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DELTA REPORT

10-K

TWLO - TWILIO INC

10-K - DECEMBER 31, 2023 COMPARED TO 10-K - DECEMBER 31, 2022

The following comparison report has been automatically generated

TOTAL DELTAS	3653
CHANGES	356
DELETIONS	1576
ADDITIONS	1721

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

FORM 10-K


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

For the fiscal year ended **December 31, 2022** **December 31, 2023**

☐ 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: 001-37806

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TWILIO INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

26-2574840

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

**101 Spear Street, Fifth Floor
San Francisco, California 94105**

(Address of principal executive offices) (Zip Code)

(415) 390-2337

(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Class A Common Stock, par value \$0.001 per share	TWLO	New York Stock Exchange

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		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). o

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 stock held by non-affiliates as of **June 30, 2022** **June 30, 2023** (the last business day of the registrant's most recently completed second quarter) was **\$13.1 billion** **\$11.1 billion** based upon **\$83.81** **\$63.62** per share, the closing price of the registrant's Class A common stock on that date on the New York Stock Exchange. Determination of stock ownership by non-affiliates was made solely for the purpose of responding to this requirement and the registrant is not bound by this determination for any other purpose.

On **February 17, 2023** **February 20, 2024**, **177,657,156** **182,060,920** shares of the registrant's Class A common stock and **9,617,606** **0** shares of registrant's Class B common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the **2023** **2024** Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K to the extent stated herein. Such Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended **December 31, 2022** **December 31, 2023**.

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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, as amended (the "Securities Act"), and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events or our future financial or operating performance. In some cases, you can identify forward-looking statements because they contain words such as "may," "can," "will," "would," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "forecasts," "potential," or "continue" or the negative of these words or other similar terms or expressions that concern our expectations, strategy, plans or intentions. Forward-looking statements contained in this Annual Report on Form 10-K include, but are not limited to, statements about:

- the impact of macroeconomic uncertainties and significant market volatility in the global economy on our customers, partners, employees and business;
- our future financial performance, including expectations regarding our revenue, cost of revenue, gross profit, gross margin and operating expenses, our ability to generate positive cash flow and ability to achieve and sustain profitability on GAAP and non-GAAP bases, the factors affecting our results of operations, and the assumptions underlying such expectations;
- the benefits and efficiencies we expect to derive from recent workforce reductions and other cost-saving initiatives, including reducing our global office footprint; footprint and stock-based compensation expense;
- our anticipated strategies and business plans, unit reorganization, including the its expected costs and benefits, of related accounting determinations and the shift in our business unit reorganization segment reporting structure, and changes to our leadership structure;
- the impact on our business, corporate culture, and employees as a result of our recent leadership transition;
- our expectations regarding our Segment (formerly known as Data & Applications Applications) business, including new product releases, increased investment and go-to-market focus to capture market share, and increase increased revenue growth;
- our expectations regarding our Communications business, including anticipated cash flows efficiencies and strategy for streamlining the customer experience, including increased focus on self-serve self-service capabilities;
- our ability to retain and increase revenue from existing customers and attract new customers, including enterprises and international organizations;
- our ability to maintain reliable service levels for our customers;
- our anticipated investments in sales and marketing, research and development and additional systems and processes to support our growth;
- the anticipated results of our foreign currency hedging activities;
- our ability to compete effectively in an intensely competitive market, including our ability to set optimal prices for our products and adapt and respond effectively to rising costs, rapidly changing technology and evolving customer needs, requirements, and preferences;
- potential harm caused by compromises in security, data and infrastructure, including cybersecurity protections;
- our ability to comply with modified or new industry standards, laws and regulations applying to our business;
- our ability to make progress on our environmental, social and governance ("ESG") programs, goals and commitments;
- our ability to manage changes in network service provider fees that we pay in connection with the delivery of communications on our platform;

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- investments and costs required to prevent, detect and remediate potential cybersecurity threats, incidents and breaches of ours or our customers' systems or information;
 - our ability to optimize our network service provider coverage and connectivity;
 - our ability to work closely with email inbox service providers to maintain deliverability rates;

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- the impact and expected results from changes in our relationships with our larger customers;
- our ability to form and expand partnerships with technology partners and consulting partners;
- anticipated technology trends, such as the use of and demand for cloud communications and customer engagement tools;
- our ability to leverage artificial intelligence ("AI") and machine learning ("ML") and develop and deliver products that incorporate AI and ML;
- our ability to successfully enter into new markets and manage our international expansion;
- the sufficiency of our cash and cash equivalents to meet our liquidity needs;
- our expectations regarding our share repurchase program;
- our ability to maintain, protect and enhance our intellectual property;
- our ability to successfully defend litigation brought against us;
- our ability to service the interest on our 3.625% senior notes due 2029 ("2029 Notes") and on our 3.875% notes due 2031 ("2031 Notes," and together with the 2029 Notes, the "Notes"), and repay such Notes;
- our customers' and other platform users' violation of our policies or other misuse of our platform; and
- our ability to successfully integrate acquired businesses and realize the benefits of our past or future strategic acquisitions, divestitures or investments.

We caution you that the foregoing list may not contain all of the forward-looking statements made in this Annual Report on Form 10-K.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Annual Report on Form 10-K primarily on our current expectations and projections about future events and trends that we believe may affect our business, results of operations and financial condition. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors described below in Part II, Item 1A, "Risk Factors," and elsewhere in this Annual Report on Form 10-K. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Annual Report on Form 10-K. We cannot assure you that the results, events and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events or circumstances could differ materially from those described in the forward-looking statements.

The forward-looking statements made in this Annual Report on Form 10-K relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Annual Report on Form 10-K to reflect events or circumstances after the date of this Annual Report on Form 10-K or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

PART I

Item 1. Business

Overview

We enable businesses of all sizes and across numerous industries to revolutionize how they engage with their customers, customers by delivering seamless, trusted and personalized customer experiences at scale. Our leading customer engagement platform comprises communications application programming interfaces ("CEP" APIs) comprises a suite that enable developers to embed numerous forms of messaging, voice, and email interactions into their customer-facing applications, as well as software products that target specific engagement needs, including our customer data platform, digital engagement centers, marketing campaigns and advanced account security solutions. This combination of flexible APIs and software solutions helps businesses of all sizes and communications solutions that allow businesses across numerous industries to deliver seamless, trusted and engaging customer experiences at scale. The value proposition of our offerings has become stronger and our products have become more strategic to our customers as more benefit from smarter and more businesses have prioritized building stronger, more personalized and more differentiated customer streamlined engagement experiences through digital channels.

Our CEP empowers businesses to create the tailored solutions needed to engage their customers at every step of the customer journey, through real-time, relevant, personalized communications over the customers' preferred communication channels. With our platform, businesses can personalize every transaction with real-time data, build lasting loyalty, cut including reduced customer acquisition costs, lasting loyalty and increase increased customer lifetime value. Our customized software products are designed to address specific use cases, including our customer data platform, virtual contact centers, personalized yet scalable marketing campaigns and advanced account security systems. Our leading communications solutions, including our Application Programming Interfaces ("APIs"), are highly customizable and enable developers to embed numerous forms of

voice, messaging, and email interactions into their customer-facing applications. Our platform is designed to support all of the most important ways people communicate through technology and our global infrastructure is capable of supporting virtually any business at scale.

As indicated above, we have seen escalating enthusiasm for our offerings as businesses have increasingly prioritized delivering, and their customers have increasingly come to expect, personalized experiences through digital communication channels. Such experiences require businesses to understand their customers on a deep level, with a comprehensive view of their customers across multiple digital touchpoints, that reveals what their needs are and which communications methods they prefer. Our platform, which uniquely combines our highly customizable communications APIs with leading customer data management capabilities, allows businesses to do exactly that, breaking break down data silos and building build a comprehensive single source for their customer data that is organized into unique profiles and that are easily accessible by all their business teams. Empowered with this information and the insights it enables, businesses using our platform can provide robust, personalized and effective communications to their customers at every stage of their customer relationships. The value proposition of our offerings has become stronger and our products have become more strategic to our customers as more and more businesses have prioritized building more personalized and more differentiated customer engagement experiences through digital channels.

In February 2023, we began operating our business in two business units: Twilio Communications ("Communications") and Twilio Data & Applications ("Data & Applications"), which has since been renamed Twilio Segment. Our Communications business consists of a variety of APIs and software solutions to optimize communications between our customers and their end users. Our key Communications offerings include Messaging, Voice, Email, Flex, Marketing Campaigns, and User Identity and Authentication. Our Segment business consists of software products that enable businesses to leverage their first-party data to create unique customer profiles and achieve more effective customer engagement. Our key Segment offerings are Segment and Engage. Together, our Communications and Segment products power our customer engagement platform. We believe that our two business units are complementary and address adjacent needs and related problems for our customers. Our goal is to create a flywheel for effective customer engagement by combining Segment's user profiles with our rich Communications data to drive more personalized and intelligent customer interactions. We believe that our business unit structure enables each business unit to execute toward its respective goals with appropriate focus and independence, best positioning us to achieve our long-term plan of creating the leading customer engagement platform.

In 2023, we revealed CustomerAI, which refers to generative and predictive artificial intelligence ("AI") and machine learning ("ML") capabilities and initiatives that we believe have the potential to increase the power and reach of our platform, make every interaction more personalized and intelligent, and accelerate our data and communications flywheel described above, benefiting both our Communications and Segment products.

We have experienced substantial growth in our business since inception, and as of December 31, 2022 December 31, 2023, we had over 290,000 305,000 Active Customer Accounts that represent representing organizations big from small and small, old and young, medium-sized business to large enterprises across nearly every industry. a broad range of industries. Our growth to this scale has predominantly been organic as a result of our new customer acquisition, as well as customers increasing their usage of our products, extending their usage of our products to new applications, or adopting new products that we offer. We have also fueled our growth through successful strategic acquisitions and integrations of businesses that complemented our pre-existing products and allowed us to expand our platform and to add new customer accounts. Acquisitions of note have included Segment, the leading customer data platform we acquired in 2020, and Zipwhip, the leading toll-free messaging provider we acquired in 2021.

As we announced on February 13, 2023, moving forward we will operate as two separate business units: Twilio Communications and Twilio Data & Applications (previously referred to as Software). We believe that this strategic realignment will enable us to better execute on the key priorities for each side of our business—driving efficiencies for Twilio Communications and accelerating growth for Twilio Data & Applications—while accounting for each business unit's unique economic, customer and product needs. These two business units can execute toward their respective financial goals with more focus and independence—but they are also highly complementary. Our Data & Applications business benefits from our underlying communications platform and our substantial active customer base. Our success in Data & Applications also drives more intelligence for our Communications products. Together, they address adjacent buyers and related problems that our customers have. With this strategic realignment, we believe we are well-positioned to achieve our long-term plan of creating the market-leading customer engagement platform.

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Our Platform

We aim to deliver the leading customer engagement platform that intelligently orchestrates customer engagement across the entire customer life cycle. Our platform provides developers tools to build, scale, and deploy real-time communications within software applications, while simultaneously offering technology that allows businesses to harness the power of first-party data to improve the experience of their customers. The data that our platform collects can inform every interaction interactions across the customer journey to achieve more personalized, timely and impactful engagement. This in turn empowers businesses to build productive one-to-one relationships, at scale, through both easy-to-use APIs and extensible software products like Twilio Flex and Twilio Engage. The central pillars of our customer engagement platform, consistent with the new business unit structure referenced above, are described below.

Communications

Our Communications solutions consist of highly customizable APIs and products that can be used individually or in combination to build rich contextual communications within applications. We offer easy-to-use flexible building blocks for developers to build omnichannel engagements with customers worldwide. We also provide advanced compliance management to support success within a changing ecosystem of regulations. Our Communications solutions include Programmable Messaging, Programmable Voice, Email, Account Security and more. The majority of our communications products are offered on a usage basis. Email is offered on a subscription basis.

Our platform is connected to our "Super Network" ("Super Network"), a software layer that enables our customers' applications to communicate with devices globally. The Super Network interconnects communications networks and inbox services providers around the world and continually analyzes data to optimize the quality and cost of communications that flow through our platform. The Super Network also contains a set of APIs that gives our customers access to additional foundational components offered through our platform, such as phone numbers and session initiation protocol ("SIP") trunking.

Core We generate revenue from our platform through a combination of usage-based and subscription-based fees, which varies by product as indicated below and described in further detail in Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Communications

Our Communications solutions consist of highly customizable APIs and products that can be used individually or in combination to build rich contextual communications within applications, allowing developers to build omnichannel engagements with customers worldwide. Communications also includes our omnichannel digital engagement center, as well as solutions for user identity and authentication and advanced compliance management to support success within a changing ecosystem of regulations. In the fourth quarter of 2023, we moved Flex and Marketing Campaigns from our Data & Applications (since renamed Segment) business unit to our Communications business unit.

The core offerings of our Communications business include:

- **Programmable Messaging.** Twilio Programmable Messaging ("Messaging") is an API to send and receive SMS, MMS, Toll-Free SMS, High-Throughput Toll-Free SMS and over-the-top ("OTT") (e.g., WhatsApp and Facebook Messenger) messages globally, globally over a variety of sender types. It uses intelligent sending features to ensure messages reliably reach end users wherever they are. Our customers use this API to address numerous use cases, including account notifications, marketing, account security, mass alerts and order confirmations, as well as two-way multi-party and conversational use cases, such as conversational marketing, sales support and customer care. Revenue generated from Messaging is primarily recognized on a usage basis.
- **Programmable Voice.** Twilio Programmable Voice ("Voice") is an API that allows developers to build solutions to make, manage and receive phone calls globally through a browser, an app, a application, phone or anywhere else one can take a call, other methods. Our voice software, which works over both the traditional public switched telephone network ("PSTN") and over Internet Protocol ("VoIP"), allows developers to incorporate advanced voice functionality such as text-to-speech, global conferencing, emergency calling, call recording, media streams and others, as well as address use cases such as contact centers, interactive voice response systems, call tracking, analytics solutions and anonymized communications. Revenue generated from Voice is primarily recognized on a usage basis.
- **Email.** Twilio SendGrid Email ("Email") is an API ("Email API") that solves email delivery challenges at scale, enabling customers to build customized solutions and provides helpful shortcuts to streamline integration and optimize for inbox placement. The Our Email API allows businesses to integrate with multiple leading development frameworks and client libraries in multiple languages as well as customize various links and domains. It also provides sender authentication, security, mobile support and many other tools. Businesses use our email products for both marketing messages and transactional emails, including shipping notifications, friend requests, password resets and sign-up confirmations. Revenue generated from Email is primarily recognized on a subscription basis.

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- **Marketing Campaigns.** Marketing Campaigns is built on top of our Email infrastructure to help digital marketers build and send email campaigns at scale. With drag and drop editing, approachable automation and powerful contacts management, Marketing Campaigns helps marketers to attract and retain customers more efficiently. Marketing Campaigns includes email design and templates, list management, dynamic content and email testing. Revenue generated from Marketing Campaigns is primarily recognized on a subscription basis.
- **Flex.** Twilio Flex ("Flex") is a digital engagement center for the entire customer journey—a sales tool for pre-purchase conversations, a cloud-based contact center, and an in-app digital concierge. Flex is built for the new world of tailored customer experiences and omnichannel communications, allowing companies to deploy a broad array of personalized, data-driven customer engagement channels while providing the tools to easily create, change or extend any part of their custom solutions. With Flex, businesses can rapidly deploy a tailored cloud-based engagement center that addresses their specific needs. Revenue generated from Flex is primarily recognized on a subscription basis.
- **User Identity and Authentication.** Our User Identity and Authentication (formerly Account Security. Online fraud has evolved into a major concern that requires today's businesses to have Security) solutions include advanced solutions for registering, onboarding and recognizing customers. Twilio Verify ("Verify") is a managed solution that for multi-channel user verification, which effectively adds security at the point of new user activation and onwards, providing a seamless, consistent and secure login experience. Using our two-factor authentication APIs, developers businesses can add an extra layer of security to their applications with second-factor passwords sent to users via SMS, voice, email or push notifications. Revenue generated from User Identity and Authentication is primarily recognized on a usage basis.

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Data & Applications Segment

We believe that a personalized, positive customer experience is the best path to a key driver of effective customer engagement and long-term customer loyalty. Our Data & Applications Segment solutions enable businesses to create highly personalized experiences and campaigns across multiple channels using first-party, real-time customer data. They also allow businesses to break down data silos across their organizations and to leverage a single unified source of customer data for their various business teams.

Our Data & Applications products are primarily offered on a subscription basis. Our Communications products that are embedded into our Data & Applications products are charged separately on a usage basis.

Core The core offerings of our Data & Applications Segment business include:

- **Twilio Segment.** Twilio Segment is a leading customer data platform ("CDP") that provides businesses with the tools to harness the power of first-party data by unifying real-time information collected throughout each customer's journey into a unique profile. Twilio Segment collects, contextualizes and unlocks the potential of first-party, real-time data across the customer engagement stack by:
 - collecting user data from customers' interactions with websites, mobile apps, digital ads, and more;
 - combining data from these different sources and systems to form a complete picture of each customer;
 - creating from this a customer profile that can be accessed by every business team within the organization; and
 - integrating customer data into subsequent interactions to drive personalization across channels.

In addition to creating unified profiles that drive personalized customer interactions, Twilio Segment includes privacy and security features that help businesses comply with privacy laws, including the General Data Protection Regulation ("GDPR") and the California Consumer Privacy Act of 2018 ("CCPA"). Revenue generated from Segment is primarily recognized on a subscription basis.

- **Twilio Engage.** Twilio Engage ("Engage") is an automation platform for the delivery of omnichannel campaigns, which builds upon the unified profiles of Twilio our Segment platform to enable marketers to create personalized campaigns and to manage, measure and scale them through a single platform. Such campaigns can include personalized messages delivered via native SMS, email, and/or custom channels. Through Twilio Engage, businesses can deepen their customer relationships and convert what might otherwise have been isolated interactions into continuous, long-term relationships. Revenue generated from Engage is primarily recognized on a subscription basis. Our Communications products that are embedded into Engage are charged separately on a usage basis and such fees are recognized as Communications revenue.

• **Twilio Flex.** Twilio Flex is a programmable virtual contact center built for the new world of tailored customer experiences and omnichannel communications. Twilio Flex is a fully programmable contact center platform that allows companies to deploy a broad array of customer engagement channels while providing the tools to easily create, change or extend any part of their custom solutions. With Twilio Flex, businesses can rapidly deploy tailored cloud contact centers to create an exact omnichannel contact center experience that addresses their specific business needs.

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- **Marketing Campaigns.** Marketing Campaigns is built on top of our proven email infrastructure to help digital marketers build and send email campaigns at scale, faster than ever. With drag and drop editing, approachable automation and powerful contacts management, Marketing Campaigns help marketers attract and retain customers more efficiently.

Our Strategy Marketing Campaigns include email design and templates, list management, dynamic content and email testing.

We are a leader in Our goal is to deliver the leading customer engagement platform category. Retaining this position will require both continued innovation and discipline with respect to prioritization and focus. platform. We are concentrating our investments in on the highest-impact product areas for our future, and we intend to pursue the following strategies:

- **Accelerate Growth of Optimizing and Growing Communications.** In our Data & Applications Business. We Communications solutions, we are focusing on speeding up technological development improving profitability and aggressively growing our market share for Twilio Segment and Twilio Engage by increasing the number of source channels and destinations share. To achieve this, we integrate with and by growing the number of new customers that can build their own solutions using are focused on bolstering our Data & Applications products. We also continue to invest in the success path of Twilio Flex as a foundational application connecting communications and customer data.

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- **Continue Driving Simplification and Efficiencies in independent software vendor ("ISV") relationships, improving our self-service capabilities, cross-selling our Communications Business.** We are investing strategically into products, driving product innovation and expanding internationally, while further optimizing our core Communications solutions to improve profitability and maintain our market leadership position. To drive efficiencies and reduce costs, we are adding additional self-service capabilities, emphasizing product-led growth and focusing on business through simplification of business processes and modernization of our infrastructure.
- **Winning in Customer Data with Segment.** To support growing our market share, we are focused on Segment's interoperability across the data ecosystem. We believe that driving efficiencies and improving profitability in our Communications business and establishing it as our major profit engine will allow us to also continue to invest in accelerating predictive and generative AI to help customers increase the growth value and impact of Segment in customer engagement. In addition, we are conducting an operational review of our Data & Applications Segment business capture market share and increase expected to be completed in March 2024, which will inform our gross margins. strategy with respect to Segment going forward.
- **Driving Operating Leverage Across the our Business.** We are implementing several organizational initiatives targeted at improving efficiencies of our processes, enhancing our fiscal discipline on all levels, optimizing utilization of our distributed workforce, driving agile decision making decision-making frameworks and more. We

expect that these initiatives will result in operating cost reductions and increase effectiveness and efficiency within our organization.

- **Leveraging AI.** We are continuing to invest in AI and ultimately ML capabilities, including both our CustomerAI capabilities and also internal applications of AI and ML to automate processes and help our business run more efficiently. We believe AI and ML have the potential to increase the power and reach of our platform, make every interaction more personalized and intelligent, and accelerate our path to driving meaningful value for data and communications flywheel, benefiting both our stockholders. Communications and Segment products.

From time to time, we evaluate opportunities to acquire or invest in adjacent technologies to complement our organic investments and to improve our products, our services and our customers' experiences. We expect to continue to selectively explore these types of strategic levers as opportunities arise. **Competition**

Competition

The markets for customer engagement platforms our products are rapidly evolving and are increasingly competitive. We believe in our Communications business, our competitors are primarily (i) communications platform-as-a-service ("CPaaS") companies that offer communications products and applications, (ii) other software companies that compete with portions of our communications product line, and (iii) regional network service providers that offer limited developer functionality on top of their own physical infrastructure. In our Segment business, our competitors are primarily (i) software-as-a-service ("SaaS") companies and marketing cloud platform vendors that offer bundled applications and platforms, (ii) customer relationship management ("CRM") and customer experience vendors and (iii) standalone customer data platform vendors.

The principal competitive factors in our market are these markets include completeness of offering, credibility with customers, global reach, ease of integration and programmability, product features, platform scalability, reliability, deliverability, security and performance, brand awareness and reputation, the strength of sales and marketing efforts, customer support, and the cost of deploying and using our products.

We believe that we compete favorably on the basis of the factors listed above and that none of our competitors currently compete directly with us across all of our product offerings.

In our Communications business, our competitors are primarily (i) regional network service providers that offer limited developer functionality on top of their own physical infrastructure, (ii) communications platform-as-a-service ("CPaaS") companies that offer communications products and applications, and (iii) other software companies that compete with portions of our communications product line. In our Data & Applications business our competitors are primarily (i) legacy on-premises vendors, (ii) software-as-a-service ("SaaS") companies and marketing cloud platform vendors that offer bundled applications and platforms, and (iii) CRM and customer experience vendors.

With the introduction of new products and services and new market entrants, we expect competition to intensify in the future. Moreover, as we expand the scope of our platform, we may face additional competition.

Research and Development

Our research and development efforts are focused on building a trusted, comprehensive customer engagement platform while enhancing our existing products and developing new products and features.

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Our research and development organization is predominantly built around small development teams. Our small development teams foster greater agility, which enables us to develop new, innovative products and make rapid changes to our infrastructure that increase resiliency and operational efficiency. Our development teams designed and built much of our customer engagement platform, our core platforms stack, as well as our Super Network. These teams continue to focus on the highest impact product areas for our future, which includes focusing on continued innovation in the face of rapid technological change and changing industry practices. We are continuing to invest in AI and ML capabilities, which we believe have the potential to enhance both our Communications and Segment offerings, as well as to automate processes and help our business run more efficiently.

As of December 31, 2022 December 31, 2023, we had 3,590 2,563 employees in our research and development organization.

Sales and Marketing

Our sales and marketing teams are focused on executing on our top priorities work closely together to accelerate growth drive awareness and adoption of our Data & Applications business by accelerating customer acquisitions; platform. We leverage our brand, developer network and maintain profitability conferences, such as SIGNAL, to expand our developer and market leadership position of our Communications business by cross-selling communications and other products for account expansion. Our self-service sales organization includes motions. We further complement this with sales development, inside sales, field sales, specialty marketing, and sales and solutions engineering to support enterprise, ISV, partner, and mid-market sales engineering personnel.

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motions.

Our Data & Applications go-to-market model for our Communications business has three pillars: self-service developers, ISV partners, and enterprise customers. Developers are able to access our easy-to-configure APIs, extensive self-service documentation and customer support team, to embed our communications products into their applications during an initial free trial period. Customers can then provide their credit card information to make an upfront prepayment that is drawn down as they use our products. ISVs leverage our Communications APIs to build software and services that they can resell to customers across a strategic varying number of use cases and verticals. Enterprise customers have access to our solutions team to support their businesses across their customer journey.

