPMG LLP, the independent registered public accounting firm that audited our financial statements included in this Annual Report on Form 10-K, has issued an attestation report on our internal control over financial reporting, which is included herein.

Changes in Internal Control over Financial Reporting

During the three months ended December 31, 2022, there was no change in our internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. Other Information

None.

ITEM 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

ITEM 10. Directors, Executive Officers and Corporate Governance

The information concerning our directors, compliance with Section 16(a) of the Exchange Act, our Audit Committee and any changes to the process by which stockholders may recommend nominees to the Board required by this Item are incorporated herein by reference to information contained in our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the SEC within 120 days of the year ended December 31, 2022, or the 2023 Proxy Statement, including “Proposal No 1. — Election of Directors,” “Corporate Governance” and “Section 16(a) Beneficial Ownership Reporting Compliance.”

The information concerning our executive officers required by this Item is incorporated herein by reference to information contained in the 2023 Proxy Statement including “Executive Officers.”

We have adopted a code of ethics and business conduct, or code of conduct, that applies to all employees, including our principal executive officer, our principal financial officer, our principal accounting officer, and all other executive officers. Our code of conduct is available on our website at <http://investors.five9.com/corporate-governance.cfm>. We plan to post on our website at the address described above any future amendments or waivers of our code of conduct.

ITEM 11. Executive Compensation

The information required by this Item is incorporated herein by reference to information contained in the 2023 Proxy Statement, including “Corporate Governance,” “Executive Compensation” and “Compensation of Directors.”

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

The information required by this Item is incorporated herein by reference to information contained in the 2023 Proxy Statement, including “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information.”

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

The information required by this Item is incorporated herein by reference to information contained in the 2023 Proxy Statement, including “Corporate Governance” and “Transactions With Related Persons.”

ITEM 14. Principal Accountant Fees and Services

The information required by this Item is incorporated herein by reference to information contained in the 2023 Proxy Statement, including “Proposal No. 4 — Ratification of Appointment of Independent Registered Public Accounting Firm.”

PART IV

ITEM 15. Exhibits, Financial Statement Schedules

(a) The following documents are filed as part of this Report:

1. Consolidated Financial Statements

The consolidated financial statements of Five9 and the report of independent registered public accounting firm thereon are set forth under Part II, Item 8 of this report.

Report of Independent Registered Public Accounting Firm	64
Consolidated Balance Sheets	67
Consolidated Statements of Operations and Comprehensive Loss	68
Consolidated Statements of Stockholders' Equity	69
Consolidated Statements of Cash Flows	71
Notes to Consolidated Financial Statements	73

2. Consolidated Financial Statement Schedules

The Financial Statement Schedules not listed have been omitted because the information required to be set forth herein is included in ITEM 8 — Financial Statements and Supplementary Data or they are not applicable or are not required.

3. Exhibits.

The following exhibits are filed with or incorporated by reference in this report. Where such filing is made by incorporation by reference to a previously filed registration statement or report, such registration statement or report is identified in parentheses.

Exhibit Index

Exhibit Number	Description
3.1◇	Amended and Restated Certificate of Incorporation of Five9, Inc. (filed as Exhibit 3.2 to the Company's Current Report on Form 8-K filed with the SEC on April 10, 2014 (File No. 001-36383) and incorporated by reference herein).
3.2◇	Amended and Restated Bylaws of Five9, Inc. (filed as Exhibit 3.1 to the Company's Current Report on Form 8-K filed with the SEC on August 3, 2020 (File No. 001-36383) and incorporated by reference herein).
4.1◇	Form of Common Stock Certificate (filed as Exhibit 4.1 to Amendment No.1 to the Company's Registration Statement on Form S-1 filed with the SEC on March 24, 2014 (File No. 333-194258) and incorporated by reference herein).
4.2◇	Indenture between the Registrant and U.S. Bank National Association, as trustee, dated May 8, 2018 (filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on May 8, 2018 (File No. 001-36383) and incorporated by reference herein).
4.3◇	Form of 0.125% Convertible Senior Notes due 2023 (filed as Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on May 8, 2018 (File No. 001-36383) and incorporated by reference herein).
4.4◇	Description of Registrant's Securities. (filed as Exhibit 4.4 to the Company's Annual Report on Form 10-K filed with the SEC on February 27, 2020 (File No. 001-36383) and incorporated by reference herein).
4.5◇	Indenture, dated as of May 27, 2020, between Five 9, Inc. and U.S. Bank National Association, as trustee (filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed with the SEC on May 28, 2020 (File No. 001-36383) and incorporated by reference herein).