Our go-to-market model for our Segment business requires a consultative solution-oriented sales model that emphasizes value-based discovery, technical proof of concept, and deep customer relationship building. We are deliberate in developing these skills and customer relationships leveraging the trust and reputation we have built while solving new and broader problems for our customers. Our Data & Applications products are primarily offered on a subscription basis. Our Communications products that are integrated into our Data & Applications products are charged on a usage basis.

We are shifting our Communications sales model from one that is reliant on field sales to one that leverages digital inside sales, self-service organization targets technical, marketing and product-led growth. We believe that this will significantly improve the profitability of our Communications business, contributing to materially improved operating margins, and enabling us to reinvest in the growth of our high margin Data & Applications business.

The majority of our Communications products are offered on a usage basis. We offer an initial free trial period to developers to test their applications that they built with our products. After the initial trial period, developers provide their credit card information and only pay for the actual usage of our products, for the majority of our communications products. Our self-serve pricing matrix is publicly available and it allows for customers to receive tiered discounts as their usage of our products increases. As customers' use of our products grows, some enter into negotiated contracts with terms that dictate pricing and typically include some level of minimum revenue commitments. Historically, we have acquired the substantial majority of our communications customers through this self-service model. As customers expand their usage of our platform, we expand our relationships with them to include business leaders within their organizations. We supplement our self-service model with account executives who are seeking to leverage software to drive superior customer engagement and customer success managers competitive differentiation.

Additionally, when such engagement is needed to provide value to our self-serving customers. Our Email solution is offered on a subscription basis.

When potential customers do not have the available developer resources to build their own applications, we refer them to either our technology partners who embed our products in the solutions that they sell to other businesses (such as contact centers and marketing automation), our professional services team or outside consulting partners who provide consulting and development services for organizations that have limited software development resources or expertise to build our platform into their software applications on our platform, or technology stacks.

As of December 31, 2022 December 31, 2023, we had 3,605 2,631 employees in our sales and marketing organization.

Customer Support

To make it easy to learn how to use our products, we provide all of our users with comprehensive documentation, how-to guides and tutorials. We supplement and enhance these tools with the participation of our engaged developer customer community. In addition, we provide support options to address the individualized needs of our customers. All of our customers get free support and system status notifications. Our customers can also engage with the broader Twilio community to resolve issues.

We For our Communications products, we generally offer three paid tiers of support with increasing levels of availability and guaranteed response times. Our highest tier plan, intended for our largest customers, includes a dedicated designated support engineer, duty manager coverage and quarterly status reviews. Similarly, our subscription products generally feature a base level of customer support plus premium, paid support options. Our support model is global, with 24x7 coverage and support offices located throughout the world, with our larger offices located in the United States, Ireland, Colombia, India, and Singapore. available 24x7. We currently derive an insignificant amount of revenue from fees for customer support.

We also offer professional services which provide in-depth, hands-on, fee-based packages of advisory, software architecture, integration and coding services to existing and prospective customers and partners to optimize their use of the Twilio platform. For our Data & Applications products, Flex and Segment, offerings include services for implementing contact digital engagement center solutions and customer data platform design. For our other Communications products, offerings include email implementation and deliverability, and configuration and integration of our communications channels.

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Intellectual Property

We rely on a combination of patent, copyright, trademark, trade secret and other intellectual property laws in the United States and other jurisdictions, as well as license agreements, other contractual protections, and internal processes, procedures, and controls, to protect, establish, maintain, and enforce our intellectual property and other proprietary rights technology. We also rely on a number of registered trademarks, applications for trademarks and common law protections afforded to certain unregistered trademarks to protect our brand.

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As of December 31, 2022 December 31, 2023, in the United States, we had 232 have been issued 274 patents, which expire between 2029 and 2041, 2042. As of that such date, we also had 36 issued patents in foreign jurisdictions, all of which are related to our U.S. patents and patent applications. We have also filed various applications in the United States and internationally to establish and protect our rights to for protection of certain aspects of our intellectual property portfolio, in the United States and internationally. In addition, as of December 31, 2022 December 31, 2023, we had 58 55 registered trademarks in the United States and 512 540 registered trademarks in foreign jurisdictions.

We currently, and will continue to, seek to protect our intellectual property and other proprietary rights by, among other things, implementing, maintaining, and enforcing a policy that requires our employees, independent contractors and certain suppliers involved in developing intellectual property for us or on our behalf to enter into agreements acknowledging that all work product or other forms of intellectual property generated, created, reduced to practice, conceived, or otherwise developed by them on our behalf are owned by us such that we can use the intellectual property they develop for our business purposes.

Regulatory

We are subject to a number of U.S. federal, U.S. state and foreign laws and regulations that involve matters central to our business. These laws and regulations may involve privacy, data protection, data security, intellectual property, competition, telecommunications, broadband, VoIP, consumer protection, export controls, economic sanctions, anti-bribery, anti-corruption, anti-money laundering, taxation, and controls, or other subjects. Many of the laws and regulations to which we are subject are still evolving and being tested we expect to become subject to additional laws and regulations in courts, and some could be interpreted in ways that could harm our business. In addition, the future. The application and interpretation of these laws and regulations often are uncertain, particularly in the new and rapidly evolving industry in which we operate. Because federal, state

Compliance with current and foreign future laws and regulations, have continued to develop and evolve rapidly, it is possible that we, our products or our platform may not be, or may not have been, compliant with each such applicable law or regulation.

For example, the General Data Protection Regulation ("GDPR"), the United Kingdom's GDPR ("UK GDPR"), and the Swiss Federal Act on Data Protection impose strict requirements for processing the personal information of individuals protected by the legislation, whether their data is processed within or outside the European Economic Area ("EEA"), the United Kingdom ("UK"), and Switzerland, respectively. For example, the GDPR imposes significant requirements regarding the processing of individuals' personal information, including in relation to transparency, lawfulness of processing, individuals' privacy rights, compliant contracting, data minimization, data breach notification, data re-usage, data retention, security of processing and international data transfers. Noncompliance with the GDPR and UK GDPR can result in, for example, bans on data processing or data transfers, orders to delete data, and fines of up to the greater of 20 million euros (£17.5 million for the UK GDPR) or 4% of annual global revenue. Further, individuals may initiate compensation claims or litigation related to our processing of their personal information. Other privacy laws impose strict requirements around marketing communications and the deployment of cookies on users' devices. The breadth and depth of changes in data protection obligations has required significant time their enforcement and resources, including a review of interpretation, may significantly increase our technology compliance costs and systems currently in use against the requirements of GDPR. Our actual or perceived failure to comply with laws, regulations or contractual commitments regarding privacy, data protection and data security could lead to costly legal action, adverse publicity, significant liability and decreased demand for our services, which could otherwise adversely affect our business and results of operations and financial condition.

In addition, laws such as the Telephone Consumer Protection Act of 1991 ("TCPA"), restrict telemarketing and the use of automatic SMS text messages without explicit customer consent. The scope and interpretation of the laws that are or may be applicable to the delivery of text messages are continuously evolving and developing. If we do not comply with these laws or regulations, or if our customers fail to do so, we could face direct liability.

Compliance with these laws and regulations has not had, and is not expected to have, a material effect on our capital expenditures, results of operations and competitive position as compared to prior periods, and we do not currently anticipate material capital expenditures for environmental control facilities, of which we currently have none, operations. For additional information about government regulation laws and regulations applicable to our business, see Part I, Item 1A, "Risk Factors" Factors—Risks Related to Cybersecurity, Data Privacy and Intellectual Property" and "Risk Factors—Risks Related to Legal and Regulatory Matters" in this Annual Report on Form 10-K.

The Twilio Magic

We believe there is a unique spirit to Twilio, manifested in who we are and how we work together. We value and invest in a positive culture of optimism, innovation, and accountability. Our values, which we call the Twilio Magic, remind us every day who we are at our core and guide how we act and how we make decisions.

We are Builders. We are Owners. We are Curious. We are Positrons.

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Twilio.org

Communications play a critical role in solving some of the world's toughest social challenges. Nonprofits are meeting the increased demand for their support through From empowering people affected by violence with critical resources, to streamlining staff and volunteer coordination, nonprofits leverage communication technology and in doing so are helping more to help individuals build long term well-being and helping to help communities recover from humanitarian crises. Through Twilio.org, which is a part of our company and not a separate legal entity, we donate and sell our products at a reduced rate to nonprofits and offer grant funding to help scale these organizations' missions. In 2015, we reserved 1% of Twilio's common stock to fund Twilio.org. As of December 31, 2022 December 31, 2023, 530,449 442,041 shares of Twilio Class A common stock were set aside for Twilio.org operations, charitable activities. In 2022, 2023, over 15,000 20,000 active social impact accounts customers used Twilio products and funding to reach more than 559 million 546 million people worldwide.

Information on our key ESG programs, goals and commitments, and certain metrics can be found in our annual Impact and DEI Report, available on our website at <https://investors.twilio.com/governance>. Website references throughout this document are provided for convenience only, and the content on the referenced websites is not incorporated by reference into this report. While we believe that our ESG goals align with our long-term growth strategy and financial and operational priorities, they are aspirational and may change, and there can be no assurance that they will be met.

Our Employees and Human Capital Resources

As of December 31, 2022 December 31, 2023, we had a total of 8,156 5,867 employees, including 3,490 2,337 employees located outside of the U.S. None Although we have works council, statutory and/or collective bargaining employee representation obligations in certain countries outside of the U.S., none of our U.S. employees are represented by a labor union with respect to their employment. Employees in certain of our non-U.S. subsidiaries have the benefits of collective bargaining arrangements at the national level. We consider our relations with our employees to be good and have not experienced interruptions of operations or work stoppages due to labor disagreements.

Diversity, Equity We are committed to embedding and **Inclusion**

Following our organizational commitment to operationalizing diversity, equity, and inclusion ("DEI") principles, across our business. More information on our approach to DEI and how we continue the work to embed build a diverse and operationalize anti-racism inclusive workplace can be found in our annual Impact and anti-oppression values across DEI reports, available on our website. Website references throughout this document are provided for convenience only, and the business. In 2022, we successfully expanded our voluntary self-identification campaign so that employees outside of content on the U.S. can now share how they identify in various categories, giving us a better understanding of our employees to facilitate our DEI initiatives and to allow us to be more intentional in how we support underrepresented communities. We also continue our anti-racist and anti-oppression learning opportunities through employee resource group specific programming and events. Lastly, we have focused on pay parity, ensuring that employees with the same job and location are paid fairly relative to one another.

Compensation and Benefits referenced websites is not incorporated by reference into this report.

We are committed to delivering a comprehensive compensation and benefits program that provides support for all of our employees' well-being. We provide competitive compensation and benefits to attract and retain talented employees, including offering market-competitive salaries, equity, and incentive compensation in the case form of our bonuses or sales teams, commissions. We generally offer full-time employees commissions, and equity at the time of hire and through annual equity grants, as well as through an employee stock purchase plan, to foster a strong sense of ownership in and commitment to our long-term success. compensation for certain employees.

We ensure that our compensation is fair for all employees, regardless of classifications, such as race and gender. We routinely run a rigorous statistical analysis to ensure compensation is fair, taking into account factors that should impact pay, like role, level, location, and performance.

Our full-time employees are eligible to receive, subject to the satisfaction of certain eligibility requirements, our comprehensive benefits package that includes medical, dental and vision insurance and life and disability insurance plans. In addition, we provide time off and we maintain a tax-qualified 401(k) retirement plan that provides eligible U.S. employees with an opportunity to save for retirement on a tax-advantaged basis. In 2022, 2023, we matched 50% of the first 6% of contributions by plan participants, subject to annual contribution limits set forth in the Internal Revenue Code of 1986, as amended.

In structuring these benefit plans, we seek to provide an aggregate level of benefits that are comparable to those provided by similar companies.

Corporate Information

Twilio Inc. was incorporated in Delaware in March 2008. Our principal executive offices are located at 101 Spear Street, Fifth Floor, San Francisco, California 94105, and our telephone number is (415) 390-2337. Our website address is www.twilio.com. Information contained on, or that can be accessed through, our website does not constitute part of this Annual Report on Form 10-K.

Twilio, the Twilio logo and other trademarks or service marks of Twilio appearing in this Annual Report on Form 10-K are the intellectual property of Twilio. Trade names, trademarks and service marks of other companies appearing in this Annual Report on Form 10-K are the intellectual property of their respective holders.

Information about Geographic Revenue

Information about geographic revenue is set forth in Note 15 16 of our Notes to Consolidated Financial Statements included in Part II, Item 8, "Financial Statements and Supplementary Data" of this Annual Report on Form 10-K.

Available Information

Our filings are available to be viewed and downloaded free of charge through our investor relations website after we file them with the Securities and Exchange Commission ("SEC"). Our filings include our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, our Proxy Statement for our annual meeting of stockholders, Current Reports on Form 8-K and other filings with the SEC. Our investor relations website is located at <http://investors.twilio.com>. The SEC also maintains an Internet website that contains periodic and current reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

We webcast our earnings calls and certain events we participate in or host with members of the investment community on our investor relations website. Additionally, we provide notifications of news or announcements regarding our financial performance, including SEC filings, investor events, press and earnings releases, and blogs as part of our investor relations website. Further corporate governance information, including our corporate governance guidelines and code of business conduct and ethics, is also available on our investor relations website under the heading "Governance." The contents of our websites are not intended to be incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

Item 1A. Risk Factors

Investing in our Class A common stock ("common stock") involves a high degree of risk. A description of the risks and uncertainties associated with our business is set forth below. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, before making a decision to invest in our Class A common stock. The risks and uncertainties described below may not be the only ones we face. If any of the risks actually occur, our business, results of operations and financial condition could be adversely affected. In that event, the market price of our Class A common stock could decline, and you could lose part or all of your investment.

Risk Factor Summary

Our business operations are subject to numerous risks and uncertainties, including those outside of our control, that could cause our business, results of operations, and/or financial condition to be harmed, including risks regarding the following:

Risks Related to Our Business and Industry.

- the impact of macroeconomic uncertainties;
- fluctuations in our quarterly results and our ability to meet securities analysts' and investors' expectations;
- the effectiveness of actions taken to restructure our business in alignment with our strategic priorities;
- the potential disruption caused by the reorganization of our business into unit reorganization and further changes to our business units; organization and reporting segments;
- our ability to maintain and grow our relationships with existing customers such that they increase their usage of our platform;
- our ability to attract new customers in a cost-effective manner and manner;
- our ability to increase adoption of our products by enterprises;
- our ability to develop new products and enhancements that achieve market acceptance and adapt to changing technology and regulations, industry standards and interoperability requirements;
- the evolution of the market markets for our products and platform, including the continued adoption of such by developers; products;

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- our ability to effectively manage our growth;
- our ability to compete effectively in an intensely competitive market; markets;
- our history of losses and uncertainty about our future profitability;
- our ability to hire, integrate and retain highly skilled personnel;
- our ability to maintain and enhance our brand and increase market awareness of our company and products;
- our ability to adapt and respond effectively to rapidly changing technology, evolving industry standards, changing regulations, and changing customer needs, requirements or preferences;
- disruptions or deterioration in the quality of service and connectivity by third-party service providers;
- a failure to set optimal prices for our products;
- significant risks associated with expansion of our international operations;
- our reliance on our largest customers to generate a significant amount of our revenue;
- our ability to integrate and achieve the expected benefits of acquisitions, partnerships and investments;

Risks Related to Cyber Security, Cybersecurity, Data Privacy and Intellectual Property.

- any breaches of our networks or systems, or those of AWS Amazon Web Services ("AWS") or our service providers;
- our substantial reliance on AWS to operate our platform;
- our actual or perceived failure to comply with increasingly stringent laws, regulations and obligations relating to privacy, data protection and data security;
- our ability to protect our intellectual property rights;

- our use of open source software;
- our reliance on third-party technology and intellectual property;

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- our use of AI technologies in our platform and business;

Risks Related to Legal and Regulatory Matters

- our ability to comply with telecommunications-related regulations, and the impact of future legislative or regulatory actions;
- our ability to obtain or retain geographical, mobile, regional, local or toll-free numbers and to effectively process requests to port such numbers in a timely manner due to industry regulations;
- federal and state legislation and international laws imposing obligations on the senders of commercial emails;
- fraudulent or illegal usage of or activity relating to our products;
- changes in laws and regulations related to the Internet or its infrastructure;
- compliance with applicable laws and regulations, including export control, economic trade sanctions, and anti-corruption regulations;
- standards imposed by private entities and inbox service providers that interfere with the effectiveness of our platform;
- any legal proceedings or claims against us;

Risks Related to Financial and Accounting Matters

- exposure to foreign currency exchange rate fluctuations;
- our substantial indebtedness that may decrease our business flexibility;
- our ability to obtain additional capital to support our business and its availability on acceptable terms;
- the accuracy of our key metrics, and assumptions and estimates used to calculate them;
- the accuracy of our estimates and judgments related to our critical accounting policies;
- changes in accounting standards that may cause adverse financial reporting fluctuations;
- the possibility that our goodwill or intangible assets could become impaired;
- our failure to maintain an effective system of disclosure controls and internal control over financial reporting;

Risks Related to Tax Matters

- our ability to use our net operating losses and certain other tax attributes to offset future taxable income and taxes;
- additional tax liabilities or potentially adverse tax consequences on our global operations and structure;
- changes in tax rules and regulations;

Risks Related to Ownership of Our Class A Common Stock

- volatility of the trading price of our Class A common stock;
- potential decline in the market price of our Class A common stock due to substantial future sales of shares;
- the dual class nature of our stock;
- the possibility that we may not realize the anticipated long-term stockholder value of our share repurchase program;

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- securities or industry analysts changing their recommendations regarding our Class A common stock; and
- anti-takeover provisions contained in our governing documents and the exclusive forum provision in our bylaws, bylaws;

General Risks

- the occurrence of natural catastrophic events and other events beyond our control; and
- our initiatives, goals, commitments, and disclosures related to ESG matters.

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Risks Related to Our Business and Our Industry

Global economic and political conditions, including macroeconomic uncertainties, may continue to adversely impact our business, results of operations and financial condition.

Global economic and business activities continue to face widespread macroeconomic uncertainties, including changes in the labor shortages market and supply chain disruptions, inflation and monetary supply shifts, as well as volatility in the banking and financial services sectors, and recession risks, which may continue for an extended period. Additionally, the instability in the geopolitical environment in many parts of the world, including from the war in Ukraine and conflict in the Middle East, may continue to put pressure on and lead to cause or exacerbate uncertain economic conditions. These macroeconomic conditions have resulted in, and may continue to result in, decreased business spending by our customers current and prospective customers and business partners, reduced demand for or usage of our products, lower renewal rates by our customers, longer or delayed sales cycles, including customers current and prospective customers delaying contract signing or contract renewals, reduced budgets or minimum commitments related to the products that we offer, or delays in customer payments or our ability to collect accounts receivable, all of which could have an adverse impact on our business, results of operations and financial condition.

The current macroeconomic environment has constrained the budgets and financial resources of some of our current and prospective customers, which has caused them to become more budget-conscious and to delay and/or reduce spending. Given that a majority of our revenue is usage-based and impacted by general consumer sentiment and activity, our business may be more immediately and severely impacted by adverse macroeconomic conditions than those that rely primarily on software-as-a-service ("SaaS") subscription revenue. The current macroeconomic environment has caused certain of our Communications customers to reduce or terminate their usage of our products without notice or termination charges, which has negatively impacted, and, despite recent stabilization in usage volumes, may in the future negatively impact, our Communications revenue. Similarly, the current macroeconomic environment has caused certain of our Segment and other subscription-based customers to renegotiate existing contracts on less advantageous terms to us than those currently in place, reduce or limit their contract value, default on payments due on existing contracts, or fail to renew at the end of their current contract term, which has had, and may continue to have, a negative impact on our revenue. A prolonged economic slowdown could exacerbate these negative effects on revenue and revenue growth in both our Communications and Segment business units. Additionally, when customers fail to pay us or reduce their spending with us, we may be adversely affected by an inability to collect amounts due, the costs of enforcing the terms of our contracts, including through litigation, and/or a reduction in revenue. For example, in February 2023, one of our customers, Oi SA, a Brazilian telecom company, initiated reorganization proceedings in a Brazilian bankruptcy court as well as a secondary proceeding under Chapter 15 in the United States and exposed us to risks on collections of pre-petition receivables and ongoing revenue.

Many of our customers are in industries that have been negatively impacted by recent macroeconomic conditions, including customers in social media, cryptocurrencies, retail and e-commerce, consumer packaged goods, direct-to-consumer and other industries dependent on consumer spending, and the concentration of our customer base within these industries could exacerbate the effects of weakening macroeconomic conditions on our business. For example, we have experienced declines in usage of our Communications products by customers in industries negatively impacted by macroeconomic conditions which, despite recent stabilization in usage volumes, could reoccur or worsen in the future. We have also generally experienced, and expect to continue to experience to varying degrees, longer sales cycles when engaging with current and potential customers in industries negatively impacted by macroeconomic conditions, such industries. Our products are also utilized by customers include many small and medium-sized businesses, which have been, and may continue to be, adversely affected by economic downturns the macroeconomic conditions and other adverse macroeconomic conditions uncertainties to a greater extent than larger enterprises with greater financial resources. Given that a majority If the effects of the current macroeconomic environment continue to adversely affect our business and the businesses of our revenue is usage-based, our business may be more severely impacted by adverse macroeconomic conditions than those that rely primarily on software-as-a-service ("SaaS") subscription revenue. Prolonged economic slowdowns may also result in customers without long-term contracts with us may reducing or terminating their usage of our products without notice or termination charges. Similarly, these conditions may result in customers requesting to renegotiate existing contracts on less advantageous terms to us than those currently in place, defaulting on payments due on existing contracts, or not renewing at the end of their current contract term. For example, rising interest rates in the United States have begun to affect, and may continue to affect, businesses across many industries, including ours, by increasing the costs of labor, employee healthcare and other benefits, which may further constrain our, our customers' and prospective customers' budgets and financial resources. A sustained general economic downturn may result in customers, and potential customers perceiving our products as being too costly, or too difficult to deploy or migrate to, such that our revenue may be disproportionately affected by delays or reductions in spending. Additionally, if customers fail to pay us or reduce their spending with us, we may be adversely affected by an inability to collect amounts due, the costs of enforcing the terms of our contracts, including through litigation, or a reduction in revenue. To the extent that macroeconomic uncertainties continue to harm our business, results of operations and financial condition may continue to be harmed, and many of the other risks described in this "Risk Factors" section will be exacerbated.

Our quarterly and annual results of operations have fluctuated in the past and may continue to do so in the future. As a result, we may fail to meet securities analysts' and investors' expectations, which could cause the price of our Class A common stock to decline.

Our quarterly and annual results of operations including our revenue, cost of revenue, gross margin and operating expenses, have fluctuated in the past and may continue to do so in the future due to a variety of factors, many of which are outside of our control. These fluctuations and the related impacts to any earnings guidance we may issue from time to time could cause the price of our Class A common stock to change significantly or experience declines. In addition to the other risks described in this "Risk Factors" section, some of the factors that may result in fluctuations to our results of operations include:

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- fluctuations in demand for, pricing of, or usage of, our products, including due to the effects of global macroeconomic conditions, the easing of the COVID-19 pandemic, competition, and differing levels of demand for our products based on changing customer priorities, resources, financial conditions and economic outlook;
- general economic conditions, including a downturn or recession, rising inflation and rising interest rates, and geopolitical uncertainty and instability;
- changes in the expected costs and benefits organization of our business unit reorganization and changes to our leadership structure; units;

- the amount and timing of costs, including and any adverse effects associated with, our recent workforce reductions;

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- our ability to attract and retain new customers, obtain renewals from existing customers and cross-sell or otherwise increase revenue from existing customers;
- our ability to introduce new products and enhance existing products;
- our ability to leverage more of our self-service capabilities for customers;
- competition and the actions of our competitors, including pricing changes and the introduction of new technologies, products, services and geographies;
- significant security breaches or incidents impacting our platform, or interruptions to the delivery and use of our products;
- changes in cloud infrastructure, network services and other third-party technology, including the fees charged by their providers;
- the rate productivity of our salesforce, including our enterprise salesforce; sales force;
- the length and complexity of the sales cycle for certain of our products especially for sales to larger enterprises, government and regulated organizations; or customers;
- changes in the mix of products that our customers use during a particular period;
- seasonal trends in consumer activity;
- changes in the mix or amount of products sold in the United States versus internationally;
- the amount and timing of operating costs and capital expenditures related to the operations and expansion of our business;
- expenses in connection with mergers, acquisitions, dispositions, or other strategic transactions;
- the timing of customer payments and our ability to collect accounts receivable from customers;
- rising increases in inflation and our ability to control costs, including our operating expenses;
- the amount and timing of costs associated with recruiting, training and integrating new employees, and retaining existing employees;
- changes in foreign currency exchange rates and our ability to effectively hedge our foreign currency exposure;
- extraordinary expenses such as litigation or other dispute-related settlement payments;
- changes in laws, industry standards and regulations that affect our business;
- sales tax and other tax determinations by authorities in the jurisdictions in which we conduct business;
- the impact of new accounting pronouncements; and

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- fluctuations in stock-based compensation expense. expenses.

The occurrence of one or more of the foregoing and other factors may cause our results of operations to vary significantly. As such, comparing our operating results on a period-to-period basis may not be meaningful and should not be relied upon as an indication of future performance. In addition, a significant percentage of our operating expenses is fixed in nature and is based on forecasted revenue trends. Accordingly, in the event of a revenue shortfall, we may not be able to mitigate the negative impact on our net income (loss) and margins in the short term. If we fail to meet or exceed the expectations of investors or securities analysts, then the trading price of our Class A common stock could fall substantially, and we could face costly lawsuits, including securities class action suits.

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suits, which, in turn, could harm our business, results of operations and financial condition.

Actions that we are taking to restructure our business in alignment with our strategic priorities may not be as effective as anticipated.

In September of 2022, December 2023, we reduced our workforce by approximately 1.1% 5%, and in February 2023, we reduced after reducing our workforce by an additional approximately 11% and approximately 17%, in September 2022 and February 2023, respectively. While our reductions in force and other efforts to restructure our business were designed to streamline operations, reduce operating costs, improve operating margins, and shift realign our selling capacity, to accelerate software sales, we may encounter challenges in the execution of these efforts that could prevent us from recognizing the intended benefits of such efforts or otherwise adversely affect our business, results of operations and financial condition.

As a result of the reductions in force, we have incurred, and may continue to incur, additional costs in the short-term, short term, including cash expenditures for employee transition, transitions, notice period and severance payments, employee benefits and related facilitation costs, as well as non-cash expenditures related to vesting of share-based awards. These additional cash and non-cash expenditures could have the effect of reducing our operating margins. Our reductions in force may result in other unintended consequences, including employee attrition beyond our intended reduction in force, which may also be further exacerbated by the actual or perceived declining value of our equity awards; force; damage to our corporate culture and decreased employee morale among our remaining employees, including as a result of reduced employee perks; employees; diversion of management attention; damage to our reputation as an employer, which could make it more difficult for us to hire new employees in the future; and the loss of institutional knowledge and expertise of departing employees. If we experience any of these adverse consequences, our reductions in force and other restructuring efforts may not achieve or sustain their intended benefits, or the benefits, even if achieved, may not be adequate to meet our long-term profitability and operational expectations, which could adversely affect our business, results of operations and financial condition.

In addition, our reductions in force and other restructuring efforts could lead us to fail to meet, or cause delays in meeting, our operational and growth targets. While positions have been eliminated, functions that they performed remain necessary to our operations, and we may be unsuccessful in effectively and efficiently distributing the duties and obligations of departed employees among our remaining employees. The reduction in our workforce could also prevent us from pursuing new opportunities and initiatives or require us to adjust our growth strategy. As part of our reductions in force, we have reduced the size of our sales force to drive further efficiencies in our sales operations. As the size of our With a smaller workforce, decreases, we will increasingly rely are relying more heavily on our self-service model to drive sales of our communications Communications products to customers that do not require direct account coverage. Our self-service capabilities may not be as successful as we anticipate, and similarly, our efforts to accelerate software Segment sales may not be effective or may take longer than we expect to drive growth. If we experience any of these factors lead us to fail adverse consequences, our reductions in force and other restructuring efforts may not achieve or sustain their intended benefits, or the benefits, even if achieved, may not be adequate to meet our long-term profitability and operational and growth targets or to delays in meeting such targets, expectations, which could adversely affect our business, results of operations and financial condition may be adversely affected. condition.

As we continue to identify areas of cost savings and operating efficiencies, we may consider implementing further measures to reduce operating costs and improve operating margins. We may not be successful in implementing such initiatives, including as a result of factors beyond our control. If we are unable to realize the anticipated savings and efficiencies from our reductions in force, other restructuring efforts and future strategic initiatives, our business, results of operations and financial condition could be harmed.

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In the first quarter of 2023, we reorganized our business into business units. units, and we have since adopted a two-segment reporting structure and further modified our business units and reporting segments. These changes may be disruptive to our business and may not have the desired effects.

As we announced in February 2023, in the first quarter of 2023, we reorganized our business into two business units – Twilio units—Communications and Twilio Data & Applications – Applications—to enable us to develop the organization and systems to successfully operate a multi-product business and to better align our sales resources with customer and market opportunities. In addition, as the business units were created based on how management views and evaluates our business, beginning with the quarter ended June 30, 2023, we changed our operating and reporting segment structure from one reportable segment to two reportable segments and revised our prior period presentation to conform to the new segments. In the fourth quarter of 2023, we modified the organization of our business units by moving Flex and Marketing Campaigns from Data & Applications to Communications, and we subsequently renamed Data & Applications to Segment.

We expect that our Our business unit reorganization and changes in our segment reporting structure have required, and will continue to require, significant expenditures, and allocation of valuable management resources, and may place significant demands on our operational and financial infrastructure. This could lead to a number of risks, including: actual or perceived disruption of service or reduction in service standards to our customers; the failure to preserve adequate internal controls as we reorganize our general and administrative functions, including our information technology and financial reporting infrastructure; the failure to preserve partnership, sales and other important relationships and to resolve conflicts that may arise; loss of sales as we eliminate certain sales positions, reorganize our sales teams into business units, and focus on leveraging improve and expand our use of self-service capabilities; failure to develop effective cross-selling motions between the businesses; failure of the business units to drive efficiencies and leverage; diversion of management attention from ongoing business activities and core business objectives in order to manage operational changes; and the failure to maintain our corporate culture, employee morale and productivity, and to retain highly skilled employees due to reductions in our workforce and changes in leadership structure. Because of these and other factors, we cannot predict whether we will

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realize the purpose and anticipated benefits of our business reorganizations and segment reporting changes, and any similar changes in the business unit reorganization, future, and if we do not, our business, results of operations and financial condition could be adversely affected.

We are currently conducting an operational review of our Segment business, which we expect to complete in March 2024 and which could result in further changes to our Segment business.

There is no guarantee that investors, analysts or the market will understand or favorably view the changes we make to our financial reporting in connection with the shift from one to two segments or that any such changes will have the desired effect. Failure of investors or analysts to understand our revised segment reporting structure may negatively affect their ability to understand our business and operating results, which could adversely affect our stock price. In addition, we test for goodwill impairment at the reporting unit level and consider the difference between the fair value of a reporting unit and its carrying value when determining whether any impairment exists. There can be no assurance that changes to our segment reporting structure and business units will not result in impairment charges in future periods, which could harm our operating results.

Our business depends on customers increasing their use of our products, and a loss of customers or decline in their use of our products could adversely affect our business, results of operations and financial condition.

Our revenue grows as customers increase their usage of a product, extend their usage of a product to new applications or adopt a new product that we offer. The majority of our revenue is usage-based and our ability to grow and generate incremental revenue depends, in part, on our ability to maintain and grow our relationships with existing customers and to have them increase their usage of our platform, products. If our customers do not increase their use of our products, then our revenue may decline. The majority decline or grow at rates lower than expected. Most of our customers are charged based on their usage of our products. Most usage-based customers do not have long-term contractual financial commitments to us and, therefore, most of our customers may reduce or cease their use of our products at any time without penalty or termination charges. Our subscription-based customers generally base their contract value on anticipated usage, and if their anticipated levels of usage are not met, they may reduce their contract value or choose not to renew their contract upon its expiration.

Customers may terminate or reduce their use of our products for any number of reasons, including if they are not satisfied dissatisfaction with our products or with the value proposition of our products, or our ability inability to meet their needs and expectations, or due to their use of competitors' products. For example, products, macroeconomic conditions, or reductions in their budgets. Additionally, prior instances of disruptions in our cloud communications platform impacted our customers' ability to use products on our platform for up to several hours at a time. Issues with our products have caused, and may in the future cause, us to incur certain costs associated with offering credits to our affected customers, which have had, and in the future may have, an adverse impact on customer satisfaction and our ability to retain or attract customers.

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Additionally, we believe our ability to provide customers with high-quality, effective customer support services at all stages of the process is a crucial component of maintaining customer satisfaction, generating increased customer usage of our products and ultimately retaining customers. Our inability to devote sufficient resources If we are unable to effectively assist our customers, it could adversely affect our ability to retain existing customers and could disincentivize prospective customers from adopting our products. We The resources we dedicate to customer service at a particular time may be prove insufficient, such as in the event we are unable to respond quickly enough to accommodate short-term increases in demand for customer support. We also may be unable to modify the nature, scope and delivery of our customer support in order to compete with changes in the support services provided by our competitors. Our sales are highly dependent on our business reputation and on positive recommendations from our customers. Our inability If we are unable to provide high-quality customer support, or if there is a market perception that we do not maintain high-quality customer support, it could erode the trust of current and potential customers and adversely affect our reputation.

Customer usage of our products is depends on factors generally outside of our control, and therefore including macroeconomic conditions, so it is difficult to accurately predict customers' usage levels. The loss of customers or reductions in their usage levels of our products may each have a negative impact on our business, results of operations and financial condition. Our Dollar-Based Net Expansion Rate has recently declined as compared to prior periods, and it may continue to decline in the future if customers are not satisfied with our products and related customer service experience, the value proposition of our products or our ability to meet their needs and expectations, expectations, or due to macroeconomic conditions or reductions in customers' budgets. If a significant number of customers cease using, or reduce their usage of our products, including due to cost-saving measures in the face of macroeconomic uncertainty or changes in the competitive landscape, then we may be required to spend significantly more on sales and marketing than we currently expect in order to maintain or increase revenue from customers. Such additional sales and marketing expenditures could adversely affect our business, results of operations and financial condition.

If we are unable to attract new customers in a cost-effective manner, or sell additional products to our existing customers or develop new products and enhancements to our products that achieve market acceptance then in a cost-effective manner, our business, results of operations and financial condition would be adversely affected.

To grow our business, we must continue to attract new customers in a cost-effective manner, increase revenue from existing customers, and increase gross margins, profits, each of which depends in part on our ability to enhance and improve our existing products, increase adoption and usage of our products, and introduce successfully market new products, particularly including products with higher gross margins, margins, in a cost-effective manner. We use a variety of marketing channels to promote our products and platform, such as developer events and developer evangelism, search engine marketing and optimization, regional customer events, email campaigns, billboard advertising and public relations initiatives. If the costs of the marketing channels we use increase, then we may choose to use alternative and less expensive channels, which may not be as effective as the channels we currently use. We have made in the past, and may make in the future, significant expenditures and investments of time and resources in new marketing campaigns and sales motions, and we cannot guarantee that any such investments will lead to wider adoption of our products or to the cost-effective acquisition of additional customers. In addition, new products that we develop may require increasingly sophisticated and more costly sales efforts and result in a longer sales cycle. If we are unable to maintain effective marketing programs, then our ability to efficiently attract new customers could be adversely affected, and we may not be able to attract the number and types of new customers we are seeking.

In addition, we are continuing to improve and expand our ability to attract new use of self-service capabilities, particularly for our Communications API customers, and increase revenue from existing customers depends in large part on our ability to enhance and improve our existing products and to introduce compelling new products that reflect the changing

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nature of our markets, technological advances and industry standards. The success of any enhancements or new products depends on several factors, including timely completion, adequate quality testing, actual performance quality, market-accepted pricing levels and overall market acceptance. Enhancements and new products that we develop which may not be introduced as effective as we anticipate in a timely driving adoption or cost-effective manner, may contain errors or defects, may require reworking features and capabilities, may have interoperability difficulties with our platform or other products or may not achieve the broad market acceptance necessary to generate significant revenue or increase our gross margins. Furthermore, our ability to increase the increased usage of our products depends, in part, on the development of new use cases for our products, which is typically driven by our developer community and may be outside of our control. Our ability to generate usage of additional products by our customers may also require increasingly sophisticated and more costly sales efforts and result in a longer sales cycle. products. If we are unable to successfully enhance our existing products to meet evolving customer requirements, increase adoption and usage of our products, develop existing and drive adoption of new products, and increase our gross margins, or if our efforts to increase the usage of our products are more expensive than we expect, then our business, results of operations and financial condition would be adversely affected. The adoption of our products, and the development of enhancements and new products, also depends, in part, on our ability to anticipate complex and uncertain emerging technologies, changes to customers' needs and expectations, and shifts in industry standard practices. Anticipating these factors requires that we allocate significant resources without any guarantee that any such investments and efforts will result in wider adoption of our products in the marketplace. If we are unable to adequately anticipate these changes, then our business and financial condition could be adversely affected.

Additionally, the success of our existing products and any new products we introduce depends, in part, on our ability to integrate them with third-party products used by us or our customers. The providers of such third-party products may modify the features, functionality, pricing, and other terms and conditions with respect to such products in a manner adverse to us and to our customers that use such third-party products in connection with our products. If we are unable to maintain the integrations between our products with such third-party products, our ability to meet the needs and expectations of our current and prospective customers could be adversely affected and adversely affect our business.

If we are unable to successfully enhance our existing products to meet evolving customer requirements, increase adoption and usage of our products, develop and drive adoption of new products, maintain integrations with third-party products, anticipate changes in technology, customers' needs and expectations, or industry standards, and increase our gross margins, or if our efforts to increase the usage of our products are more expensive time-consuming than we expect, then our business, results of operations and financial condition would be adversely affected.

If we are unable to increase adoption of our products by enterprises, our business, results of operations and financial condition may be adversely affected.

Historically, a majority of our revenue has been generated as a result of software developers adopting our Communications API products through our self-service model. Our ability to increase our customer base, especially among enterprises, and achieve broader market acceptance of our products will depend, in part, on our ability to effectively organize, focus and train our sales, marketing and other employees. Our ability to convince enterprises to adopt our products will depend, in part, on our ability to attract and retain sales employees with experience selling to enterprises. We believe that there is significant competition for experienced sales professionals with the skills and technical knowledge that we require. Even if we are successful in hiring qualified sales employees, new hires require significant training and experience before they achieve full productivity, particularly for sales efforts targeted at enterprises and new territories. Our recent hires and planned hires may not become as productive as quickly as we expect, and we may encounter difficulties or be unable to hire or retain sufficient numbers of qualified individuals in the future in the markets where we do business. Because we do not have a long history of targeting our sales efforts at enterprises, we cannot predict whether, or to what extent, our sales will increase as we organize and train our sales force or how long it will take for sales employees to become productive.

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As we seek to increase the adoption of our products by enterprises, including products like Segment and Engage, which are primarily aimed at complex customer data platform implementations at larger companies, and Flex, which is primarily aimed at complex contact center implementations at larger companies, we expect to incur higher costs and longer sales cycles. In the enterprise market segment, the decision to adopt our products may require the approval of multiple technical and business decision makers, including legal, security, compliance, procurement, operations and information technology ("IT"). In addition, while enterprise customers may quickly deploy our products on a limited basis, before they will commit to deploying our products at scale, they often require extensive education about our products and significant customer support time and also engage in protracted pricing and contract negotiations, which may be exacerbated by changing inflationary pressure and reduced IT budgets and may result in higher costs and longer sales cycles. In addition, sales cycles for enterprises are inherently more complex and less predictable than the sales through our self-service model, and some enterprise customers may not use our products enough to generate revenue that justifies the cost to obtain such customers. These complex and resource-intensive sales efforts could place additional strain on our product and engineering resources. Further, enterprises, including some of our

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existing customers, may choose to develop their own solutions that do not include our products. They may also demand reductions in pricing as their usage of our products increases, notwithstanding increased costs incurred by us to provide such products, which could have an adverse impact on our gross margin. Additionally, economic recessions we have experienced, and may continue to experience, certain of our customers failing to renew their contracts with us, reducing or slowdowns can result limiting their contract values, and engaging in our enterprise customers terminating their arrangements with us, longer sales cycles and reduced or limited contract values as enterprise organizations these customers focus on general cost reductions in the face of macroeconomic uncertainty. As a result of our limited experience selling and marketing to enterprises, our efforts to sell to these potential customers may not be successful. If we are unable to increase the revenue that we derive from enterprises, then our business, results of operations and financial condition may be adversely affected.

Our future success depends, in part, on our ability to develop new products and product enhancements that achieve market acceptance, as well as adapt and respond effectively to rapidly changing technology and regulations, dynamic industry standards, and evolving interoperability requirements.

Our ability to attract new customers and increase revenue from existing customers depends in large part on our ability to enhance and improve our existing products and to introduce compelling new products that reflect the changing nature of our markets, technology, industry standards, and customer needs and preferences. The success of any enhancements or new products we introduce depends on several factors, including timely completion, adequate quality testing, actual performance quality, market-accepted pricing levels and overall market acceptance. Enhancements and new products that we develop may not be introduced in a timely or cost-effective manner, may contain errors or defects, may require reworking features and capabilities, may have interoperability difficulties with our platform or other products or may not achieve the broad market acceptance necessary to generate significant revenue or increase our gross profits. Furthermore, our ability to increase the usage of our products depends, in part, on the development of new use cases for our products, which is typically driven by our developer community and may be outside of our control.

The markets for our products, including the market for communications in general and cloud communications in particular, are subject to rapid technological change, evolving industry standards, and changing regulations, as well as changing customer needs, requirements and preferences. These are all uncertain and we cannot predict the consequences, effects, or introduction of new, disruptive, emerging technologies or the manner and pace at which our markets develop over time, and our ability to compete in these markets depends on predicting and adapting to these changing circumstances. The success of our business will depend, in part, on our ability to adapt and respond effectively to these changes on a timely basis, and anticipating these factors requires that we allocate significant resources without any guarantee that any such investments and efforts will result in initial or enhanced adoption of our products in the marketplace. For example, with the development of next-generation solutions that utilize new and advanced features, including AI and ML, we expect to commit significant resources to developing new products and enhancements incorporating AI and ML, and there is no guarantee that our investments and efforts will result in wider adoption of our products in the marketplace. If new technologies emerge that are able to deliver competitive products and services at lower prices, more efficiently, more conveniently or more securely or if new products are introduced into the market that could render our existing products obsolete, such technologies and products could adversely impact our ability to compete effectively and may lead to customers reducing or terminating their usage of our products. For example, if user authentication practices evolve to reduce or eliminate the use of one-time passwords, our revenue could be adversely affected.

Additionally, the success of our existing products and any new products we introduce depends, in part, on our ability to integrate them with third-party products used by us or our customers. The providers of such third-party products may modify the features, functionality, pricing, and other terms and conditions with respect to such products in a manner adverse to us and to our customers that use such third-party products in connection with our products. If we are unable to maintain the integrations between our products and such third-party products, our ability to meet the needs and expectations of our current and prospective customers could be adversely affected, which could adversely affect our business. Our platform must integrate with and leverage a variety of infrastructure, network, hardware, mobile and software platforms and technologies, and we need to continuously modify and enhance our products and platform continues to adapt to changes and innovation in these technologies. For

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example, Apple, Google, Yahoo and other cell-phone operating system providers or inbox service providers have developed, and may in the future develop, new applications or functions intended to filter spam and unwanted phone calls, messages or emails. Third party platforms may also implement changes to their privacy policies or practices that may adversely impact us or our customers. In addition, our network service providers may adopt new filtering technologies in an effort to combat spam or robocalling. Such technologies may inadvertently filter desired messages or calls to or from our customers. If cell-phone operating system providers, network service providers, our customers or their end users adopt new software platforms or infrastructure, we may be required to develop new versions of our products to work with those new platforms or infrastructure. This development effort may require significant resources, which would adversely affect our business, results of operations and financial condition. Any failure of our products and platform to operate effectively with evolving or new platforms and technologies could reduce the demand for our products. If we are unable to respond to these changes in a cost-effective manner, our products may become less marketable and less competitive or obsolete, and our business, results of operations and financial condition could be adversely affected.

If we are unable to successfully and cost-effectively increase adoption and usage of our existing products, develop and drive adoption of new products, maintain integrations with third-party products, or anticipate and keep pace with changes in technology, customers' needs, customers' expectations, and industry standards, our business, results of operations and financial condition would be adversely affected.

The markets for our products continue to evolve and may decline or experience limited growth, and is dependent in part on developers continuing to adopt our platform and use our products, growth.

The market markets for our products and platform continues continue to evolve, which makes our business and future prospects difficult to evaluate. We believe that our revenue currently constitutes a significant portion of the total revenue in the market. If current and therefore, we believe that our future success will depend in large part on the growth, if any, and evolution of this market. If developers and organizations prospective customers do not recognize the need for and benefits of our products and platform, they may decide to adopt alternative products and services to satisfy some portion of their business needs. In order to grow our business and extend our market position, we intend to focus on educating developers and other potential customers enterprises about the benefits of our products and platform, expanding and improving the functionality of our products and bringing new technologies to market to increase market acceptance and use of our platform. Our growth will depend, in part, on our ability to leverage more of expand the markets that our self-service capability for developers that do not need direct account coverage. We will also continue to prioritize accelerating software sales, which could have an impact on

our results of operations, products address. Our ability to expand the market that our products and platform address do so depends upon a number of factors, including the cost, performance and perceived value associated with such products and platform. The market markets for our products and platform could fail to grow significantly, or at all, or there could be a reduction in demand for our products as a result of any number of factors, including a lack of developer customer acceptance, technological challenges, competing products and services, decreases in spending by current and prospective customers, weakening economic macroeconomic conditions, including due to labor shortages, supply chain disruptions and inflationary pressures and other causes. If our market does these markets do not experience significant growth or demand for our products decreases, then our business, results of operations and financial condition could be adversely affected.

If we fail to effectively manage our growth, then our business, results of operations and financial condition could be adversely affected.

Although we cannot provide any assurance that our business will continue to grow at the same rate or at all in the future, we have experienced substantial growth in our business and operations in recent years, which has placed, and may continue to place, significant demands on our management and our operational and financial resources, resources, especially as we continue to focus on improving our operating efficiency. Although we committed to have conducted workforce reduction plans reductions in September 2022 and February 2023 to reduce operating costs, improve operating margins and accelerate profitability, the past, we may experience employee growth in the future. We have also experienced significant growth in the number of customers, usage and amount of data that our platform and associated infrastructure support. As a result of this growth, our organizational structure is becoming more complex as we improve our operational, financial and management controls as well as our reporting systems and procedures. The expansion of our systems and infrastructure, as well as the changes arising from our business unit reorganization, reorganizations, has required, and will continue to require, us to commit substantial financial, operational, and technical resources. Our revenue may not increase as a result of our investments in these areas and, if revenue does increase, it may not increase enough to offset these investments, or it may take several periods before we begin to see the benefits of these investments. If we are unable to adequately manage our growth and other business changes in a manner that preserves the key aspects of our corporate culture, including as a result of our recent past reductions in force and the reorganization of our business, unit reorganization, the quality and performance of our products may suffer, which could negatively affect our brand, reputation and ability to retain and attract customers and employees. Finally, if we are unable to maintain reliable service levels for our customers or if the level of efficiency in our organization suffers as we grow and transform our operating model, then our business, results of operations and financial condition could be adversely affected.

We continue to scale the capacity of, and enhance the capability and reliability of, our technical infrastructure to support increased activity on our platform. Any failure to maintain performance, reliability, security, integrity and availability of our products and infrastructure to the satisfaction of our customers may harm our reputation and our ability to retain existing customers or attract new customers. If we fail to efficiently scale and manage our infrastructure, or if our customers experience service disruptions or outages, our business, financial condition and operating results may be adversely impacted.

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The market markets in which we participate is are intensely competitive, and if we do not compete effectively, our business, results of operations and financial condition could be harmed.

The market markets for customer engagement platform is our products are rapidly evolving, significantly fragmented and highly competitive, with relatively low barriers to entry in some segments. The principal competitive factors in our market include completeness of offering, credibility with customers, global reach, ease of integration and programmability, product features, platform scalability, reliability, deliverability, security and performance, brand awareness and reputation, the strength of sales and marketing efforts, customer support, as well as and the cost of deploying and using our products. In our Communications business, our competitors are primarily (i) CPaaS companies that offer communications products and applications, (ii) other software companies that compete with portions of our communications product line, and (iii) regional network service providers that offer limited developer functionality on top of their own physical infrastructure, (ii) CPaaS companies that offer communications products and applications, and (iii) other software companies that compete with portions of our communications product line. infrastructure. In our Data & Applications Segment business, our competitors are primarily (i) legacy on-premises vendors, (ii) SaaS companies and marketing cloud platform vendors that offer bundled applications and platforms, and (iii) (ii) CRM and customer experience vendors and (iii) standalone customer data platform vendors.