Exhibit Index

Exhibit Number	Description
4.6◇	Form of 0.500% Convertible Senior Notes due 2025 (filed as Exhibit 4.2 to the Company's Current Report on Form 8-K filed with the SEC on May 28, 2020 (File No. 001-36383) and incorporated by reference herein).
10.1+◇	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers, as amended on July 31, 2015 (filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on August 5, 2015 (File No. 001-36383) and incorporated by reference herein).
10.2+◇	Confirmation Letter between the Registrant and Barry Zwarenstein (filed as Exhibit 10.3 to the Company's Registration Statement on Form S-1 filed with the SEC on March 3, 2014 (File No. 333-194258) and incorporated by reference herein).
10.3+◇	Offer Letter between the Registrant and Dan Burkland and amendment (filed as Exhibit 10.4 to the Company's Registration Statement on Form S-1 filed with the SEC on March 3, 2014 (File No. 333-194258) and incorporated by reference herein).
10.4+◇	Offer Letter between the Registrant and Scott Welch (filed as Exhibit 10.7 to the Company's Annual Report on Form 10-K filed with the SEC on March 10, 2015 (File No. 001-36383) and incorporated by reference herein).
10.5+◇	Offer Letter between the Registrant and Michael Burkland (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on October 11, 2022 (File No. 001-36383) and incorporated by reference herein).
10.6+◇	Five9, Inc. Amended and Restated 2004 Equity Incentive Plan (filed as Exhibit 10.8 to Amendment No.2 to the Company's Registration Statement on Form S-1 filed with the SEC on April 3, 2014 (File No. 333-194258) and incorporated by reference herein).
10.7+◇	Amendment to Five9, Inc. Amended and Restated 2004 Equity Incentive Plan, effective March 6, 2014 (filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed with the SEC on May 14, 2014 (File No. 001-36383) and incorporated by reference herein).
10.8+◇	Five9, Inc. 2014 Equity Incentive Plan and related form agreements (filed as Exhibit 10.9 to Amendment No.1 to the Company's Registration Statement on Form S-1 filed with the SEC on March 24, 2014 (File No. 333-194258) and incorporated by reference herein).
10.9+◇	Inference Technologies Group Inc. 2018 Equity Incentive Plan (filed as Exhibit 4.3 to the Company's Form S-8 filed with the SEC on November 19, 2020 (File No. 333-250197) and incorporated by reference herein).
10.10+◇	Five9, Inc. 2014 Employee Stock Purchase Plan (filed as Exhibit 10.10 to Amendment No.1 to the Company's Registration Statement on Form S-1 filed with the SEC on March 24, 2014 (File No. 333-194258) and incorporated by reference herein).
10.11+◇	Five9, Inc. 2019 Key Employee Severance Benefit Plan (filed as Exhibit 10.1 to the Company's Current Report Form 8-K filed with the SEC on April 9, 2019 (File No. 001-36383) and incorporated by reference herein).
10.12+◇	Five9 Inc. Executive Incentive Compensation Plan (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on February 18, 2021 (File No. 001-36383) and incorporated by reference herein).
10.13+	Five9 Inc. Non-Employee Director Compensation Policy
10.14◇	Form of Capped Call Confirmation (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 8, 2018 (File No. 001-36383) and incorporated by reference herein).
10.15◇	Form of Capped Call Confirmation (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on May 28, 2020 (File No. 001-36383) and incorporated by reference herein).
10.16◇	Bishop Ranch Building Lease, dated July 29, 2020, between the Registrant and 2600 CR, LLC (filed as Exhibit 10.1 to the Company's Current Report on Form 8-K filed with the SEC on August 3, 2020 (File No. 001-36383) and incorporated by reference herein).
10.17+◇	Five9 Inc. Performance-Based Restricted Stock Unit Grant Notice and Award Agreement - 2014 Equity Incentive Plan (filed as Exhibit 10.19 to the Company's Annual Report on Form 10-K filed with the SEC on February 28, 2022 (File No. 001-36383) and incorporated by reference herein).