Some of our competitors and potential competitors are larger and have greater name recognition, longer operating histories, more established customer relationships, larger budgets, lower operating costs, and significantly greater resources than we do. As a result, our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards, customer requirements or changing economic conditions. Our competitors may also offer products or services that address one or a limited number of functions at lower prices, with greater depth than our products or in different geographies. Our current and potential competitors may develop and market new products and services with comparable functionality to our products, and this could lead to us having to decrease prices in order to remain competitive.

With the introduction of new products and services and new market entrants, we expect competition to intensify in the future. As we expand the scope of our products, we may face additional competition and, in some cases, may find our products in competition with those of our customers, which could cause them to replace our products with competitive offerings. If one or more of our competitors were to merge or partner with another of our competitors or our suppliers, the change in the competitive landscape could also adversely affect our ability to compete effectively. For example, certain of our competitors have engaged in acquisition activity and we expect that our competitors will continue to evaluate the acquisition of companies and technologies that could increase competition with our products in the future. In addition, some of our competitors have lower list prices than us, which may be attractive to certain customers even if those products have different or lesser functionality. Pricing pressures and increased competition generally could result in reduced revenue, reduced margins, increased losses or the failure of our products to achieve or maintain widespread market acceptance, any of which could harm our business, results of operations and financial condition.

Our business, results of operations and financial condition also depends, in part, on our ability to establish and maintain relationships through resellers, distributors, and strategic partners. A portion of our revenue is derived from sales made by these partners and any one of them may later decide to sell their own products or those of third parties that may be competitive with our products. A loss or reduction in sales of our products through these third-party intermediaries could adversely affect our revenue and other results of operations.

We have a history of losses and may not achieve or sustain profitability in the future.

We have incurred net losses in each year since our inception, including net losses of \$1.3 billion, \$1.0 billion, \$1.3 billion and \$949.9 million and \$491.0 million in the years ended December 31, 2022, December 31, 2023, 2021 2022 and 2020, 2021, respectively. We had an accumulated deficit of \$3.4 \$5.1 billion as of December 31, 2022 December 31, 2023. We will need to generate and sustain increased revenue levels, and manage our operating expenses, in future periods to become profitable and achieve our stated profitability goals and, even if we do, we may not be able to maintain or increase our level of profitability. We expect to continue to expend substantial financial and other resources on, among other things: investments in our engineering team; improvements in security and data protection; the development of new products, features and functionality and enhancements to our platform; sales and marketing, including the continued expansion of our direct sales organization and marketing programs, especially for enterprises, organizations outside of the United States, and programs directed at increasing our brand awareness among developers, as well expansion of our self-service capabilities; marketing; expansion of our operations and infrastructure, both domestically and internationally; and general administration, including legal, accounting and other expenses related to being a public company. Our efforts to grow our business may be more costly than we expect, and we may not be able to increase our revenue enough to offset our increased associated operating expenses. We may incur significant losses in the future for a number of reasons, including the other risks described herein, and unforeseen expenses, difficulties, complications and delays and other unknown events. If we are unable to achieve and sustain profitability, or if we incur significant losses, the value of our business and Class A common stock may significantly decrease.

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We depend largely on the continued services of highly skilled personnel, including our senior management and other key employees, and failing the inability to attract, integrate or retain such employees could adversely affect our business, results of operations and financial condition.

Our future performance depends on the continued services and contributions of highly skilled personnel, including our senior management and other key employees, to execute on our business plan, to develop our products and platform, to deliver our products to customers, to attract and retain customers and to identify and pursue opportunities to expand our business. We believe that there is, and will continue to be, intense competition for highly skilled management, technical, sales and other employees with experience in our industry. In addition, we have conducted reductions in force and experienced and may continue to experience high levels of employee attrition, which could significantly delay or prevent the achievement of our business objectives, and any resulting influx of new employees may require us to expend time, attention and resources to recruit and retain employees, restructure parts of our organization and train and integrate new personnel. We have focused our hiring efforts on areas such as Segment, Engage and Flex, and we have frozen the vast majority of new hires and backfills outside of these core areas. If we fail to effectively manage attrition, and to hire, integrate and adequately incentivize our personnel, our efficiency and ability to meet our operational and growth targets, as well as our corporate culture, employee morale, productivity and retention, could suffer, and our business and operating results would be adversely impacted.

Additionally, loss of services of senior management or other key employees could significantly delay or prevent the achievement of our development and strategic objectives. In particular, we depend to a considerable degree on the vision, skills, experience and effort of January 2024, our co-founder, and Jeff Lawson, resigned as Chief Executive Officer Jeff Lawson, and as a member of our board of directors, and Khozema Shipchandler, our former President, Twilio Communications, was appointed as Chief Executive Officer and as a member of our board of directors. We will incur various expenses in connection with the transition and we may face challenges in connection with the transition, such as potential changes to our strategy, corporate culture, and other changes in our management structure or roles. Any of our executive officers may terminate employment with us at any time with no advance notice. We have experienced, and may continue to experience, high attrition among our senior management team and key employees. The replacement of any of our senior management or other key employees will involve significant time and costs, and any loss of services of any such key employee for any reason could significantly delay or prevent the achievement of our business objectives and could adversely affect our business, results of operations and financial condition.

The labor market for our business is subject to external factors that are beyond our control, including our industry's highly competitive market for skilled workers and leaders, inflation, effects that the COVID-19 pandemic has had on the labor market, and workforce participation rates, leaders. We must provide competitive compensation packages and a high-quality work environment to hire, retain and motivate employees. Volatility in, or the actual or perceived lack of performance of, our stock price may affect our ability to attract, motivate and retain key employees. In September 2022, February 2023 and February December 2023, we implemented reductions in force, which may have an impact on our ability to hire, retain and motivate employees. If we are unable to retain and motivate our existing employees and attract qualified employees to fill key positions, we may be unable to manage our business effectively, including the development, marketing and sale of our products, which could adversely affect our business, results of operations and financial condition.

Further, we believe that a critical contributor to our success and our ability to attract, recruit, hire and retain highly skilled personnel has been our corporate culture. As we grow and experience organizational changes, including as a result of the reductions in force and our business unit restructuring, we may find it difficult to maintain important aspects of our corporate culture. While we are taking steps to develop a more inclusive and diverse workforce, there is no guarantee that we will be able to do so. Our inability to preserve our culture, or to reshape our culture, as we grow and transform our operating model could limit our ability to innovate and could negatively affect our ability to retain and recruit personnel, continue to perform at current levels or execute on our business strategy, any one of which could adversely affect our business, results of operations and financial condition.

If we are not able to maintain and enhance our brand and increase market awareness of our company and products, then our business, results of operations and financial condition may be adversely affected.

We believe that maintaining and enhancing the "Twilio" brand identity and increasing market awareness of our company and products, particularly among developers and enterprises, is critical to achieving widespread acceptance of our platform, to strengthen strengthening our relationships with our existing customers and to our ability to attract new customers. The successful promotion of our brand will depend largely on our continued marketing efforts, our ability to continue to offer high-quality products, and our ability to successfully differentiate our products and platform from competing products and services. Our brand promotion and thought leadership activities may not be successful or yield increased revenue. In addition, independent industry analysts often provide reviews of our products and competing products and services, which may significantly influence the perception of our products in the marketplace. If these reviews are negative or not as strong as reviews of our competitors' products and services, then our brand may be harmed.

The promotion of our brand also requires us to make substantial expenditures, and we anticipate that these expenditures will increase as our market becomes markets become more competitive and as we expand into new markets. To the extent that these activities

increase revenue, this revenue still may not be enough to offset the increased expenses we incur, including, but not limited to, as a result of recent inflationary pressures. If we are unable to adapt and respond effectively to rapidly changing technology, evolving industry standards, changing regulations, evolving interoperability requirements, and changing customer needs, requirements or preferences, our products may become less competitive.

The market for communications in general, and cloud communications in particular, is subject to rapid technological change, evolving industry standards, and we need to continuously modify and enhance our products and platform to adapt to changes and innovation in these technologies. For example, Apple, Google and other cell-phone operating system providers or inbox service providers have developed and, may in the future develop, new applications or functions intended to filter spam and unwanted phone calls, messages or emails. Third party platforms may also implement changes to their privacy policies or practices that may impact us or our customers. In addition, our network service providers may adopt new filtering technologies in an effort to combat spam or robocalling. Such technologies may inadvertently filter desired messages or calls to or from our customers. If cell-phone operating system providers, network service providers, our customers or their end users adopt new software platforms or infrastructure, we may be required to develop new versions of our products to work with those new platforms or infrastructure. This development effort may require significant resources, which would adversely affect our business, results of operations and financial condition. Any failure of our products and platform to operate effectively with evolving or new platforms and technologies could reduce the demand for our products. If we are unable to respond to these changes in a cost-effective manner, our products may become less marketable and less competitive or obsolete, and our business, results of operations and financial condition could be adversely affected.

To deliver our products, we rely on network service providers and internet service providers for our network service and connectivity, and disruption or deterioration in the quality of these services or changes in network service provider fees that we pay in connection with the delivery of communications on our platform could adversely affect our business, results of operations and financial condition.

We currently interconnect with fixed and mobile network service providers around the world to enable the use by our customers of our products over their networks. Although we are in the process of acquiring authorization in many countries for direct access to phone numbers and for the provision of voice and messaging services on the networks of fixed and mobile network service providers, we expect that we will continue to rely on network service providers for these services. Where we do not have direct access to phone numbers, our reliance on network service providers has reduced our operating flexibility, ability to make timely service changes and control quality of service. In addition, the fees that we are charged by network service providers may change daily or weekly and we can be subject to the imposition of additional fees, penalties, or other administrative or technical requirements, and even service interruption, due to regulatory, competitive, or other industry related changes over which we have little to no control. We typically do not change our customers' pricing as rapidly and, as a result, such fee increases could adversely affect our business and results of operations.

For example, in recent years, multiple major U.S. mobile carriers have introduced Application to Person ("A2P") A2P SMS service offerings that added a new fee for A2P SMS messages delivered to their respective subscribers, and, from time-to-time, other U.S. mobile carriers have added similar fees. While we have historically responded to these types of fee increases through a combination of further negotiating efforts with our network service providers, absorbing the increased costs or changing our prices passing the fees through to customers, there is no guarantee that we will continue to be able to respond in these ways in the future without a material negative impact to our business. In the case of these new carriers' A2P SMS fees, after a short phase-in period where we absorbed the fees, we began on May 1, 2021 to pass these fees directly through to our customers who are sending SMS

messages to these carriers' subscribers. Passing these fees through to our customers typically has the effect of increasing our Communications revenue and cost of revenue, but typically does not impact the gross profit dollars received for sending these messages and, as a result, has a negative impact on our gross margins. Additionally, our ability to respond to any new fees may be constrained if all network service providers in a particular market impose equivalent fee structures, if the magnitude of the fees is disproportionately large when compared to the underlying prices paid by our customers, or if the market conditions limit our ability to increase the price we charge our customers.

Furthermore, many of these network service providers do not have long-term committed contracts with us and may interrupt services or terminate their agreements with us without notice. If a significant portion of our network service providers stop providing us with access to their infrastructure, fail to provide these services to us on a cost-effective basis, cease operations, or otherwise terminate these services, the delay caused by qualifying and switching to other network service providers could be time consuming and costly and could adversely affect our business, results of operations and financial condition. Further, if problems occur with our network service providers, it may cause errors, service outages, or poor-quality communications on our products, and we could encounter difficulty identifying the source of the problem. The occurrence of errors, service outages, or poor-quality communications on our products, whether caused by our platform or a network service provider, may result in the loss of our existing customers or the delay of adoption of our products by potential customers and may adversely affect our business, results of operations and financial condition.

Further, we sometimes access network services through intermediaries who have direct access to network service providers. Although we are in the process of securing direct connections with network service providers in many countries, we expect that we will continue to rely on intermediaries for these services for some period of time. These

intermediaries sometimes have offerings that directly compete with our products and may stop providing services to us on a cost-effective basis. If a significant portion of these intermediaries stop providing services or stop providing services on a cost-effective basis, our business could be adversely affected.

We also interconnect with internet service providers around the world to enable the use of our email products by our customers, and we expect **that we will** to continue to rely on internet service providers for network connectivity going forward. Our reliance on internet service providers reduces our control over quality of service and exposes us to potential service outages and rate fluctuations. The occurrence of poor-quality of service or service outages on our products may result in the loss of our existing customers or the delay of adoption of our products by potential customers and may adversely affect our business, results of operations and financial condition. Similarly, if a significant portion of our internet service providers stop providing us with access to their network infrastructure, fail to provide access on a cost-effective basis, cease operations, or otherwise terminate access, the delay caused by qualifying and switching to other internet service providers could be time consuming and costly and could adversely affect our business, results of operations, and financial condition.

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Failure to set optimal prices for our products could adversely impact our business, results of operations and financial condition.

For certain of our products, we primarily charge our customers based on their **use** **usage** of such **products** ("usage-based pricing"), **products**. One of the challenges of **our** **this** usage-based pricing model is the variability of the fees that we pay to network service providers over whose networks we transmit communications. Such network fees can vary daily or weekly and are affected by volume and other factors that may be outside of our control, and which are difficult to predict. This can result in us incurring increased costs that we may be unable or unwilling to pass through to our customers, which could adversely impact our business, results of operations and financial condition. If we elect to pass through increased fees to our customers, it could adversely affect our relationship with our customers and our customers may look for lower cost alternatives.

We **adjust the pricing models** for our products from time to time and expect that we **may need** **will continue** to **change** **do so**. Many of our **usage-based** **customers enter into** **contracts with negotiated pricing**, **model from time** and our subscription customers are also subject to **time**. In the past, we have at times reduced our prices either for individual **customers in connection with long-term agreements or for a particular product**. Further, **as negotiated pricing**. **As** competitors introduce new products or services that compete with ours or reduce their prices, we may be unable to attract new customers or retain existing customers based on our historical pricing. **As** **If we expand internationally, we also must determine the appropriate price to enable us to compete effectively internationally**. Moreover, enterprises may demand substantial price concessions. In addition, if the mix of products sold changes, including for a shift to IP-based products, then we may need to, or choose to, revise our pricing. As a result, in the future we **may be** **are** required or choose to reduce our prices, **or change our pricing models, which it** could adversely affect our business, results of operations and financial condition.

We are continuing to expand our Our international operations which exposes expose us to risks inherent in global operations.

We are continuing to expand our international operations to increase our revenue from customers outside of the United States as part of our growth strategy. In the years ended **December 31, 2022** **December 31, 2023, 2022** and 2021, we derived **34%**, 34% and 32% of our revenue

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from customer accounts located outside the United States, respectively. The future success of our business will depend, in part, on our ability to **strategically maintain and** expand our customer base worldwide. **Between December 31, 2021 and December 31, 2022, our international headcount grew from 2,964 employees to 3,490 employees. We expect to continue to hire employees outside of the United States to reach new customers and gain access to additional technical talent.** Operating in international markets requires significant resources and management attention and **will subject subjects** us to regulatory, economic and political risks in addition to those we **already** face in the United States.

In addition, we **will** face risks in doing business internationally that could adversely affect our business, including:

- inflation and actions taken by central banks to counter inflation;
- the difficulty of managing and staffing international operations and the increased operations, travel, infrastructure and legal compliance costs associated with servicing international customers and operating numerous international locations;
- our ability to effectively price our products in competitive international markets;
- new and different sources of competition or other changes to our current competitive landscape;
- potentially greater difficulty collecting accounts receivable and longer payment cycles;
- higher or more variable network service provider fees outside of the United States;
- the need to adapt and localize our products and support for specific countries;

- understanding, reconciling, and implementing technical controls to address, different technical standards, data privacy and telecommunications regulations, and registration and certification requirements outside the United States, which could prevent customers from deploying our products or limit their usage;
- our ability to comply with laws, regulations and industry standards relating to data privacy, data protection, data localization and data security, **as well as sustainability and other ESG matters**, enacted in countries and other regions in which we operate or do business, **including and the GDPR associated costs and Brazil's General Data Protection Law (Lei Geral de Proteção de Dados Pessoais) (Law No. 13.709/2018); management attention required to support such compliance;**
- difficulties in understanding and complying with local laws, regulations and customs in non-U.S. jurisdictions;
- compliance with export controls and economic sanctions regulations administered by U.S. and foreign governmental entities in jurisdictions in which we operate, including the Department of Commerce's Bureau of Industry and Security and the Treasury Department's Office of Foreign Assets Control;

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- compliance with various anti-bribery and anti-corruption laws such as the U.S. Foreign Corrupt Practices Act, as amended ("FCPA") and United Kingdom Bribery Act of 2010;
 - changes in international trade policies, tariffs and other non-tariff barriers, such as quotas and local content rules;
 - more limited protection for intellectual property rights in some countries;
 - adverse tax consequences;
 - fluctuations in currency exchange rates, which could increase the price of our products outside of the United States, increase the expenses of our international operations and expose us to foreign currency exchange rate risk;
 - currency control regulations, which might restrict or prohibit our conversion of other currencies into U.S. dollars;
 - restrictions on the transfer of funds;
 - deterioration of political relations between the United States and other countries;

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- the impact of natural disasters and public health epidemics or pandemics such as COVID-19 on employees, contingent workers, partners, travel and the global economy and the ability to operate freely and effectively in a region that may be fully or partially on lockdown; and
 - political or social unrest, economic instability, conflict or war in a specific country or region in which we, our customers, partners or service providers operate, which could have an adverse impact on our operations in the region or otherwise have a material impact on regional or global economies, any or all of which could adversely affect our business.

Also, due to costs from our international **expansion efforts operations** and network service provider fees outside of the United States, which generally are higher than domestic rates, our **Communications** gross margin for international customers is typically lower than our **Communications** gross margin for domestic customers. As a result, our **Communications** gross margin has been, and may continue to be, adversely impacted **as we expand by our operations and customer base worldwide, international operations.** Our failure to manage any of these risks successfully could harm our international operations, and adversely affect our business, results of operations and financial condition.

We currently generate significant revenue from our largest customers, and the loss or decline in revenue from any of these customers could harm our business, results of operations and financial condition.

In the years ended **December 31, 2022** **December 31, 2023**, **2021 2022** and **2020, 2021**, our 10 largest Active Customer Accounts generated an aggregate of **12%** **10%**, **11%** **12%** and **14%** **11%** of our revenue, respectively. If any of these customers, or other large customers, do not continue to use our products, use fewer of our products, or use our products in a more limited capacity, or not at all, our business, results of operations and financial condition could be adversely affected. Additionally, the usage of our products by customers that do not have long-term contracts with us may change between periods. Those with no long-term contract with us may reduce or fully terminate their usage of our products at any time without notice, penalty or termination charges, which may adversely impact our results of operations.

We may not realize potential benefits from our acquisitions, partnerships and investments because of difficulties related to integration, the achievement of synergies, and other challenges.

We have acquired and invested in businesses and technologies that are complementary to our business through acquisitions, partnerships or investments, and we expect to continue to selectively evaluate strategic opportunities in the future. There can be no assurances that our businesses can be combined in a manner that allows for the achievement of substantial benefits. Any integration process may require significant time and resources, and we may not be able to manage the process successfully as our ability to acquire and integrate larger or more complex companies, products, or technology in a successful manner is unproven. If we are not able to successfully integrate these acquired businesses with ours or pursue our customer and product strategy successfully, the anticipated benefits of such acquisitions may not be realized fully or may take longer than expected to be realized. Further, it is possible that there could be a loss of our key employees and customers, disruption of ongoing businesses or unexpected issues, higher than expected costs and an overall post-completion process that takes longer than originally anticipated. In addition, the following issues, among others, must be addressed in order to realize the anticipated benefits of our acquisitions, partnerships or investments:

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- combining the acquired businesses' corporate functions with our corporate functions;
- combining acquired businesses with our existing business in a manner that permits us to achieve the synergies anticipated to result from such acquisitions, the failure of which would result in the anticipated benefits of our acquisitions not being realized in the time frame currently anticipated or at all;
- maintaining existing agreements with customers, distributors, providers, talent and vendors and avoiding delays in entering into new agreements with prospective customers, distributors, providers, talent and vendors;
- determining whether and how to address possible differences in corporate cultures and management philosophies;
- integrating the companies' compliance, administrative and IT infrastructure;
- developing products and technology that allow value to be unlocked in the future;
- evaluating and forecasting the financial impact of such acquisitions, partnerships and investments, including accounting charges; and

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- effecting potential actions that may be required in connection with obtaining regulatory approvals.

In addition, at times the attention of certain members of our management and resources may be focused on integration of the acquired businesses and diverted from day-to-day business operations, which may disrupt our ongoing business.

We have incurred, and may continue to incur, significant, nonrecurring costs in connection with our acquisitions, partnerships and investments and integrating our operations with those of the acquired businesses, including costs to maintain employee morale and to retain key employees. Management cannot ensure that the elimination of duplicative costs or the realization of other efficiencies will offset the transaction and integration costs in the near term or at all.

From time to time we may also divest or stop investing in certain businesses or products. For example, in the second quarter of 2023, we sold our Internet of Things assets and liabilities, and in the third quarter of 2023, we sold our ValueFirst business. The effects sale of the COVID-19 pandemic a business or product may require us to restructure operations and/or terminate employees, and related public health measures have affected how we could expose us to unanticipated ongoing obligations and liabilities, including as a result of our indemnification obligations. Additionally, such transactions could disrupt our customer, supplier and/or employee relationships and divert management and our employees' time and attention. During the pendency of a divestiture, we may be subject to risks related to a decline in the business, loss of employees, customers, partners or suppliers, and service providers are operating our respective businesses, and that the extent of the impact on our business and results of operations remains uncertain.

The global COVID-19 pandemic has disrupted, and transaction may continue to disrupt, our day-to-day operations and the operations of our customers, partners and service providers. The pandemic and its impact not close, which could have an adverse effect on the global economy business to be divested and on us. Additionally, we may result in differing levels of demand for our products as the priorities, resources, financial conditions and economic outlook of our customers, partners and service providers change, which could adversely affect or increase the volatility of experience harm to our financial results. Any prolonged contractions in industries impacted by COVID-19, along with any effects on supply chain or on other industries in which our customers, partners results, including loss of revenue, and service providers operate, could adversely impact our business, results of operations and financial condition. The pandemic could also result in reduced customer demand and willingness to enter into or renew contracts with us, which would adversely impact our business, results of operations and overall financial performance in future periods. While we have developed and continue to develop plans to help mitigate the potential negative impact of the pandemic on our business, these efforts may not be effective. The impact realize the expected benefits and cost savings of the pandemic on these actions and our business will continue to depend on future developments, including but not limited to, the emergence of new coronavirus variants, the efforts or other actions undertaken to contain the virus or mitigate its effects and the easing or removal of such actions, all of which could evolve or change at any given time and are difficult to predict. If the COVID-19 pandemic continues to impact our employees, partners, suppliers or customers, or if the abatement of the pandemic operating results in decreased demand or a more challenging sales environment, our business, results of operations and financial condition may be harmed. adversely impacted.

Risks Related to Cyber Security, Cybersecurity, Data Privacy and Intellectual Property

Breaches of or incidents impacting our networks or systems, or those of Amazon Web Services (“AWS”) AWS or our service providers, could degrade our ability to conduct our business, compromise the integrity of our products, platform and data, result in significant loss or unavailability of data and the theft of our intellectual property, damage our reputation, expose us to liability to third parties and require us to incur significant additional costs to maintain the security of our networks and data.

We depend upon our IT systems to conduct virtually all of our business operations, ranging from our internal operations and research and development activities to our marketing and sales efforts and communications with our customers and business partners. We have in the past and may in the future be subject to a variety of evolving threats, including but not limited to social-engineering attacks (including through phishing attacks), malicious code (such as viruses and worms), malware (including as a result of advanced persistent threat intrusions), denial-of-service attacks (such as credential stuffing), personnel misconduct or error, ransomware attacks, supply-chain attacks, software bugs, server malfunctions, software or hardware failures, loss or unavailability of data or other information technology assets, adware, telecommunications failures, earthquakes, fires, floods, natural disasters, and other similar threats.

Individuals or entities may attempt to penetrate the security of our platform, or of our network or systems, and to cause harm to our business operations, including by misappropriating our proprietary information or that of our customers, employees and business partners or to cause interruptions of our products and platform. In particular, cyberattacks and other malicious internet-based activity continue to increase in frequency and in magnitude generally, and cloud-based companies have been

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targeted in the past. In addition to threats from traditional computer hackers, malicious code, software vulnerabilities, supply chain attacks and vulnerabilities through our third-party partners, employees theft or misuse, password spraying, phishing, smishing, vishing, credential stuffing and denial-of-service attacks, we also face threats from sophisticated organized crime, nation-state, and nation-state supported actors who engage in attacks (including advanced persistent threat intrusions) that add to the risk to our systems (including those hosted on AWS or other cloud services), internal networks, our customers' systems and the information that they store and process. Ransomware and cyber extortion attacks, including those perpetrated by organized criminal threat actors, nation-states, and nation-state-supported actors, are becoming increasingly prevalent and severe and can lead to significant interruptions in our operations, loss of data and income, reputational harm, and diversion of

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funds. Extortion payments may alleviate or reduce the negative impact of a ransomware attack, but we may be unwilling or unable to make such payments due to, for example, applicable laws or regulations prohibiting such payments. Because the techniques used to access, disrupt or sabotage devices, systems and networks change frequently and may not be recognized until launched against a target, we may be required to make further investments over time to protect data and infrastructure as cybersecurity threats develop, evolve and grow more complex over time. We may also be unable to anticipate these techniques, and we may not become aware in a timely manner of any security breach or incident, which could exacerbate any damage we experience.

Additionally, we depend upon our employees and contractors to appropriately handle confidential and sensitive data, including customer data, and to deploy our IT resources in a safe and secure manner that does not expose our network systems to security breaches or incidents or the loss, alteration, unavailability, or other unauthorized processing of data. We have been and expect to be subject to cybersecurity threats and incidents, including denial-of-service attacks, employee errors or individual attempts to gain unauthorized access to information systems. We also continue to incorporate AI solutions and features into our platform, which may result in security incidents or otherwise increase cybersecurity risks. Further, AI technologies may be used in connection with certain cybersecurity attacks, resulting in heightened risks of security breaches and incidents. Any data security incidents, including internal malfeasance or inadvertent disclosures by our employees or a third party's fraudulent inducement of our employees to disclose information, unauthorized access or usage, virus the introduction of viruses or similar other malicious code or any other breach or incident or disruption of our platform, systems, or networks or those of our service providers, such as AWS, could result in loss, corruption, unavailability, or other unauthorized processing of confidential information, and any such event, or the perception that it has occurred, may result in damage to our reputation, erosion of customer trust, loss of customers, litigation, regulatory investigations, fines, penalties and other liabilities. For example, in June and August 2022, we became aware that threat actors had conducted sophisticated social engineering campaigns against some of our employees after having obtained employee names and cell phone numbers from unknown sources. The attack identified in August, which involved smishing text messages that purported to be from our IT department, resulted in the threat actor obtaining some of our employees' credentials and access to certain data of approximately 209 customers out of our total customer base of approximately 270,000 at that time. We notified and worked with our affected customers. We also notified appropriate regulators and addressed their questions about the incident. We also took steps to remediate the incident, including enhancing our security training, improving our two factor authentication requirements, implementing additional layers of control within our VPN, reducing access to certain internal applications and tools, and increasing the refresh frequency for access to certain internal applications. Industry reports indicate that the threat actors also attacked other technology, telecommunication and cryptocurrency companies.

Furthermore, we are required to comply with laws and regulations that require us to maintain the security of personal information and we may have contractual and other legal obligations to notify customers, regulators, government agencies, impacted individuals or other relevant stakeholders of security breaches. Such disclosures are costly, and the disclosures or the failure to comply with such requirements could lead to adverse consequences. If we (or a third party upon whom we rely) experience a security incident or are perceived to have experienced a security incident, we may experience adverse consequences. These consequences may include: government enforcement actions and other actions or proceedings (for example, investigations, audits, and inspections), and related fines, penalties, required remedial actions, or other obligations and liabilities; additional reporting requirements and/or oversight; restrictions on processing or transferring data (including personal data); claims, demands, and litigation (including class claims); indemnification obligations; monetary fund diversions; interruptions in our operations (including availability of data); financial loss and other similar harms. Actual and perceived security incidents and attendant consequences could also lead to negative publicity and reputational harm, may cause our customers to lose confidence in the effectiveness of our security measures and require us to expend significant capital and other resources to respond to and/or mitigate the security incident. Accordingly, if our cybersecurity measures or

those of AWS or our service providers fail to protect against unauthorized access, attacks (which may include sophisticated cyberattacks), or if our employees or contractors compromise or the mishandling of mishandle data, by our employees and contractors, then our reputation, customer trust, business, results of operations and financial condition could be adversely affected.

While we maintain errors, omissions and cyber liability insurance policies covering certain security and privacy damages, we cannot be certain that our existing insurance coverage will continue to be available on acceptable terms or will be

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available, and in sufficient amounts, to cover the potentially significant losses that may result from a security incident or breach or that the insurer will not deny coverage as to any future claim.

We substantially rely upon AWS to operate our platform, and any disruption of or interference with our use of AWS would adversely affect our business, results of operations and financial condition.

We outsource a substantial majority of our cloud infrastructure to AWS, which hosts our products and platform. Our customers need to be able to reliably access our platform, without material interruption or degradation of performance. AWS runs its own platform that we access, and we are, therefore, vulnerable to service interruptions at AWS. We have experienced, and expect that we may experience interruptions, delays and outages in service and availability in the future due to a variety of factors, including infrastructure changes, human or software errors, website hosting disruptions and capacity constraints.

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Capacity constraints could be caused by a number of potential causes, including technical failures, natural disasters, public health epidemics or pandemics (such as COVID-19), fraud or security attacks. In addition, if our security, or that of AWS, is compromised, our products or platform are unavailable, or if our users are unable to use our products within a reasonable amount of time or at all, any one of which may be due to circumstances beyond our control, then our business, results of operations and financial condition could be adversely affected. In some instances, we may encounter difficulties or otherwise not be able to identify the cause or causes of these performance problems within a period of time acceptable to our customers. It may become increasingly difficult to maintain and improve our platform performance and to troubleshoot performance issues, especially during peak usage times, as our products become more complex and the usage of our products increases. To the extent that we do not effectively address capacity constraints, either through AWS or alternative providers of cloud infrastructure, or other factors that may result in interruptions, delays and outages in service and availability of our products and/or services, our business, results of operations and financial condition may be adversely affected. In addition, if Amazon requires that we comply with unfavorable terms in order to continue our use of AWS or if Amazon implements any changes in its service levels for AWS, the changes may adversely affect our ability to meet our customers' requirements, result in negative publicity which could harm our reputation and brand and may adversely affect the usage of our platform.

The substantial majority of the services we use from AWS are for cloud-based server capacity and, to a lesser extent, storage and other optimization offerings. AWS enables us to order and reserve server capacity in varying amounts and sizes distributed across multiple regions. We access AWS infrastructure through standard IP connectivity protocols. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. AWS may terminate the agreement if we fail to cure a breach of the agreement within 30 days of our being notified of the breach and, in some cases, AWS may suspend the agreement immediately for cause upon notice. Although we expect that we could procure similar services from other third parties, if any of our arrangements with AWS are terminated, we could experience interruptions to our platform and encounter difficulties in our ability to make our products reliably accessible by customers, as well as delays and additional expenses in procuring, implementing, and transitioning to alternative cloud infrastructure services. Any of the above circumstances or events may harm our reputation, erode customer trust, cause customers to stop using or reducing their usage of our products, discourage them from renewing their contracts, impair our ability to increase revenue from existing customers, impair our ability to grow our customer base, subject us to financial penalties and liabilities under our service level agreements and otherwise harm our business, results of operations and financial condition.

Our actual or perceived failure to comply with increasingly stringent laws, regulations and contractual obligations relating to privacy, data protection and data security could harm our reputation and subject us to significant fines and liability or loss of business.

We and our customers are subject to numerous domestic (for example, the California Consumer Privacy Act of 2018 ("CCPA")) and foreign (for example, the General Data Protection Regulation ("GDPR") in the European Union ("EU")) privacy, data protection and data security laws and regulations that restrict the collection, use, disclosure and processing of personal information, including financial and health data. These laws and regulations are expanding globally, evolving, are being tested in courts, may result in increasing regulatory and public scrutiny of our practices relating to personal information and may increase our exposure to regulatory enforcement action, sanctions and litigation. The breadth and depth of changes in data protection obligations has required significant time and resources, including a review of our technology and systems currently in use against the requirements of GDPR.

The CCPA (as amended by the California Privacy Rights Act of 2020) imposes obligations on businesses to which it applies. These obligations include, but are not limited to, providing specific disclosures in privacy notices and affording California residents (both consumers and employees) certain rights related to their personal information. The CCPA allows for statutory fines for noncompliance. In addition, the California Privacy Rights Act of 2020 ("CPRA"), which became enforceable as of January 1, 2023, expanded the CCPA protections for consumers and employees. Similar laws have been enacted or been proposed at the state and federal levels. For example, Connecticut, Utah, Virginia and Colorado have each passed laws similar to but different from the CCPA that took effect in 2023; Florida, Montana, Oregon and CPRA Texas have enacted similar legislation that becomes effective in 2024; Tennessee, Delaware, New Jersey and Iowa have taken or passed such a law that will take effect in 2023, 2025; and Indiana has enacted similar legislation that

will become effective in 2026. If we become subject to new privacy, data protection and data security laws, the risk of enforcement action against us could increase because we may become subject to additional obligations, and the number of individuals or entities that can initiate actions against us may increase, including individuals, via a private right of action, and state actors.

Outside the United States, an increasing number of laws, regulations, and industry standards apply to privacy, data protection and data security. For example, the GDPR, the United Kingdom's Data Protection Act 2018 ("UK GDPR") and the new Swiss Federal Act on Data Protection, impose strict requirements for processing the personal information of individuals protected by the legislation, whether their data is processed within or outside the European Economic Area ("EEA"), the United Kingdom ("UK") and Switzerland, respectively (such jurisdictions, collectively, "Europe"). For example, the GDPR imposes significant requirements regarding the processing of individuals' personal information, including in relation to transparency, lawfulness of processing, individuals' privacy rights, compliant contracting, data minimization, data breach notification, data re-usage, data retention, security of processing and international data transfers. Under the GDPR and UK GDPR, government regulators may impose temporary or definitive bans on data processing or data transfers, require a company to delete data, as

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well as impose significant fines, potentially ranging up to 20 million Euros under the GDPR, 17.5 million GBP under the UK GDPR, or 4% of a company's worldwide revenue, whichever is higher. Further, individuals may initiate compensation claims or litigation related to our processing of their personal information. Other privacy laws in Europe impose strict requirements around marketing communications and the deployment of cookies on users' devices. As another example, Brazil's General Data Protection Law (Lei Geral de Proteção de Dados Pessoais, or "LGPD") (Law No. 13,709/2018) may apply to our operations. The LGPD broadly regulates processing of personal information of individuals in Brazil and imposes compliance obligations and penalties comparable to those of the GDPR. Additionally, we expect an increase in the regulation of the use of AI and ML in products and services. For example, in Europe, the proposed Artificial Intelligence Act ("AI Act"), once adopted, could impose onerous obligations related to the development, placing on the market and use of AI-related systems. We may have to change our business practices to comply with obligations under these or other new and evolving regimes.

Further, the interpretation and application of new domestic and foreign laws and regulations in many cases is uncertain, and our legal and regulatory obligations in such jurisdictions are subject to frequent and unexpected changes, including the potential for various regulatory or other governmental bodies to enact new or additional laws or regulations, to issue rulings that invalidate prior laws or regulations, or to increase penalties significantly. For example, the EU's Digital Services Act, and Digital Markets Act and Data Act recently entered into force, whereas proposed laws in Europe include force. Also, the Artificial Intelligence Act and UK Parliament is currently debating the Data Act. Protection and Digital Information (No. 2) Bill which, if enacted, will introduce certain changes to the UK's data protection laws.

Similarly, with our registration as an interconnected VoIP provider for certain products with the Federal Communications Commission ("FCC"), we also must comply with privacy laws associated with customer proprietary network information ("CPNI") rules in the United States. If we fail or are perceived to have failed to maintain compliance with these requirements,

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we could be subject to regulatory audits, civil and criminal penalties, fines and breach of contract claims, as well as reputational damage, which could impact the willingness of customers to do business with us.

In addition to our legal obligations, our contractual obligations relating to privacy, data protection and data security have become increasingly stringent due to changes in laws and regulations and the expansion of our offerings. Certain privacy, data protection and data security laws, such as the GDPR and the CCPA, require our customers to impose specific contractual restrictions on their service providers. In addition, we support customer workloads that involve the processing of protected health information and are required to sign business associate agreements with customers that subject us to requirements under the federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009, as well as state laws that govern health information.

Our actual or perceived failure to comply with laws, regulations, contractual commitments, or other actual or asserted obligations, including certain industry standards, regarding privacy, data protection and data security could lead to costly legal action, adverse publicity, significant liability, inability to process data, and decreased demand for our services, which could adversely affect our business, results of operations and financial condition.

As a cumulative example of these risks, because our primary data processing facilities are in the United States, we have experienced hesitancy, reluctance, or refusal by European or multinational customers to continue to use our services due to the potential risks posed as a result of the Court of Justice's July 2020 ruling in the "Schrems II" case, as well as related guidance from regulators. regulators and the recent enforcement action against Meta by the Irish Data Protection Commission. For example, absent appropriate safeguards or other circumstances, the GDPR and laws in Switzerland and the UK generally restrict the transfer of personal information to countries outside of the EEA, Switzerland and the UK such as the United States, that the European Commission does not consider as providing an adequate level of privacy, data protection and data security. States. On March 25, 2022, the United States and EU announced an "agreement in principle" to replace the EU-U.S. Privacy Shield transfer framework with the Trans-Atlantic Data Privacy Framework. Progress has since been made towards the establishment of this as a valid transfer mechanism with President Biden's issuance of the Executive Order Enhancing Safeguards for United States Signals Intelligence Activity in October 2022. Additionally, on December 13, 2022 July 10, 2023, the European Commission published a draft adopted its adequacy decision for the EU-U.S. Data Privacy Framework. Based on this decision, personal information can flow from the level of EU to U.S. companies participating in the EU-U.S. Data Privacy Framework without having to put in place additional data protection of personal data safeguards. We are certified under the EU-U.S. Data Privacy Framework, but this framework has not yet been established, the UK Extension to the EU-U.S. Data Privacy Framework, and the Swiss-U.S. Data Privacy Framework. If we cannot implement and maintain a valid mechanism for cross-border data transfers, we and our customers may face increased exposure to regulatory actions, substantial fines, and injunctions against

processing or transferring personal information from Europe or elsewhere. The inability to **import transfer** personal information to the United States could significantly and negatively impact our business operations; limit our ability to collaborate with parties that are subject to data privacy and security laws; or require us to increase our personal information processing capabilities in Europe and/or elsewhere at significant expense. **We and our customers are at risk of enforcement actions during such time we continue to require data transfers from Europe for the provision of our services.** In addition, outside of Europe, other jurisdictions have proposed and enacted laws relating to cross-border data transfer or requiring personal information, or certain subcategories of personal information, to be stored in the jurisdiction of origin. If we are unable to increase our data processing capabilities and storage in Europe and other countries to limit or eliminate the need for data transfers out of Europe and other applicable countries quickly enough, and **other** valid solutions for personal information transfers to the United States or other countries are not available or are difficult to implement in the interim, we will likely face continuing reluctance from European and multinational customers to use our services and increased exposure to regulatory actions, substantial fines and injunctions against processing or transferring personal information across borders.

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Evolving laws, regulations, and other actual and asserted obligations relating to privacy, data protection, and data security, **as well as any new or evolving obligations relating to the use of AI and ML technologies**, could reduce demand for our platform, increase our costs, impair our ability to grow our business, or restrict our ability to store and process data or, in some cases, impact our ability to offer our service in some locations and may subject us to liability. Further, in view of new or modified federal, state or foreign laws and regulations, industry standards, contractual obligations and other actual and asserted obligations, or any changes in their interpretation, we may find it necessary or desirable to fundamentally change our business activities and practices or to expend significant resources to modify our practices and platform and otherwise adapt to these changes. We may be unable to make such changes and modifications in a commercially reasonable manner or at all, and our ability to develop new products and features could be limited.

We could incur substantial costs in protecting or defending our intellectual property rights, and any failure to protect our intellectual property could adversely affect our business, results of operations and financial condition.

Our success depends, in part, on our ability to protect our brand and the proprietary methods and technologies that we develop under patent and other intellectual property laws. We rely on a combination of patents, copyrights, trademarks, service marks, trade secret laws and other intellectual property laws, contractual provisions, and internal processes, procedures, and controls in an effort to establish, maintain, enforce, and protect our intellectual property and proprietary rights. However, the steps we take to protect our intellectual property may be inadequate. While we have been issued patents in the United States and other countries and have additional patent applications pending, we may be unable to obtain patent protection for the technology covered in our patent applications. In addition, any patents issued to us in the future may not provide us with

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competitive advantages or may be successfully challenged by third parties. Further, the laws of some countries do not protect intellectual property or proprietary rights to the same extent as the laws of the United States, and mechanisms for enforcement of such rights in some foreign countries may be inadequate. To the extent we expand our international activities, our exposure to unauthorized copying and use of our products and proprietary information may increase. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our technology and intellectual property.

We also rely, in part, on contractual confidentiality obligations we impose on our business partners, employees, consultants, advisors, customers and others in our efforts to protect our proprietary technology, processes and methods. These obligations may not effectively prevent unauthorized disclosure or use of our confidential information, and it may be possible for unauthorized parties to copy or access our software or other proprietary technology or information, or to develop similar products independently without **our us** having an adequate remedy for unauthorized use or disclosure of our confidential information. In addition, others may independently discover our trade secrets and proprietary information, and in these cases, we may not be able to assert any trade secret rights against those parties.

We may be required to spend significant resources to monitor, enforce, maintain, and protect our intellectual property and proprietary rights. Litigation brought to protect and enforce our intellectual property or proprietary rights could be costly, time-consuming and distracting to management, result in a diversion of significant resources, or the narrowing or invalidation of portions of our intellectual property. Our efforts to enforce our intellectual property or proprietary rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of such rights. Our failure to meaningfully protect our intellectual property and proprietary rights, could have an adverse effect on our business, results of operations and financial condition.

We have been sued and may, in the future, be sued by third parties for alleged infringement of their intellectual or other proprietary rights, which could adversely affect our business, results of operations and financial condition.

There is considerable patent and other intellectual property development activity in our industry. We may also introduce or acquire new products or technologies, including in areas where we historically have not participated, which could increase our exposure to intellectual property infringement claims brought by third parties. Our future success depends, in part, on not infringing the intellectual property or proprietary rights of others and we may be unaware of such rights that may cover some or all of our technology or intellectual property. We have from time to time been subject to claims that our products or platform and underlying technology are infringing upon third-party intellectual property or proprietary rights. We may be subject to such claims in the future and we may be found to be infringing upon such rights. Any claims or litigation could cause us to incur significant expenses (including settlement payments and costs associated with litigation) and, if successfully asserted against us, could require that we pay substantial damages or ongoing royalty payments, prevent us from offering our products, or require that we comply with other unfavorable terms.

Additionally, our agreements with customers and other third parties typically include indemnification or other provisions under which we agree to indemnify or are otherwise liable to them for losses suffered or incurred by them as a result of claims of intellectual property infringement. Although we typically limit our liability with respect to such obligations

through such agreements, we may still incur substantial liability related to our indemnification obligations.

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Regardless of the merits or ultimate outcome of any claims of infringement, misappropriation, or violation of intellectual or other proprietary rights that have been or may be brought against us or that we may bring against others, these types of claims, disputes, and lawsuits are time-consuming and expensive to resolve, divert management's time and attention, and could harm our reputation. Litigation is inherently unpredictable and we cannot predict the timing, nature, controversy or outcome of disputes brought against us or assure you that the results of any of these actions will not have an adverse effect on our business, results of operations or financial condition.

Our use of open source software could negatively affect our ability to sell our products and subject us to possible litigation.

Our products and platform incorporate open source software, and we expect to continue to incorporate open source software in our products and platform in the future. Few of the licenses applicable to open source software have been interpreted by courts, and there is a risk that these licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our products and platform. Although we have implemented policies to regulate the use and incorporation of open source software into our products and platform, we cannot be certain that we have not incorporated open source software in our products or platform in a manner that is inconsistent with such policies. If we fail to comply with open source licenses, we may be subject to certain requirements, including requirements that we offer our products that incorporate the open source software for no cost, that we make available the source code for any modifications or

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derivative works we create based upon, incorporating or using the open source software and that we license such modifications or derivative works under the terms of applicable open source licenses. If an author or other third party that distributes such open source software were to allege that we had not, or have not, complied with the terms and conditions of the license for such open source software, we could be required to incur significant legal expenses defending against such allegations and could be subject to significant damages, enjoined from generating revenue from customers using products that contained the open source software and required to comply with onerous conditions or restrictions on these products. In any of these events, we and our customers could be required to seek licenses from third parties in order to continue offering our products and platform and to re-engineer our products or platform or discontinue offering our products to customers in the event re-engineering cannot be accomplished on a timely basis. Any of the foregoing could require us to devote additional research and development resources to re-engineer our products or platform, damage our reputation, give rise to increased scrutiny regarding our use of open source software, result in customer dissatisfaction and may adversely affect our business, results of operations and financial condition.

We rely on technology and intellectual property of third parties, the loss of which could limit the functionality of our products and disrupt our business.

We use technology and intellectual property licensed from third parties in certain of our products and our platform, and we expect to license additional third-party technology and intellectual property in the future. Licensed technology and intellectual property may not continue to be available on commercially reasonable terms, or at all. The loss of the right to license and distribute third-party technology could limit the functionality of our products or platform and could require us to redesign our products or platform. In addition, if the third-party technology and intellectual property we use has errors, security vulnerabilities, or otherwise malfunctions, the functionality of our products and platform may be negatively impacted, our customers may experience reduced service levels, and our business may be adversely affected.

For example, we outsource a substantial majority of our cloud infrastructure to AWS, which hosts our products and platform. Our customers need to be able to reliably access our platform, without material interruption or degradation of performance. AWS runs its own platform that we access, and we are, therefore, vulnerable to service interruptions at AWS. We have experienced, and expect that we may experience interruptions, delays and outages in service and availability in the future due to a variety of factors, including infrastructure changes, human or software errors, website hosting disruptions and capacity constraints. Capacity constraints could be caused by a number of potential causes, including technical failures, natural disasters, public health epidemics or pandemics, fraud or security attacks. In addition, if our security, or that of AWS, is compromised, our products or platform become unavailable, or if our users are unable to use our products within a reasonable amount of time or at all, any one of which may be due to circumstances beyond our control, then our business, results of operations and financial condition could be adversely affected. In some instances, we may encounter difficulties or otherwise not be able to identify the cause or causes of these performance problems within a period of time acceptable to our customers. It may become increasingly difficult to maintain and improve our platform performance and to troubleshoot performance issues, especially during peak usage times, as our products become more complex and the usage of our products increases. To the extent that we do not effectively address capacity constraints, either through AWS or alternative providers of cloud infrastructure, or through other factors that may result in interruptions, delays and outages in service and availability of our products and/or services, our business, results of operations and financial condition may be adversely affected. In addition, if Amazon.com, Inc. ("Amazon") requires that we comply with unfavorable terms in order to continue our use of AWS or if Amazon implements any changes in its service levels for AWS, the changes may adversely affect our ability to meet our customers' requirements, result in negative publicity which could harm our reputation and brand and may adversely affect the usage of our platform.

The substantial majority of the services we use from AWS are for cloud-based reserve service capacity and, to a lesser extent, storage and other optimization offerings. AWS enables us to order and reserve service capacity in varying amounts and sizes distributed across multiple regions. We access AWS infrastructure through standard IP connectivity protocols. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. AWS may terminate the agreement if we fail to cure a breach of the agreement within 30 days of our being notified of the breach and, in some cases, AWS may suspend the agreement immediately for cause upon notice. Although we expect that we could procure similar services from other third parties, if any of our arrangements with AWS are terminated, we could experience interruptions to our platform and encounter difficulties in our ability to make our products reliably accessible by customers, as well as delays and additional expenses in procuring, implementing, and transitioning to alternative cloud infrastructure services. Any of the above circumstances or events may harm our reputation, erode customer trust, cause customers to stop using or

reduce their usage of our products, discourage customers from renewing their contracts, impair our ability to increase revenue from existing customers, impair our ability to grow our customer base, subject us to financial penalties and liabilities under our service level agreements and otherwise harm our business, results of operations and financial condition.

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The use of AI technologies in our platform and our business may not produce the desired benefits, and may result in increased liability, reputational harm, or other adverse consequences.