Exhibit Index

Exhibit Number	Description
10.18+◇	Form of Five9 Inc. Restricted Stock Unit Grant Notice and Award Agreement - 2014 Equity Incentive Plan (filed as Exhibit 10.20 to the Company's Annual Report on Form 10-K filed with the SEC on February 28, 2022 (File No. 001-36383) and incorporated by reference herein).
10.19+◇	Form of Five9 Inc. Stock Option Grant Notice and Award Agreement - 2014 Equity Incentive Plan (filed as Exhibit 10.21 to the Company's Annual Report on Form 10-K filed with the SEC on February 28, 2022 (File No. 001-36383) and incorporated by reference herein).
10.20+◇	Five9, Inc. Form of Performance-Based Restricted Stock Unit Grant Notice and Award Agreement (Revenue Goals) - 2014 Equity Incentive Plan (filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed with the SEC on July 28, 2022 (File No. 001-36383) and incorporated by reference herein).
10.21+	Five9, Inc. Performance-Based Restricted Stock Unit Grant Notice and Award Agreement for 2023-2025 Performance Period - 2014 Equity Incentive Plan
21.1	Subsidiaries of the Company.
23.1	Consent of KPMG LLP, independent registered public accounting firm.
24.1	Power of Attorney (included on signature page to this Annual Report on Form 10-K).
31.1	Certification of Chief Executive Officer of Five9, Inc. Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer of Five9, Inc. Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1†	Certification of Chief Executive Officer and Chief Financial Officer of Five9, Inc. Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Schema Linkbase Document
101.CAL	XBRL Taxonomy Calculation Linkbase Document
101.DEF	XBRL Taxonomy Definition Linkbase Document
101.LAB	XBRL Taxonomy Labels Linkbase Document
101.PRE	XBRL Taxonomy Presentation Linkbase Document
104	Cover Page Interactive Data File. Formatted as inline XBRL and contained in Exhibit 101.

◇ Previously filed.

+ Indicates management contract or compensatory plan.

† The certifications attached as Exhibit 32.1 that accompany this Annual Report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Five9, 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, irrespective of any general incorporation language contained in such filing.

ITEM 16. Form 10-K Summary

None.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Michael Burkland</u> Michael Burkland	Chief Executive Officer, Director (Principal Executive Officer)	February 24, 2023
<u>/s/ Barry Zwarenstein</u> Barry Zwarenstein	Chief Financial Officer (Principal Financial Officer)	February 24, 2023
<u>/s/ Leena Mansharamani</u> Leena Mansharamani	Chief Accounting Officer (Principal Accounting Officer)	February 24, 2023
<u>/s/ Jack Acosta</u> Jack Acosta	Director	February 24, 2023
<u>/s/ Kimberly Alexy</u> Kimberly Alexy	Director	February 24, 2023
<u>/s/ Susan Barsamian</u> Susan Barsamian	Director	February 24, 2023
<u>/s/ Michael Burdick</u> Michael Burdick	Director	February 24, 2023
<u>/s/ David DeWalt</u> David DeWalt	Director	February 24, 2023
<u>/s/ Julie Iskow</u> Julie Iskow	Director	February 24, 2023
<u>/s/ David Welsh</u> David Welsh	Director; Lead Independent Director	February 24, 2023
<u>/s/ Robert Zollars</u> Robert Zollars	Director	February 24, 2023