We continue to incorporate additional AI solutions and features into our platform and our business, including CustomerAI, and these solutions and features may become more important to our operations or to our future growth over time. We expect to rely on AI solutions and features to help drive future growth in our business, but there can be no assurance that we will realize the desired or anticipated benefits from AI. Our investments in AI solutions and features have and may continue to negatively impact our cost of revenue and gross margins, particularly for our Segment business, until we are able to increase revenue enough to offset these investments. We may also fail to properly implement or market our AI solutions and features. Our competitors or other third parties may incorporate AI into their products, offerings, and solutions more quickly or more successfully than us, which could impair our ability to compete effectively and adversely affect our results of operations. Our ability to effectively implement and market our AI solutions and features will depend, in part, on our ability to attract and retain employees with AI expertise, and we expect significant competition for professionals with the skills and technical knowledge that we will require. Additionally, our offerings based on AI may expose us to additional claims, demands and proceedings by private parties and regulatory authorities and subject us to legal liability as well as brand and reputational harm. For example, our business, financial condition and results of operations may be adversely affected if content or recommendations that AI solutions or features assist in producing are or are alleged to be deficient, inaccurate, or biased, or if such content, recommendations, solutions, or features or their development or deployment (including the collection, use, or other processing of data used to train or create such AI solutions or features) are found to have or alleged to have infringed upon or misappropriated third-party intellectual property rights or violated applicable laws, regulations, or other actual or asserted legal obligations to which we are or may become subject. The legal, regulatory, and policy environments around AI are evolving rapidly, and we may become subject to new and evolving legal and other obligations. These and other developments may require us to make significant changes to our use of AI, including by limiting or restricting our use of AI, and which may require us to make significant changes to our policies and practices, which may necessitate expenditure of significant time, expense, and other resources. AI also presents emerging ethical issues, and if our use of AI becomes controversial, we may experience brand or reputational harm.

Risks Related to Legal and Regulatory Matters

Certain of our products are subject to telecommunications-related regulations, and future legislative or regulatory actions could adversely affect our business, results of operations and financial condition.

As a provider of communications products, we are subject to existing or potential FCC regulations relating to privacy, telecommunications, consumer protection and other requirements. In addition, the extension of telecommunications regulations to our non-interconnected VoIP services could result in additional federal and state regulatory obligations and taxes. We are also in discussions with certain jurisdictions regarding potential sales and other taxes for prior periods that we may owe. In the event any of these jurisdictions disagree with management's assumptions and analysis, the assessment of our tax exposure could differ materially from management's current estimates, which may increase our costs of doing business and negatively affect the prices our customers pay for our services. 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 products. For example, on January 25, 2023, we received a "cease-and-desist" letter from the FCC related to reported fraudulent traffic on our messaging platform. We subsequently removed the identified traffic. In response to written questions from the FCC, we sent a follow-up letter to the agency on February 10, 2023 detailing our fraud mitigation practices and various planned improvements to reduce future risks. There has been no further communication from the agency on this matter. Any enforcement action by the FCC, which may be a public process, would hurt our reputation in the industry, could erode customer trust, possibly impair our ability to sell our VoIP, and other telecommunications products and/or other services to customers and could adversely affect our business, results of operations and financial condition.

Certain of our products are subject to a number of FCC regulations and laws that are administered by the FCC. Among others, we must comply (in whole or in part) with:

- the Communications Act of 1934, as amended, which regulates communications services and the provision of such services;
- the Telephone Consumer Protection Act, which limits the use of automatic dialing systems for calls and texts, artificial or prerecorded voice messages and fax machines;
- the Communications Assistance for Law Enforcement Act, which requires covered entities to assist law enforcement in undertaking electronic surveillance;

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- requirements to safeguard the privacy of certain customer information;
- payment of annual FCC regulatory fees and contributions to FCC-administered funds based on our interstate and international revenues; and
- rules pertaining to access to our services by people with disabilities and contributions to the Telecommunications Relay Services fund.

In addition, Congress and the FCC are attempting to mitigate the prevalence of robocalls by requiring participation in a technical standard called **SHAKEN/STIR**, Signature-based Handling of Asserted Information Using toKENs ("SHAKEN") and Secure Telephone Identity Revisited ("STIR") (together, "SHAKEN/STIR"), which allows voice carriers to authenticate caller ID, prohibiting malicious spoofing. The FCC also has open proceedings relating to robocalls and robotexts. While we do not currently expect the FCC to require more than the robocall and robotexting measures that we have started to implement, if the FCC were to implement new regulations or requirements that limited the types of customers allowed to use our platform or overly burdensome requirements for our customers, those actions could limit the customers that we are able to serve.

Similarly, in May 2021, the Biden Administration issued an Executive Order requiring federal agencies to implement additional information technology security measures, including, among other things, requiring agencies to adopt multifactor authentication and encryption for data at rest and in transit to the maximum extent consistent with Federal records laws and other applicable laws. The National Institute of Standards and Technology issued a Secure Software Development Framework (SSDF) on September 30, 2021 and Software Supply Chain Security Guidance (incorporating the SSDF), on February 4, 2022, and on March 7, 2022, the Office of Management and Budget directed federal agencies to incorporate both documents into their software lifecycle and acquisitions practices. The Executive Order also may lead to the development of additional secure software development practices and/or criteria for a consumer software labeling program, the criteria which will reflect a baseline level of secure practices, for software that is developed and sold to the U.S. federal government. Software developers will be required to provide visibility into their software and make security data publicly available. Due to this Executive Order, federal agencies may require us to modify our cybersecurity practices and policies, thereby increasing our compliance costs. If we are unable to meet the requirements of the Executive Order, our ability to work with the U.S. government may be impaired and may result in a loss of revenue.

If we do not comply with any current or future rules or regulations that apply to our business, we could be subject to substantial fines and penalties, and we may have to restructure our offerings, exit certain markets or raise the price of our products. In addition, any uncertainty regarding whether particular regulations apply to our business, and how they apply, could increase our costs or limit our ability to grow.

As we continue to expand internationally, we have become subject to telecommunications laws and regulations in the foreign countries where we offer our products. Internationally, we currently offer our products in more than 180 countries and territories.

Our international operations are subject to country-specific governmental regulation and related actions that have increased and will continue to increase our compliance costs or impact our products and platform or prevent us from offering or providing our products in certain countries. Moreover, the regulation of CPaaS companies like us is continuing to evolve internationally and many existing regulations may not fully contemplate the CPaaS business model or how they fit into the communications regulatory framework. As a result, interpretation and enforcement of regulations often involve significant uncertainties. In many countries, including those in the European Union, a number of our products or services are subject to licensing and communications regulatory requirements which increases the level of scrutiny and enforcement by regulators. Future legislative, regulatory or judicial actions impacting CPaaS services could also increase the cost and complexity of compliance and expose us to liability. For example, in some countries, some or all of the services we offer are not considered regulated telecommunications services, while in other countries they are subject to telecommunications regulations, including but not limited to payment into universal service funds, licensing fees, provision of emergency services, provision of information to support emergency services and number portability. Failure to comply with these regulations could result in our Company being issued remedial directions to undertake independent audits and implement effective systems, processes and practices to ensure compliance, significant fines or being prohibited from providing telecommunications services in a jurisdiction.

In addition, from time to time we implement Know-Your-Customer and/or Know-Your-Traffic related processes in the jurisdictions in which we operate, which may create friction for our customers, require management attention, and increase our compliance costs.

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Moreover, certain of our products may be used by customers located in countries where voice and other forms of Internet Protocol ("IP") communications may be illegal or require special licensing or in countries on a U.S. embargo list. Even where our products are reportedly illegal or become illegal or where users are located in an embargoed country, users in those countries may be able to continue to use our products in those countries notwithstanding the illegality or embargo. We may be subject to penalties or governmental action if consumers continue to use our products in countries where it is illegal to do so or if we use a local partner to provide services in a country and the local partner does not comply with applicable governmental regulations. Any such penalties or governmental action may be costly and may harm our business and damage our brand and reputation. We may be required to incur additional expenses to meet applicable international regulatory requirements or be

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required to raise the prices of services, or restructure or discontinue those services if required by law or if we cannot or will not meet those requirements. Any of the foregoing could adversely affect our business, results of operations and financial condition.

If we are unable to obtain or retain geographical, mobile, regional, local or toll-free numbers, or to effectively process requests to port such numbers in a timely manner due to industry regulations, our business and results of operations may be adversely affected.

Our future success depends in part on our ability to obtain allocations of geographical, mobile, regional, local and toll-free direct inward dialing numbers or phone numbers as well as short codes and alphanumeric sender IDs (collectively, "Numbering Resources") in the United States and foreign countries at a reasonable cost and without overly burdensome restrictions. Our ability to obtain allocations of, assign and retain Numbering Resources depends on factors outside of our control, such as applicable regulations, the practices of authorities that administer national numbering plans or of network service providers from whom we can provision Numbering Resources, such as offering these

Numbering Resources with conditional minimum volume call level requirements, the cost of these Numbering Resources and the level of overall competitive demand for new Numbering Resources.

In addition, in order to obtain allocations of, assign and retain Numbering Resources in the EU or certain other regions, we are often required to be licensed by local telecommunications regulatory authorities, some of which have been increasingly monitoring and regulating the categories of Numbering Resources that are eligible for provisioning to our customers. We have obtained licenses and are in the process of obtaining licenses in various countries in which we do business, but in some countries, the regulatory regime around provisioning of Numbering Resources is unclear, subject to change over time, and sometimes may conflict from jurisdiction to jurisdiction. Furthermore, these regulations and governments' approach to their enforcement, as well as our products and services, are still evolving and we may be unable to maintain compliance with applicable regulations, or enforce compliance by our customers, on a timely basis or without significant cost. Also, compliance with these types of regulation may require changes in products or business practices that result in reduced revenue. Due to our or our customers' assignment and/or use of Numbering Resources in certain countries in a manner that violates applicable rules and regulations, we have been subjected to government inquiries and audits, and may in the future be subject to significant penalties or further governmental action, and in extreme cases, may be precluded from doing business in that particular country. We have also been forced to reclaim Numbering Resources from our customers as a result of certain events of non-compliance. These reclamations result in loss of customers, loss of revenue, reputational harm, erosion of customer trust, and may also result in breach of contract claims, all of which could have an adverse effect on our business, results of operations and financial condition.

Due to their limited availability, there are certain popular area code prefixes that we generally cannot obtain. Our inability to acquire or retain Numbering Resources for our operations may make our voice and messaging products less attractive to potential customers in the affected local geographic areas. In addition, future growth in our customer base, together with growth in the customer bases of other providers of cloud communications, has increased, which increases our dependence on needing sufficiently large quantities of Numbering Resources. It may become increasingly difficult to source larger quantities of Numbering Resources as we scale and we may need to pay higher costs for Numbering Resources, and Numbering Resources may become subject to more stringent regulation or conditions of usage such as the registration and on-going compliance requirements discussed above.

Additionally, in some geographies, we support number portability, which allows our customers to transfer their existing phone numbers to us and thereby retain their existing phone numbers when subscribing to our voice and messaging products. Transferring existing numbers is a manual process that can take up to 15 business days or longer to complete. Any delay that we experience in transferring these numbers typically results from the fact that we depend on network service providers to transfer these numbers, a process that we do not control, and these network service providers may refuse or substantially delay the transfer of these numbers to us. Number portability is considered an important feature by many potential customers, and if we fail to reduce any related delays, then we may experience increased difficulty in acquiring new customers.

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United States federal and state legislation and international laws impose certain obligations on the senders of commercial emails, which could minimize the effectiveness of our platform, and establish financial penalties for non-compliance, which could increase the costs of our business.

The Federal Controlling the Assault of Non-Solicited Pornography and Marketing Act of 2003 (the "CAN-SPAM Act") establishes certain requirements for commercial email messages and transactional email messages and specifies penalties for the transmission of email messages that are intended to deceive the recipient as to source or content. Among other things, the CAN-SPAM Act, obligates the sender of commercial emails to provide recipients with the ability to "opt-out" of receiving future commercial emails from the sender. In addition, some states have passed laws regulating commercial email practices that are

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significantly more restrictive and difficult to comply with than the CAN-SPAM Act. For example, Utah and Michigan prohibit the sending of email messages that advertise products or services that minors are prohibited by law from purchasing or that contain content harmful to minors to email addresses listed on specified child protection registries. Some portions of these state laws may not be preempted by the CAN-SPAM Act. In addition, certain non-U.S. jurisdictions in which we operate have enacted laws regulating the sending of email that are more restrictive than U.S. laws. For example, some foreign laws prohibit sending broad categories of email unless the recipient has provided the sender advance consent (or "opted-in" "opted-in") to receipt of such email. If we were found to be in violation of the CAN-SPAM Act, applicable state laws governing email not preempted by the CAN-SPAM Act or foreign laws regulating the distribution of email, whether as a result of violations by our customers or our own acts or omissions, we could be required to pay large penalties, which would adversely affect our financial condition, significantly harm our business, injure our reputation and erode customer trust. The terms of any injunctions, judgments, consent decrees or settlement agreements entered into in connection with enforcement actions or investigations against our company in connection with any of the foregoing laws may also require us to change one or more aspects of the way we operate our business, which could impair our ability to attract and retain customers or could increase our operating costs.

Our customers' and other users' violation of our policies or other misuse of our platform to transmit unauthorized, offensive or illegal messages, spam, phishing scams, and website links to harmful applications or for other fraudulent or illegal activity could damage our reputation, and we may face a risk of litigation and liability for illegal activities on our platform and unauthorized, inaccurate, or fraudulent information distributed via our platform.

The actual or perceived improper sending of text messages or voice calls may subject us to potential risks, including liabilities or claims relating to consumer protection laws and regulatory enforcement, including fines. For example, the Telephone Consumer Protection Act of 1991 ("TCPA") restricts telemarketing and the use of automatic SMS text messages without explicit customer consent. TCPA violations can result in significant financial penalties, as businesses can incur penalties or criminal fines imposed by the FCC or be fined up to \$1,500 per violation through private litigation or state attorneys general or other state actor enforcement. Class action suits are the most common method for private

enforcement. This has resulted in civil claims against our company and requests for information through third-party subpoenas. The scope and interpretation of the laws that are or may be applicable to the delivery of text messages or voice calls are continuously evolving and developing. If we do not comply with these laws or regulations or if we become liable under these laws or regulations due to the failure of our customers to comply with these laws by obtaining proper consent, we could face direct liability.

Moreover, certain customers may use our platform to transmit unauthorized, offensive or illegal messages, calls, spam, phishing scams, and website links to harmful applications, reproduce and distribute copyrighted material or the trademarks of others without permission, and report inaccurate or fraudulent data or information. These issues also arise with respect to a portion of those users who use our platform on a free trial basis or upon initial use. These actions are in violation of our policies, in particular, our Acceptable Use Policy. For example, on January 24, 2023 January 25, 2023, we received a cease-and-desist letter from the FCC alleging that we were transmitting illegal robocall traffic that originated from an independent software vendor customer and their end user customer. In response, we have suspended the customers' accounts and are in the process of responding to sent the FCC regarding a follow-up letter on February 10, 2023 detailing our fraud mitigation practices and various planned improvements to reduce future risks. There has been no further communication from the steps we are taking to prevent new or renewing customers from using our network to transmit illegal robocalls. agency on this matter. Failure to respond appropriately to the FCC's allegations could allow domestic carriers to begin blocking all voice traffic transmitting from our network. However, our efforts to defeat spamming attacks, illegal robocalls and other fraudulent activity will not prevent all such attacks and activity. Such use of our platform could damage our reputation and we could face claims for damages, regulatory enforcement, copyright or trademark infringement, defamation, negligence, or fraud. Furthermore, enacting more stringent controls on our customers' use of our platform to combat such violations of our Acceptable Use Policy could increase friction for our legitimate customers and decrease their use of our platform.

Our customers' and other users' promotion of their products and services through our platform might not comply with federal, state, and foreign laws or of contractual requirements imposed by carriers, such as the CTIA Shortcode Agreement, The Campaign Registry, and associated policies. We rely on contractual representations made to us by our customers that their use

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of our platform will comply with our policies and applicable law, including, without limitation, our email and messaging policies. Although we retain the right to verify that customers and other users are abiding by certain contractual terms, our Acceptable Use Policy and our email and messaging policies and, in certain circumstances, to review their email, messages and distribution lists, our customers and other users are ultimately responsible for compliance with our policies, and we do not systematically audit our customers or other users to confirm compliance with our policies. We cannot predict whether our role in facilitating our customers' or other users' activities will result in violations of carrier policies which could result in fines, administrative delays, or service interruptions. We also cannot predict whether our role in facilitating our customers' or other users' activities would expose us to liability under applicable state or federal law, or whether that possibility could become more likely if changes to current laws regulating content moderation, such as Section 230 of the Communications Decency Act, are enacted. If we are found liable for our customers' or other users' activities, we could be required to pay fines or penalties, redesign business methods or otherwise expend resources to remedy any damages caused by such actions and to avoid future liability.

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Additionally, our products may be subject to fraudulent usage, including but not limited to revenue share fraud, domestic traffic pumping, subscription fraud, premium text message scams and other fraudulent schemes. Although our customers are required to set passwords or personal identification numbers to protect their accounts, third parties have in the past been, and may in the future be, able to access and use their accounts through fraudulent means. Furthermore, spammers attempt to use our products to send targeted and untargeted spam messages. We cannot be certain that our efforts to defeat spamming attacks will be successful in eliminating all spam messages from being sent using our platform. In addition, a cybersecurity breach of our customers' systems could result in exposure of their authentication credentials, unauthorized access to their accounts or fraudulent calls on their accounts, any of which could adversely affect our business, results of operations and financial condition.

Changes in laws and regulations related to the Internet or changes in the Internet infrastructure itself may diminish the demand for our products, and could adversely affect our business, results of operations and financial condition.

The future success of our business depends upon the continued use of the Internet as a primary medium for commerce, communications and business applications. Federal, state or foreign government bodies or agencies have in the past adopted, and may in the future adopt, laws or regulations affecting the use of the Internet as a commercial medium. Changes in these laws or regulations could require us to modify our products and platform in order to comply with these changes. In addition, government agencies or private organizations have imposed and may impose additional taxes, fees or other charges for accessing the Internet or commerce conducted via the Internet. These laws or charges could limit the growth of Internet-related commerce or communications generally or result in reductions in the demand for Internet-based products and services such as our products and platform. In particular, a re-adoption

The current legislative and regulatory landscape regarding the regulation of "network neutrality" the Internet is subject to uncertainty. For example, in January 2018, the FCC released an order that repealed the "open Internet rules, in the United States," often known as "net neutrality," which President Biden supported during his campaign, could affect the services used by us and our customers. California's state network neutrality law went into effect on March 10, 2021. A temporary injunction preventing implementation of In response to this decision California and a similar law in Vermont expired on April 20, 2022, but a challenge to that law remains pending. A number of other states have adopted implemented their own net neutrality rules which mirrored parts of the repealed federal regulations. In October 2023, the FCC voted to begin the process of reinstating substantially all of the net neutrality rules that had been in place prior to the 2018 repeal. We cannot predict the actions the FCC may take, whether any new FCC order or are adopting state initiatives regulating providers will be modified, overturned, or considering vacated by legal action, federal legislation, or executive actions the FCC itself, or the degree to which further regulatory action – or inaction – may adversely affect our business. Should the FCC not reinstate net neutrality or if state initiatives codifying similar protections are modified, overturned, or vacated, internet service providers may be able to limit our users' ability to access our platform or make our platform a less attractive alternative to our

competitors' applications. On the other hand, if limits are imposed on the types of traffic that would regulate U.S. domestic carriers can carry over their broadband networks, it could adversely affect the conduct amount of broadband providers. carrier-originated traffic that we carry. In a related regulatory context, while the EU requires equal access to internet content, under its Digital Single Market initiative the EU may impose additional requirements that could increase our costs. If new FCC, EU, or other rules directly or inadvertently impose costs on online providers like our business, our expenses may rise. Were any of these outcomes to occur, our ability to retain existing users or attract new users may be impaired, our costs may increase, and our business may be significantly harmed.

In addition, the use of the Internet as a business tool could be adversely affected due to delays in the development or adoption of new standards and protocols to handle increased demands of Internet activity, security, reliability, cost, ease-of-use, accessibility and quality of service. The performance of the Internet and its acceptance as a business tool has been adversely affected by "viruses," "worms," and similar malicious programs. If the use of the Internet is reduced as a result of these or other issues, then demand for our products could decline, which could adversely affect our business, results of operations and financial condition.

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Our global operations subject us to potential liability under export control, economic trade sanctions, anti-corruption, and other laws and regulations, and such violations could impair our ability to compete in international markets and could subject us to liability for compliance violations.

Certain of our products and services may be subject to export control and economic sanctions laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control as well as similar laws and regulations in other countries in which we do business. Exports of our products and the provision of our services must be made in compliance with these requirements. Although we We take precautions to prevent our products and services from being provided in violation of such laws, laws; however, we are aware of previous exports of certain of our products to a small number of persons and organizations that are the subject of U.S. sanctions or are located in countries or regions subject to U.S. sanctions. If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including: the possible loss of export privileges; fines, which may be imposed on us and responsible employees or managers; and, in extreme cases, the incarceration of responsible employees or managers. Any change in trade protection laws, policies, export, sanctions and other regulatory requirements affecting trade and investments, shift in the enforcement or scope of existing regulations, or change in the countries, governments, persons or technologies targeted by such regulations, could also result in decreased use of our products and services, or in our decreased ability to export our products or provide our services to existing or prospective customers with international operations. Any decreased use of our products and services or limitations on our ability to export our products and provide our services could adversely affect our business, results of operations and financial condition.

Further, we incorporate encryption technology into certain of our products. Various countries regulate the import of certain encryption technology, including through import permitting and licensing requirements, and have enacted laws that could limit our customers' ability to import our products into those countries. Encryption products and the underlying technology may also be subject to export control restrictions. Governmental regulation of encryption technology and regulation of exports of encryption products, or our failure to obtain required approval for our products, when applicable, could harm our international sales and adversely affect our revenue. Compliance with applicable regulatory requirements regarding the export of our products and provision of our services, including with respect to new releases of our products and services, may create delays in the introduction of our products and services in international markets, prevent our customers with international

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operations from deploying our products and using our services throughout their globally-distributed systems or, in some cases, prevent the export of our products or provision of our services to some countries altogether.

We are also subject to U.S. and foreign anti-corruption and anti-bribery laws, including the FCPA, the UK Bribery Act 2010, and other anti-corruption laws and regulations in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and generally prohibit companies, their employees, agents, representatives, business partners, and third parties third-party intermediaries from directly or indirectly authorizing, offering, or providing, improper payments or things of value to recipients in the public or private sector, and also require that we maintain accurate books and records and adequate internal controls and compliance procedures designed to prevent violations. We sometimes leverage third parties to sell our products and conduct our business abroad. We, our employees, agents, representatives, business partners and third-party intermediaries may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities and we may be held liable for the corrupt or other illegal activities of these employees, agents, representatives, business partners or third-party intermediaries even if we do not explicitly authorize such activities. We cannot assure you It is possible that none of our employees, agents, representatives, business partners or third-party intermediaries will could fail to comply with our policies and applicable laws and regulations, for which we may ultimately be held responsible. Any allegations or violation of the FCPA or other applicable anti-bribery and anti-corruption laws and anti-money laundering laws could result in whistleblower complaints, sanctions, settlements, prosecution, enforcement actions, significant fines and penalties, damages, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions, or suspension or debarment from government contracts, all of which may have an adverse effect on our reputation, business, results of operations, and prospects. Responding to any investigation or action will would likely result in a materially significant diversion of management's attention and resources, and significant defense costs and other professional fees.

The standards imposed by private entities and inbox service providers to regulate the use and delivery of email have in the past interfered with, and may continue to interfere with, the effectiveness of our platform and our ability to conduct business.

From time to time, private entities and inbox service providers impose requirements that impact our and our customers' ability to use and deliver email. For example, some of our IP addresses have become, and we expect will continue to be, listed with one or more denylisting entities due to the messaging practices of our customers and other users. We

may be at an increased risk of having our IP addresses denylisted due to our scale and volume of email processed, compared to our smaller

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competitors. There can be no guarantee that we will be able to successfully remove ourselves from those lists. Because we fulfill email delivery on behalf of our customers, denylisting of this type could undermine the effectiveness of our customers' transactional email, email marketing programs and other email communications, all of which could have a material negative impact on our business, financial condition and results of operations. In the first quarter of 2024, Google and Yahoo began enforcing new email sender requirements aimed at sender authentication, including Domain-based Message Authentication, Reporting and Conformance ("DMARC") record requirements. We expect that these requirements will require us to devote time and resources toward compliance efforts, and these or similar authentication requirements imposed in the future could result in reduced volumes for our email products and could adversely affect our business, financial condition and results of operations.

Additionally, inbox service providers can block emails from reaching their users or categorize certain emails as "promotional" emails and, as a result, direct them to an alternate or "tabbed" section of the recipient's inbox. The implementation of new or more restrictive policies by inbox service providers may make it more difficult to deliver our customers' emails, particularly if we are not given adequate notice of a change in policy or struggle to update our platform or services to comply with the changed policy in a reasonable amount of time. If the open rates of our customers' emails are negatively impacted by the actions of inbox service providers to block or categorize emails then customers may question the effectiveness of our platform and cancel their accounts. This, in turn, could harm our business, financial condition and results of operations.

Any legal proceedings or claims against us could be costly and time-consuming to defend and could harm our reputation regardless of the outcome.

We are and may in the future become subject to legal proceedings and claims that arise in the ordinary course of business, such as disputes or employment claims made by our current or former employees. Any litigation, whether meritorious or not, could harm our reputation, will increase our costs and may divert management's attention, time and resources, which may in turn seriously harm our business. Insurance might not cover such claims or the costs to defend such claims, might not provide sufficient payments to cover all the costs to resolve one or more such claims, and might not continue to be available on terms acceptable to us. A claim brought against us that is uninsured or underinsured could result in unanticipated costs and could seriously harm our business. If we are required to make substantial payments or implement significant changes to our operations as a result of legal proceedings or claims, our business, results of operations and financial condition could be adversely affected.

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Risks Related to Financial and Accounting Matters

We face exposure to foreign currency exchange rate fluctuations, and such fluctuations could adversely affect our business, results of operations and financial condition.

As our international operations expand, our exposure to the effects of fluctuations in currency exchange rates grows. For example, global geopolitical events, such as the war in Ukraine and conflict in the Middle East, economic events, public health epidemics and pandemics such as the COVID-19 pandemic, trade tariff developments and other events have caused global economic uncertainty and variability in foreign currency exchange rates. While we have primarily transacted with customers and business partners in U.S. dollars, we have also conducted business in currencies other than the U.S. dollar. We expect to significantly expand the number of transactions with customers that are denominated in foreign currencies in the future as we continue to expand our business internationally. We also incur expenses for some of our network service provider costs outside of the United States in local currencies and for employee compensation and other operating expenses at our non-U.S. locations in the respective local currency. Fluctuations in the exchange rates between the U.S. dollar and other currencies could result in an increase to the U.S. dollar equivalent of such expenses.

In addition, our international subsidiaries maintain net assets that are denominated in currencies other than the functional operating currencies of these entities. As we continue to expand our international operations, we become more exposed to the effects of fluctuations in currency exchange rates. Accordingly, changes in the value of foreign currencies relative to the U.S. dollar can affect our results of operations due to transactional and translational remeasurements. As a result of such foreign currency exchange rate fluctuations, it could be more difficult to detect underlying trends in our business and results of operations. In addition, to the extent that fluctuations in currency exchange rates cause our results of operations to differ from our expectations or the expectations of our investors and securities analysts who follow our stock, the trading price of our Class A common stock could be adversely affected.

We recently have implemented a program to hedge transactional exposure against the Euro, and may do so in the future with respect to other foreign currencies. We also use derivative instruments, such as foreign currency forward and option contracts,

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to hedge certain exposures to fluctuations in foreign currency exchange rates. The use of such hedging activities may not offset any or more than a portion of the adverse financial effects of unfavorable movements in foreign exchange rates over the limited time the hedges are in place. Moreover, the use of hedging instruments may introduce additional risks if we are unable to structure effective hedges with such instruments.

We have incurred substantial indebtedness that may decrease our business flexibility, access to capital, and/or increase our borrowing costs, and we may still incur substantially more debt, which may adversely affect our operations and financial results.

As of December 31, 2022 December 31, 2023, we had \$1.0 billion of indebtedness outstanding (excluding intercompany indebtedness). Our indebtedness may:

- limit our ability to obtain additional financing to fund future working capital, capital expenditures, business opportunities, acquisitions or other general corporate requirements;
- require a portion of our cash flows to be dedicated to debt service payments instead of other purposes, thereby reducing the amount of cash flows available for working capital, capital expenditures, business opportunities, acquisitions and other general corporate purposes;
- increase our vulnerability to adverse changes in general economic, industry and competitive conditions;
- expose us to the risk of increased interest rates as certain of our borrowings, including borrowings under a future revolving credit facility, may be at variable rates of interest;
- place us at a competitive disadvantage compared to our less leveraged competitors; and
- increase our cost of borrowing.

In addition, the indenture which governs our 3.625% notes due 2029 (the "2029 Notes") and our 3.875% notes due 2031 (the "2031 Notes," and together with the 2029 Notes, the "Notes") contains restrictive covenants that limit our ability to engage in activities that may be in our long-term best interest. Our failure to comply with those covenants could result in an event of default which, if not cured or waived, could permit the trustee, or permit the holders of the Notes to cause the trustee, to declare

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all or part of the Notes to be immediately due and payable or to exercise any remedies provided to the trustee and/or result in the acceleration of substantially all of our indebtedness. Any such event would adversely affect our business, results of operations and financial condition.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems and may be forced to reduce or delay investments and capital expenditures, or expenditures. We may be forced to sell assets, seek additional capital, or restructure or refinance our indebtedness, including the Notes. Our ability to restructure or refinance our debt will depend on, among other things, the condition of the capital markets and our financial condition at such time. Any refinancing of our debt could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. The terms of existing or future debt instruments and the indenture that governs the Notes may restrict us from adopting some of these alternatives. In addition, any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a reduction of our credit rating, which could harm our ability to incur additional indebtedness and our financial condition. In the absence of such cash flows and resources, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt service and other obligations.

We may require additional capital to support our business, and this capital might not be available on acceptable terms, if at all.

We intend to continue to make investments to support our business and may require additional funds. In particular, we may seek additional funds to develop new products and enhance our platform and existing products, expand our operations, including our sales and marketing organizations and our presence outside of the United States, improve our infrastructure or acquire complementary businesses, technologies, services, products and other assets. In addition, we may use a portion of our cash to satisfy tax withholding and remittance obligations related to outstanding restricted stock units. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our Class A common stock and Class B common stock. Any debt financing that we may

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secure in the future could involve restrictive covenants relating to our capital raising activities, our ability to repurchase stock, and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities. We may not be able to obtain additional financing on terms favorable to us, if at all, particularly during times of market volatility and general economic instability. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth, scale our infrastructure, develop product enhancements and to respond to business challenges could be significantly impaired, and our business, results of operations and financial condition may be adversely affected.

We rely on assumptions and estimates to calculate certain of our key metrics, and real or perceived inaccuracies in such metrics could adversely affect our reputation and our business.

We rely on assumptions and estimates to calculate certain of our key metrics, such as Active Customer Accounts and Dollar-Based Net Expansion Rate. Our key metrics are not based on any standardized industry methodology and are not necessarily calculated in the same manner or comparable to similarly titled measures presented by other companies. Similarly, our key metrics may differ from estimates published by third parties or from similarly titled metrics of our competitors due to differences in methodology. The numbers that we use to calculate Active Customer Accounts and Dollar-Based Net Expansion Rate are based on internal data. While these numbers are based on what we believe to be reasonable judgments and estimates for the applicable period of measurement, there are inherent challenges in measuring usage. We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy. If investors or analysts do not perceive our metrics to be accurate representations of our business, or if we discover material inaccuracies in our metrics, our reputation, business, results of operations, and financial condition would be harmed.

If our estimates or judgments relating to our critical accounting policies prove to be incorrect, our results of operations could be adversely affected.

The preparation of financial statements in conformity with U.S. GAAP generally accepted accounting principles ("GAAP") requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, as provided in Part II, Item 2.7, "Management's Discussion and Analysis of Financial Condition and Results of Operations." The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities and equity, and the amount of revenue and expenses that are not readily apparent from other sources. Assumptions and estimates used in preparing our consolidated financial statements include those related to revenue recognition and business combinations. Our results of

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operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our Class A common stock.

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

A change in accounting standards or practices may have a significant effect on our results of operations and may even affect our reporting of transactions completed before the change is effective. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and may occur in the future. Changes to existing rules or the questioning of current practices may adversely affect our reported financial results or the way we conduct our business. For example, Accounting Standards Codification ("ASC") 842, "Leases" that became effective January 1, 2019, had a material impact on our consolidated financial statements as described in detail in Note 2 to the consolidated financial statements included in our Annual Report on Form 10-K for the year ended December 31, 2020. Adoption of these types of accounting standards and any difficulties in implementation of changes in accounting principles, including the ability to modify our accounting systems, could cause us to fail to meet our financial reporting obligations, which result in regulatory discipline and harm investors' confidence in us.

If our goodwill or intangible assets become impaired, we may be required to record a significant charge to earnings.

We review our intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is required to be tested for impairment at least annually. As of December 31, 2022 December 31, 2023, we carried a net \$6.1 billion \$5.6 billion of goodwill and intangible assets. An adverse change in market conditions or significant changes in accounting conclusions, particularly if such changes have the effect of changing one of our critical assumptions or estimates, could result in a change to the estimation of fair value that could result in an impairment charge to our goodwill or intangible assets. For example, during the year ended December 31, 2023, we recorded an impairment of intangible assets related to Segment totaling

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approximately \$285.7 million, as described in additional detail in Note 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Any such charges may adversely affect our results of operations.

Purchase price accounting in connection with our acquisitions requires estimates that may be subject to change and could impact our consolidated financial statements and future results of operations and financial position.

Pursuant to the acquisition method of accounting, the purchase price we pay for our acquired businesses is allocated to the underlying tangible and intangible assets acquired and liabilities assumed based on their respective fair market values with any excess purchase price allocated to goodwill. The acquisition method of accounting is dependent upon certain valuations and other studies that are preliminary. Differences between these preliminary estimates and the final acquisition accounting may occur, and these differences could have a material impact on the consolidated financial statements and the combined company's future results of operations and financial position.

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

As a public company, we are required to maintain internal control over financial reporting and to report any material weaknesses in such internal control. Section 404 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") requires that we evaluate and determine the effectiveness of our internal control over financial reporting and provide a management report on internal control over financial reporting. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected on a timely basis.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. In addition, if we acquire additional businesses, we may not be able to successfully integrate the acquired operations and technologies and maintain internal control over financial reporting, if applicable, in accordance with the requirements of Section 404 of the Sarbanes-Oxley Act. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we are required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, and could have a material and adverse effect on our business, results of operations and

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financial condition and could cause a decline in the trading price of our **Class A** common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the New York Stock Exchange.

Risks Related to Tax Matters

Our ability to use our net operating losses and certain other tax attributes to offset future taxable income and taxes may be subject to certain limitations.

As of **December 31, 2022**, **December 31, 2023** we had U.S. federal, state and foreign net operating loss carryforwards ("NOLs"), of **\$3.7 billion**, **\$3.4 billion**, **\$2.7 billion**, **\$2.6 billion** and **\$498.5 million**, **\$1.0 billion**, respectively. Utilization of these NOL carryforwards depends on our future taxable income, and there is risk that a portion of our existing NOLs could expire unused, and that even if we achieve profitability, the use of our unexpired NOLs would be subject to limitations, which could materially and adversely affect our operating results. U.S. federal NOLs generated in taxable years beginning before January 1, 2018, may be carried forward only 20 years to offset future taxable income, if any. Under current law, U.S. federal NOLs generated in taxable years beginning after December 31, 2017, can be carried forward indefinitely, but the deductibility of such U.S. federal NOLs in taxable years beginning after December 31, 2020, is limited to 80% of taxable income. It is uncertain if and to what extent various states will conform to federal law.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the "Code"), and corresponding provisions of state law, a corporation that undergoes an "ownership change" (generally defined as a greater than 50-percentage-point cumulative change (by value) in the equity ownership of certain stockholders over a rolling three-year period) is subject to limitations on its ability to utilize its pre-change NOLs and other pre-change tax attributes to offset post-change taxable income and taxes. Our existing NOLs and other tax attributes may be subject to limitations arising from previous ownership changes, and if we undergo an ownership change in the future, our ability to utilize NOLs could be further limited by Section 382 of the Code. Future changes in our stock ownership, some of which may be outside of our control, could result in an ownership change under Section 382 of the Code. In addition, at the state level, there may be periods during which the use of NOL carryforwards is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

We may have additional tax liabilities, which could harm our business, results of operations and financial condition.

Significant judgments and estimates are required in determining our provision for income taxes and other tax liabilities. Our tax expense may be impacted, for example, if tax laws change or are clarified to our detriment or if tax authorities successfully challenge the tax positions that we take, such as, for example, positions relating to the **arms-length** pricing standards for our intercompany transactions and our indirect tax positions. In determining the adequacy of our provision for

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income taxes, we assess the likelihood of adverse outcomes that could result if our tax positions were challenged by the Internal Revenue Service ("IRS"), and other tax authorities. Should the IRS or other tax authorities assess additional taxes as a result of examinations, we may be required to record charges to operations that could adversely affect our results of operations and financial condition.

We conduct operations in many tax jurisdictions throughout the United States and internationally. In many of these jurisdictions, non-income-based taxes, such as sales, **VAT**, **GST**, **value-added tax**, **goods and services tax**, and telecommunications taxes, are assessed on our operations or our sales to customers. We are subject to indirect taxes, and may be subject to certain other taxes, in some of these jurisdictions. We collect certain telecommunications-based taxes from our customers in certain jurisdictions, and we expect to continue expanding the number of jurisdictions in which we will collect these taxes in the future.

Many states are also pursuing legislative expansion of the scope of goods and services that are subject to sales and similar taxes as well as the circumstances in which a vendor of goods and services must collect such taxes. Following the United States Supreme Court decision in *South Dakota v. Wayfair, Inc.*, states are now free to levy taxes on sales of goods and services based on an "economic nexus," regardless of whether the seller has a physical presence in the state. Any additional fees and taxes levied on our services by any state may adversely impact our results of operations.

Historically, we have not billed or collected taxes in certain jurisdictions and, in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"), GAAP, we have recorded a provision for our tax exposure in these jurisdictions when it is both probable that a liability has been incurred and the amount of the exposure can be reasonably estimated. We reserved \$29.1 \$18.0 million and \$20.6 \$22.2 million for domestic jurisdictions and jurisdictions outside of the United States, respectively, on our December 31, 2022 December 31, 2023 balance sheet for these tax payments. These estimates include several key assumptions, including, but not limited to, the taxability of our products, the jurisdictions in which we believe we have nexus or a permanent establishment, and the sourcing of revenues to those jurisdictions. In the event these jurisdictions challenge our assumptions and analysis, our actual exposure could differ materially from our current estimates and reserves. If the actual payments we

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make to any jurisdiction exceed the accrual in our balance sheet, our results of operations would be harmed. In addition, some customers may question the incremental tax charges and seek to negotiate lower pricing from us, which could adversely affect our business, results of operations and financial condition.

We are in discussions with certain jurisdictions regarding potential sales and other indirect taxes for prior periods that we may owe. If any of these jurisdictions disagree with management's management's assumptions and analysis, the assessment of our tax exposure could differ materially from management's management's current estimates. For example, in 2020, San Francisco City and County has assessed us for \$38.8 million in taxes, including interest and penalties, which exceeded the \$11.5 million we had accrued for that assessment. We have paid the full amount as required by law, under protest and the payment made in excess of the accrued amount is reflected as a deposit on our balance sheet. We believe, however, that this assessment is incorrect and, after failing to reach a settlement, filed a lawsuit on May 27, 2021 contesting the assessment. The trial is expected We entered into a settlement agreement in November 2023 pursuant to be which San Francisco paid us \$18.0 million in the summer settlement of 2023. However, litigation is uncertain and a ruling against us may adversely affect our financial position and results of operations, claims.

Our global operations and structure subject us to potentially adverse tax consequences.

We generally conduct our global operations through subsidiaries and report our taxable income in various jurisdictions worldwide based upon our business operations in those jurisdictions. In particular, our intercompany relationships are subject to complex transfer pricing regulations administered by taxing authorities in various jurisdictions. Also, our tax expense could be affected depending on the applicability of withholding and other taxes (including withholding and indirect taxes on software licenses and related intercompany transactions) under the tax laws of certain jurisdictions in which we have business operations. The relevant revenue and taxing authorities may disagree with positions we have taken generally, or our determinations as to the value of assets sold or acquired or income and expenses attributable to specific jurisdictions. If such a disagreement were to occur, and our position were not sustained, we could be required to pay additional taxes, interest and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows and lower overall profitability of our operations.

Changes in, or interpretations of, tax rules and regulations or our tax positions may materially and adversely affect our income taxes.

We are subject to income taxes in both the United States and numerous international jurisdictions. Significant judgment is required in determining our worldwide provision for income taxes. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. Our effective tax rates may fluctuate significantly on a quarterly basis because of a variety of factors, including changes in the mix of earnings and losses in countries with differing statutory tax rates, changes in our business or structure, changes in tax laws that could adversely impact our income or non-income taxes or the expiration of or disputes about certain tax agreements in a particular country. We are subject to audit by various tax authorities. In accordance with U.S. GAAP, we recognize income tax benefits, net of required valuation allowances and accrual for uncertain tax positions. Although we believe our tax estimates are reasonable, the final

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determination of tax audits and any related litigation could be materially different than that which is reflected in historical income tax provisions and accruals. Should additional taxes be assessed as a result of an audit or litigation, an adverse effect on our results of operations, financial condition and cash flows in the period or periods for which that determination is made could result.

Changes in tax laws (including in response to the COVID-19 pandemic) or tax rulings, or changes in interpretations of existing laws, could cause us to be subject to additional income-based taxes and non-income taxes (such as payroll, sales, use, value-added, digital tax, net worth, property, and goods and services taxes), which in turn could materially affect our financial position and results of operations. Additionally, new, changed, modified, or newly interpreted or applied tax laws could increase our customers' and our compliance, operating and other costs, as well as the costs of our products. For example, on August 16, 2022, the Inflation Reduction Act of 2022 was signed into law, with tax provisions primarily focused on implementing a 15% minimum tax on global adjusted financial statement income, effective for tax years beginning after December 31, 2022, and a 1% excise tax on share repurchases occurring after December 31, 2022, which may affect resulted in an excise tax payable calculated on our 2023 share repurchase program. repurchases.

As another example, beginning in 2022, the Tax Cuts and Jobs Act of 2017 (the "Tax Act") eliminates the option to deduct research and development expenditures currently and requires taxpayers to capitalize and amortize them over five or fifteen years pursuant to Section 174 of the Code, which impacts our effective tax rate and our cash tax liability in 2022, 2023. If the requirement to capitalize Section 174 expenditures is not modified by legislation, it may also will continue to impact our effective tax rate and our cash tax liability in the future. liability.

On October 8, 2021, the Organization for Economic Co-operation and Development (the "OECD") announced the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (the "Framework") which agreed to a two-pillar solution

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to address tax challenges arising from digitalization of the economy. On December 20, 2021, the OECD released Pillar Two Model Rules defining the global minimum tax rules, which contemplate a minimum tax rate of 15%. The OECD continues to release additional guidance for large multinational companies. On December 15, 2022, the European Union (EU) Member States formally adopted the EU's Pillar Two Directive and various countries have enacted or are in the process of enacting legislation on these rules and the Framework calls for law enactment by OECD and G20 members to take effect after 2023. These changes, when enacted by various countries in which we do business, may increase our taxes in these countries. Changes to these and other areas in relation to international tax reform, including future actions taken by foreign governments in response to the Tax Act, could increase uncertainty and may adversely affect our tax rate and cash flow in future years.

Risks Related to Ownership of Our Class A Common Stock

The trading price of our Class A common stock has been volatile and may continue to be volatile, and you could lose all or part of your investment.

The trading price of our Class A common stock has, and may continue to, fluctuate significantly in response to numerous factors, many of which are beyond our control and may not be related to our operating performance, including:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the trading prices and trading volumes of technology stocks;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- sales of shares of our Class A common stock by our stockholders;
- our issuance or repurchase of shares of our Class A common stock;
- short selling of our Class A common stock or related derivatives;
- failure of securities analysts to maintain coverage of us, changes in financial estimates or the publication of reports or statements by securities analysts or investors who follow our company, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections or our failure to meet those projections;

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- announcements by us or our competitors of new products or services;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- changes in laws, industry standards, regulations or regulatory enforcement in the United States or internationally;
- actual or anticipated changes in our results of operations or fluctuations in our results of operations; operations or actual or anticipated changes in our strategy or the organization of our business;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or other proprietary rights;
- announced or completed acquisitions of businesses, products, services or technologies by us or our competitors;
- changes in accounting standards, policies, guidelines, interpretations or principles;

- any significant change in our management, including changes in the pace of hiring; and

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- general political, social, economic and market conditions, in both domestic and foreign markets, including the effects of the COVID-19 pandemic and the war in Ukraine and conflict in the Middle East on the global economy, changes in the labor shortages, market, supply chain disruptions, inflation, increased interest rates, instability and volatility in the banking and financial services sector, and slow or negative growth of our markets.

In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources.

Substantial future sales of shares of our Class A common stock could cause the market price of our Class A common stock to decline.

The market price of our Class A common stock could decline as a result of substantial sales of our Class A 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. Additionally, the shares of Class A common stock subject to outstanding options and restricted stock unit awards under our equity incentive plans and the shares reserved for future issuance under our equity incentive plans will become eligible for sale in the public market upon issuance, subject to applicable insider trading policies.

Until no later than June 2023, the dual class structure of our common stock has the effect of concentrating voting power with those stockholders who held our capital stock prior to the completion of our initial public offering, including our directors, executive officers and their respective affiliates. This limits the ability of holders of our Class A common stock to influence corporate matters, including the election of directors, amendments of our organizational documents and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval.

Our Class B common stock has 10 votes per share, and our Class A common stock has one vote per share. As of December 31, 2022, our directors, executive officers and their respective affiliates, held in the aggregate 21.0% of the voting power of our capital stock. Because of the 10-to-one voting ratio between our Class B common stock and Class A common stock, the holders of our Class B common stock collectively will be able to significantly influence certain matters submitted to our stockholders for approval until the earlier of (i) June 28, 2023 (the "Final Conversion Date"), or (ii) the date the holders of two-thirds of our Class B common stock elect to convert the Class B common stock to Class A common stock. While our dual class common stock structure remains in effect, this concentrated voting power limits your ability to influence corporate matters, including the election of directors, amendments of our organizational documents, and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval. In addition, our dual class structure may prevent or discourage unsolicited acquisition proposals or offers for our capital stock that you may feel are in your best interest as one of our stockholders.

Future transfers by holders of Class B common stock will generally result in those shares converting to Class A common stock, subject to limited exceptions, such as certain transfers effected for estate planning purposes. The conversion of Class B common stock to Class A common stock will have the effect, until no later than the Final Conversion Date, of increasing the relative voting power of those holders of Class B common stock who retain their shares in the long term.

We may not realize the anticipated long-term stockholder value of our share repurchase program, and any failure to repurchase our Class A common stock after we have announced our intention to do so may negatively impact our stock price.

In February 2023, we announced that our board of directors authorized the repurchase of up to \$1.0 billion \$1.0 billion of our Class A common stock from time to time through a share repurchase program. Under our share repurchase program, we may make repurchases of stock through a variety of methods, including open share market purchases, privately negotiated purchases, entering into one or more confirmations or other contractual arrangements with a financial institution counterparty to effectuate one or more accelerated stock repurchase contracts, forward purchase contracts or similar derivative instruments, Dutch auction tender offers, or through a combination of any of the foregoing, in accordance with applicable federal securities laws. Our share repurchase program terminates at 11:59 pm Pacific Time on December 31, 2024, does not obligate us to repurchase any specific number of shares, and may be suspended at any time at our discretion and without prior notice. The timing and amount of any repurchases, if any, will be subject to liquidity, stock price, market and economic conditions, compliance with applicable legal requirements such as Delaware surplus and solvency tests and other relevant factors. Any failure to repurchase stock after we have announced our intention to do so may negatively impact our reputation and investor confidence in us and may negatively impact our stock price.

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The existence of our share repurchase program could cause our stock price to be higher than it otherwise would be and could potentially reduce the market liquidity for our stock. Although our share repurchase program is intended to enhance long-term stockholder value, there is no assurance that it will do so because the market price of our Class A common stock may decline below the levels at which we repurchase shares, and short-term stock price fluctuations could reduce the effectiveness of the program.

Repurchasing our Class A common stock reduces the amount of cash we have available to fund working capital, capital expenditures, strategic acquisitions or business opportunities, and other general corporate purposes, and we may fail to realize the anticipated long-term stockholder value of any share repurchase program.

If securities or industry analysts change their recommendations regarding our Class A common stock adversely, the trading price of our Class A common stock and trading volume could decline.

The trading market for our Class A common stock is influenced by the research and reports that securities or industry analysts may publish about us, our business, our market or our competitors. If any of the analysts who cover us change their recommendation regarding our Class A common stock adversely, or provide more favorable relative recommendations about our competitors, the trading price of our Class A common stock would likely decline. If any analyst who covers us were to cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause the trading price of our Class A common stock or trading volume to decline.

Anti-takeover provisions contained in our amended and restated certificate of incorporation and second amended and restated bylaws, as well as provisions of Delaware law, could impair a takeover attempt.

Our amended and restated certificate of incorporation, second amended and restated bylaws and Delaware law contain provisions which could have the effect of rendering more difficult, delaying, or preventing an acquisition deemed undesirable by our board of directors. Among other things, our amended and restated certificate of incorporation and second amended and restated bylaws include provisions:

- authorizing "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our Class A and Class B common stock;
- limiting the liability of, and providing indemnification to, our directors and officers;
- limiting the ability of our stockholders to call and bring business before special meetings;
- providing for a dual class common stock structure in which holders of our Class B common stock have until no later than the Final Conversion Date the ability to significantly influence the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the outstanding shares of our Class A and Class B common stock, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or its assets;
- providing that our board of directors is classified into three classes of directors with staggered three-year terms;
- prohibit prohibiting stockholder action by written consent, which requires instead requiring all stockholder actions to be taken at a meeting of our stockholders;
- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our board of directors;
- controlling the procedures for the conduct and scheduling of board of directors and stockholder meetings; and
- providing for advance notice procedures that stockholders must comply with in order to nominate candidates to our board of directors or to propose matters to be acted upon at a meeting of stockholders, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

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As a Delaware corporation, we are also subject to provisions of Delaware law, including Section 203 of the Delaware General Corporation Law, which prevents certain stockholders holding more than 15% of our outstanding common stock from engaging in certain business combinations without approval of the holders of at least two-thirds of our outstanding common stock not held by such 15% or greater stockholder.

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Any provision of our amended and restated certificate of incorporation, second amended and restated bylaws or Delaware law that has the effect of delaying, preventing or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our Class A common stock.

Our second amended and restated bylaws provides provide that the Court of Chancery of the State of Delaware is the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our **second amended and restated** bylaws **provides provide** that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law:

- any derivative action or proceeding brought on our behalf;
- any action asserting a breach of fiduciary duty owed by our directors, officers, employees or our stockholders;
- any action asserting a claim against us arising under the Delaware General Corporation Law; and
- any action asserting a claim against us that is governed by the internal-affairs doctrine (the "Delaware Forum Provision").

The Delaware Forum Provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act or any other claim under the Securities Act, for which the United States District Court for the Northern District of California has sole and exclusive jurisdiction (the "Federal Forum Provision"), as we are based in the State of California. In addition, our **second amended and restated** bylaws provide that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the Delaware Forum Provision and the Federal Forum Provision; provided, however, that stockholders cannot and will not be deemed to have waived our compliance with the U.S. federal securities laws and the rules and regulations thereunder.

The Delaware Forum Provision and the Federal Forum Provision 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 or employees, which may discourage lawsuits against us and our directors, officers and employees. If a court were to find the Delaware Forum Provision and the Federal Forum Provision in our **second amended and restated** bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could seriously harm our business.

We do not expect to declare any dividends in the foreseeable future.

We have never paid dividends and we do not anticipate declaring any cash dividends to holders of our common stock in the foreseeable future. Consequently, investors may need to rely on sales of their **Class A** common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment. Investors seeking cash dividends should not purchase our **Class A** common stock.

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General Risks

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

Our business operations are subject to interruption by natural disasters, flooding, fire, power shortages, public health epidemics or pandemics, **such as COVID-19**, terrorism, political unrest, cyber-attacks, geopolitical instability, war, the effects of climate change and other events beyond our control. For example, our corporate headquarters are located in the San Francisco Bay Area, a region known for seismic activity. A significant natural disaster, such as an earthquake, fire or flood, occurring at our headquarters, at one of our other facilities or where a business partner is located could adversely affect our business, results of operations and financial condition. Further, if a natural disaster or man-made problem were to affect our service providers, this could adversely affect the ability of our customers to use our products and platform. Natural disasters, public health epidemics or pandemics, such as the COVID-19 pandemic, and geopolitical events, such as the war in Ukraine **and conflict in the Middle East**, could cause disruptions in our or our customers' businesses, national economies or the world economy as a whole.

We also rely on our network and third-party infrastructure and enterprise applications and internal technology systems for our engineering, sales and marketing, and operations activities. Although we maintain incident management and disaster

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response plans, in the event of a major disruption caused by a natural disaster or man-made problem, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our development activities, lengthy interruptions in service, breaches of data security and loss of critical data, any of which could adversely affect our business, results of operations and financial condition.

In addition, computer malware, viruses and computer hacking, fraudulent use attempts and phishing attacks have become more prevalent in our industry, have occurred on our platform in the past and may occur on our platform in the future. Though it is difficult to determine what, if any, harm may directly result from any specific interruption or attack, any failure to maintain performance, reliability, security, integrity and availability of our products and technical infrastructure to the satisfaction of our customers may harm our reputation and our ability to retain existing customers and attract new customers. In addition, global climate change could result in certain types of natural disasters occurring more frequently or with more intense effects. Any such events may result in users being subject to service disruptions or outages, and we may not be able to recover our technical infrastructure in a timely manner to maintain or resume operations, which may adversely affect our financial results.

Our reputation and/or business could be negatively impacted by ESG matters and/or our reporting of such matters.

There is an increasing focus from regulators, certain investors, and other stakeholders concerning ESG matters, both in the United States and internationally. We communicate certain ESG-related initiatives, goals, and/or commitments regarding environmental matters, diversity, responsible sourcing and social investments, and other matters in our annual **ESG Impact and DEI** Report, on our website, in our filings with the SEC, and elsewhere. These initiatives, goals, or commitments could be difficult to achieve and costly to implement. We could fail to achieve, or be perceived to fail to achieve, our ESG-related initiatives, goals, or commitments. In addition, we could be criticized for the timing, scope or nature of these initiatives, goals, or commitments, or for any revisions to them. To the extent that our required and voluntary disclosures about ESG matters increase, we could be criticized for the accuracy, adequacy, or completeness of such disclosures. Our actual or perceived failure to achieve our ESG-related initiatives, goals, or commitments could negatively impact our reputation, result in ESG-focused investors not purchasing and holding our stock, or otherwise materially harm our business.

Item 1B. *Unresolved Staff Comments*

None.

Item 1C. *Cybersecurity*

Our board of directors recognizes the critical importance of maintaining the trust and confidence of our customers, clients, business partners and employees. Our board of directors is actively involved in oversight of our risk management program, and cybersecurity represents an important component of our overall approach to enterprise risk management ("ERM").

Risk Management and Strategy

We have policies, standards, processes and practices for assessing, identifying, and managing material risk from cybersecurity threats that are integrated into our ERM systems and processes. Our cross-functional approach to cybersecurity risk management is focused on preserving the confidentiality, integrity, and availability of our information systems by identifying, preventing and mitigating cybersecurity threats and effectively responding to cybersecurity incidents when they occur. As part of this approach, we have implemented controls and procedures that provide for the prompt escalation of certain cybersecurity incidents to enable timely decisions by management regarding the public disclosure and reporting of such incidents.

Our cybersecurity program is focused on the following key areas:

- **Governance.** As discussed in more detail under the heading "Governance" below, our board of directors' oversight of cybersecurity risk is supported by our audit committee, which regularly interacts with our ERM function, our Chief Digital Officer ("CDO"), our Chief Information Security Officer ("CISO"), other members of management, and relevant committees and working groups, including management's Enterprise Risk Committee ("ERC"), Cyber Incident Task Force ("CITF"), and Security Incident Response Team ("SIRT"), in its oversight of cybersecurity-related risk.

- **Risk Assessment.** We devote significant resources and designate high-level personnel, including our ERC, which includes our Chief Legal Officer ("CLO"), our CDO, our CISO, our Vice President of Internal Audit, and our Vice President of Ethics, Compliance and Risk Management, to manage the cybersecurity risk assessment and mitigation process. We conduct

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security assessments both internally and with the assistance of third parties to identify cybersecurity threats periodically and to identify any potentially material changes in our business practices that may affect information systems that are vulnerable to such cybersecurity threats. These security assessments include identification of reasonably foreseeable internal and external risks, the likelihood and potential impact of such risks, and the sufficiency and effectiveness of existing policies, procedures, systems, and controls to manage such risks. Risk themes identified during our risk assessments guide annual cybersecurity planning activities and investments to improve security coverage, technology capabilities and processes.

- **Technical Safeguards.** We deploy, maintain, and regularly monitor the effectiveness of technical safeguards that are designed to protect our information systems from cybersecurity threats. We align our security program to recognized frameworks and industry standards. We make investments in core security capabilities, including awareness and training, identity and access, incident response, product security, cloud security, enterprise security, risk management, and supply chain risk, in order to enable us to better identify, protect, detect, respond to, and recover from evolving security threats. Our technical safeguards include firewalls, intrusion prevention and detection systems, anti-malware functionality and access controls, which are evaluated and improved through internal and external security assessments and cybersecurity threat intelligence. We regularly assess our safeguards through internal testing by our assurance teams. We also leverage external third-party testing (e.g., penetration testing, attack surface mapping, and security maturity assessments) and seek third-party certifications (e.g., SOC2, ISO, and PCI DSS). Following our risk assessments, we evaluate whether and/or how to re-design and/or enhance our safeguards to reasonably address any identified risks or gaps.

- **Incident Response and Recovery Planning.** We have established comprehensive incident response and recovery plans that address the full lifecycle of our response to a cybersecurity incident. These plans are periodically tested and evaluated.

- **Third-Party Risk Management.** We maintain a comprehensive, risk-based approach to identifying and overseeing cybersecurity risks presented by third parties, including vendors, service providers and other external users of our systems, as well as the systems of third parties that could adversely impact our business in the event of a cybersecurity incident affecting those third-party systems. We perform due diligence on vendors, service providers and other third-party users of our systems at initial onboarding and periodically thereafter. We require that third-party service providers have the ability to implement and maintain reasonable and appropriate security measures, consistent with applicable laws, in connection with their work with us, and to promptly report any actual or suspected breach of their security measures that may affect our company.

▪ **Security Awareness and Training.** Our security awareness program requires that employees and certain contractors complete comprehensive security training upon joining the company and annually thereafter. The training covers critical security topics to ensure our workforce stays informed about top-of-mind security areas, such as phishing. The training helps ensure that our personnel have the knowledge and skills required to protect our digital assets and critical data. In addition, we conduct awareness campaigns on cybersecurity threats as a means to equip our personnel with effective tools to address such threats and to communicate our evolving information security policies, standards, processes and practices.

We engage in the periodic assessment and testing of our cybersecurity policies, standards, processes and practices, including through audits, assessments, tabletop exercises, threat modeling, vulnerability testing and other exercises focused on evaluating the effectiveness of our cybersecurity measures and planning. To assist with such assessment and testing, we engage assessors, consultants, auditors, and other third parties to perform assessments on our cybersecurity measures, including for third-party testing and certifications (as described above under "Technical Safeguards"), information security maturity assessments, customer audits, and independent reviews of our information security control environment and operating effectiveness. The material results of such assessments, audits and reviews are reported to our audit committee, and we adjust our cybersecurity policies, standards, processes and practices as necessary based on the information provided.

To date, cybersecurity threats, including as a result of any previous cybersecurity incidents, have not materially affected our company, including our business strategy, results of operations, or financial condition. For additional information regarding whether any risks from cybersecurity threats, including as a result of any previous cybersecurity incidents, are reasonably likely to materially affect our company in the future, including our business strategy, results of operations, or financial condition, see Part I, Item 1A, "Risk Factors" in this Annual Report on Form 10-K.

Governance

Our board of directors, in coordination with our audit committee, oversees our ERM process, including the management of cybersecurity risks, and is responsible for monitoring and assessing strategic risk exposure. Our management team and its committees, including our ERC, our CITF, our SIRT, and our core information security operational teams, in partnership with our engineering teams, are responsible for the day-to-day management and mitigation of the material cybersecurity risks we face.

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Our board of directors administers its cybersecurity risk oversight function through our audit committee. Our audit committee receives regular presentations and reports on cybersecurity risks, which address a wide range of topics including recent developments, evolving standards, vulnerability assessments, third-party and independent reviews, the threat environment, technological trends and information security considerations arising with respect to our peers and third parties, and risks relating to cybersecurity incidents. Our board of directors receives quarterly updates from our audit committee on ERM and cybersecurity risks.

Our ERC, comprised of our CLO, our CDO, our CISO, our Vice President of Internal Audit, and our Vice President of Ethics, Compliance and Risk Management, among others, oversees our ERM activities, including cybersecurity-related risks. Our CDO and our CISO (who reports to our CDO) are primarily responsible for the assessment and management of our material risks from cybersecurity threats, working collaboratively and cross-functionally to design and implement our cybersecurity policies and processes, including those described in "Risk Management and Strategy" above, and for responding to any cybersecurity incidents. In addition, our CITF (which includes our CDO, our CISO, our CLO, and our Chief Financial Officer ("CFO")) is primarily responsible for evaluating cybersecurity incidents, gathering and assessing facts relevant to applicable regulatory reporting and disclosure obligations, making recommendations to our Chief Executive Officer and CFO regarding such disclosure, and advising our board of directors and audit committee on the effectiveness of policies and procedures related to the disclosure of cybersecurity incidents.

To facilitate our cybersecurity risk management program, multidisciplinary teams throughout our company are deployed to address cybersecurity threats and to respond to cybersecurity incidents. Through ongoing communications with these teams, our CDO, our CISO, and the SIRT monitor the detection, mitigation and remediation of cybersecurity threats and incidents in real time, and report such threats and incidents to the CITF when appropriate.

Our CDO has over 25 years of experience at technology companies and has been in the security space for over 18 years, including serving as chief security officer at a public company and leading security engineering at another public company. Our CDO also serves on the board of directors of a publicly traded cybersecurity company. Our CDO holds an undergraduate degree in electronics engineering and a graduate degree in business administration and management. Our CISO has over 18 years of experience managing cybersecurity risks in the technology industry, including serving as the acting chief security officer at a public company and holding other senior cybersecurity leadership and operational roles at other companies. Our CISO holds an undergraduate degree in computer engineering and graduate degrees in electrical engineering and business administration. Our CFO, CLO, VP of Internal Audit, and VP of Ethics, Compliance and Risk Management each hold undergraduate and/or graduate degrees in their respective fields, and have over 10 years of experience managing risks at the Company and at similar companies, including risks arising from cybersecurity threats.

Item 2. Properties

We lease all of our facilities and do not own any real property. Our headquarters, which serves as our principal offices for our business segments, is located in San Francisco, California, where we actively occupy 101,434,83,372 square feet of office space at 101 Spear Street. In May 2022, we announced our decision to become a remote-first company whereby allowing our employees would have the flexibility to work remotely on a permanent basis. As a result of this decision, in the third quarter of 2022, we permanently closed several of our office locations in the United States, including a portion of our original headquarters space. On February 13, 2023, we announced that we will be permanently closing additional office locations during 2023. The financial impact on our results of operations from closing several of our these offices in 2022 is described in Note 56 and Note 810 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

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We lease additional office space in various other locations in North America, South America, Europe and Asia. This includes our international headquarters in Dublin, Ireland, and regional offices used for business operations, sales, support, and product development. development for our business segments. Additional information regarding our lease commitments is available in Note 8 10 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

We believe that our remaining facilities are adequate and suitable for our current needs and that, should it be needed, suitable additional or alternative space will be available to accommodate our operations.

Item 3. Legal Proceedings

Refer to Note 16(b) 17(b) to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a description of our current material legal proceedings.

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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 Class A common stock ("common stock") is traded on the New York Stock Exchange under the symbol "TWLO." Our Class B common stock is neither listed nor traded. traded, and no Class B common stock is currently issued or outstanding.

Holders of Record

As of January 31, 2023 January 31, 2024, we had 279 251 holders of record of our Class A common stock and stock. There are no holders of record of our Class B common stock. The actual number of stockholders is greater than this number of holders of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

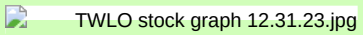
Dividend Policy

We have never declared or paid any cash dividends on our capital stock. We intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future.

Stock Performance Graph

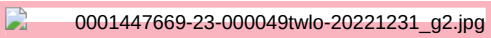
This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by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

We have presented below the cumulative five-year total return to our stockholders in comparison to the S&P 500 Index and S&P 500 Information Technology Index. An investment of \$100 (with reinvestment of all dividends) is assumed to have been made in our Class A common stock and in each respective index at the market closing price on the last trading day for the fiscal year ended December 31, 2017 December 31, 2018, and its relative performance is tracked through December 31, 2022 the last trading day for the fiscal year ended December 31, 2023. The comparisons are based on historical data and are not indicative of, nor intended to forecast, the future performance of our Class A common stock.



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Sales of Unregistered Securities

During the year ended **December 31, 2022** **December 31, 2023**, we issued 88,408 shares of our unregistered **Class A** common stock to an independent donor advised fund to further our Twilio.org philanthropic goals. The shares were "restricted securities" for purposes of Rule 144 under the Securities Act, and had an aggregate fair market value on the date of donation of **\$9.5 million** **\$5.3 million**. The foregoing transaction did not involve any underwriters, any underwriting discounts or commissions, or any public offering. We believe the offer, sale and issuance of the above shares were exempt from registration under the Securities Act by virtue of Section 4(a)(2) of the Securities Act because the issuance of the shares did not involve a public offering.

Issuer Purchases of Equity Securities

The following table summarizes the share repurchase activity for the three months ended December 31, 2023:

	Total Number of Shares Purchased ⁽¹⁾	Average Price Paid Per Share ⁽²⁾	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ⁽¹⁾	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs ⁽¹⁾	
			(In thousands)	(In thousands)	(In millions)
October 1 - 31, 2023	943	\$ 53.42	943	\$	399
November 1 - 30, 2023	758	\$ 54.16	758	\$	358
December 1 - 31, 2023	415	\$ 72.75	415	\$	328
	2,116		2,116		

⁽¹⁾ In February 2023, our board of directors authorized a share repurchase program to repurchase up to \$1.0 billion in aggregate value of our Class A common stock. Repurchases under the program can be made through open market transactions, privately negotiated transactions and other means in compliance with applicable federal securities laws, including through Rule 10b5-1 plans. We have discretion in determining the conditions under which shares may be repurchased from time to time. The program expires on December 31, 2024. Refer to Note 18 — Stockholders' Equity in Part II, Item 8, of this Annual Report on Form 10-K for additional information related to share repurchases.

⁽²⁾ Average price paid per share includes costs associated with the repurchases.

Item 6. [Reserved]

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. In addition to historical financial information, the following discussion contains forward-looking statements that are based upon current plans, expectations and beliefs that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under Part II, Item 1A, "Risk Factors" in this Annual Report on Form 10-K.

Overview

We enable businesses of all sizes to reinvent revolutionize how they engage with their customers. We have seen customers by delivering seamless, trusted and personalized customer expectations evolve over time whereas the customers have been increasingly requiring more personalized and seamless experiences when they interact with a business. We believe that these experiences are achievable if the businesses understand their customers on a deeper level and communicate with them in the manner and over the channels the customers prefer. We believe that it is no longer sufficient to think about customer engagement in separate contexts of marketing, customer support and product, at scale. Our leading customer engagement platform ("CEP") solves this problem. Our comprises communications APIs that enable developers to embed numerous forms of messaging, voice, and email interactions into their customer-facing applications, as well as software products that target specific engagement needs, including our customer data platform, digital engagement platform empowers centers, marketing campaigns and advanced account security solutions. This combination of flexible APIs and software solutions helps businesses of all sizes and across numerous industries to create the exact solutions they need to engage their customers benefit from smarter and more streamlined engagement at every step of the customer journey, through real-time, relevant, personalized communications over a customer preferred communications channel and fuel these communications with real-time comprehensive customer data. With our platform, businesses can personalize every transaction with their customers, build lasting loyalty, cut including reduced customer acquisition costs, lasting loyalty and increase increased customer lifetime value.

Our platform, which combines our highly customizable communications APIs with customer data management capabilities, allows businesses to break down data silos and build a comprehensive single source for their customer data that is organized into unique profiles that are easily accessible by all their business teams. Empowered with this information and the insights it enables, businesses using our platform can provide robust, personalized and effective communications to their customers at every stage of their customer relationships. The value proposition of our offerings has become stronger and our

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products have become more strategic to our customers as more and more businesses have prioritized building more personalized and more differentiated customer engagement experiences through digital channels.

In February 2023, we began operating our business in two business units: Communications and Data & Applications, which has since been renamed Segment. Our Communications business consists of a variety of APIs and software solutions to optimize communications between our customers and their end users. Our key Communications offerings include Messaging, Voice, Email, Flex, Marketing Campaigns, and User Identity and Authentication. Our Segment business consists of software products that enable businesses to leverage their first-party data to create unique customer profiles and achieve more effective customer engagement. Our key Segment offerings are Segment and Engage. Together, our Communications and Segment products power our customer engagement platform. We believe that our two business units are complementary and address adjacent needs and related problems for our customers. Our goal is to create a flywheel for effective customer engagement by combining Segment's user profiles with our rich Communications data to drive more personalized and intelligent customer interactions. We believe that our business unit structure enables each business unit to execute toward its respective goals with appropriate focus and independence, best positioning us to achieve our long-term plan of creating the leading customer engagement platform.

For a comprehensive overview of our business, our platform and our products refer to Part I, Item 1, "Business," included elsewhere **on** in this Annual Report on Form 10-K. As we announced on February 13, 2023, moving forward we will operate as two separate business units: Twilio Communications and Twilio Data & Applications (previously referred to as Software). For future periods, we will refer to our products and revenue that were previously termed as "Software products and revenue" as "Data & Applications products and revenue."

We have experienced substantial growth in our business since inception. Our growth has predominantly been organic and from time to time we complemented it with strategic business acquisitions. In the years ended **December 31, 2022**, **December 31, 2023**, **2021**, **2022**, and **2020**, **2021**, our revenue was **\$4.2 billion**, **\$3.8 billion**, **\$2.8 billion** and **\$1.8** **\$2.8 billion**, respectively, and our net loss was **\$1.0 billion**, **\$1.3 billion**, **\$949.9 million** and **\$491.0** **\$949.9 million**, respectively. In the years ended **December 31, 2022**, **December 31, 2023**, **2021**, **2022**, and **2020**, **2021**, our 10 largest Active Customer Accounts generated an aggregate of **12%** **10%**, **11%** **12%** and **14%** **11%** of our total revenue, respectively.

Recent Developments

Business Unit Reorganization. In February 2023, we began operating our business in two business units: Twilio Communications ("Communications") and Twilio Data & Applications ("Data & Applications"). We determined that as of the end of the second quarter of 2023 we had two operating and reportable segments, Communications and Data & Applications, and that our segment measure of profitability was non-GAAP gross profit.

In the fourth quarter of 2023, we further modified the organization of our business units by moving our Flex and Marketing Campaigns products from the Data & Applications reportable segment into the Communications reportable segment. We also renamed our Data & Applications segment to Segment. The fourth quarter reorganization did not change our reportable segment structure; however, it changed the reporting unit structure within our operating segments. Reporting units are the level below the operating segment level at which we allocate and test goodwill. As a result of these changes, we reallocated goodwill to the newly formed reporting units after each reorganization. We were required to test goodwill for impairment immediately before and immediately after each time our reporting unit structure changed. In the second quarter of 2023, we performed a goodwill impairment assessment immediately before and immediately after the reorganization and the change in the reporting unit structure and concluded that goodwill was not impaired.

Prior to testing goodwill in the fourth quarter of 2023, we identified a change in Segment's performance, which indicated that certain intangible assets in our Segment reportable segment may not be recoverable. We performed an impairment assessment, as required by the accounting guidance, and recorded a \$285.7 million aggregate impairment loss related to Segment's developed technology and customer relationship intangible assets. We engaged an external expert to assist us with the valuation analysis. The loss is recorded in the impairment of long-lived assets line item of our consolidated financial statements for the year ended December 31, 2023, included elsewhere in this Annual Report on Form 10-K.

After the impairment loss was recorded in the fourth quarter of 2023, we performed a goodwill impairment assessment and concluded that goodwill was not impaired immediately before and immediately after the reorganization and the change in the reporting unit structure.

Further, in January 2024, our newly appointed Chief Executive Officer ("CEO"), who is also our Chief Operating Decision Maker ("CODM"), began reviewing segment operating results using non-GAAP income from operations as the segment measure of profitability. As such, we have disclosed our segment related information to reflect management's current view of the business.

Refer to Note 6, Note 8 and Note 12 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information on the restructuring, impairment and segment reporting.

Share Repurchase Program. In February 2023, our board of directors authorized a share repurchase program pursuant to which we may repurchase up to \$1.0 billion in aggregate value of our common stock until the program expires on December 31, 2024. Repurchases under this program can be made through open market, private transactions or other means in compliance with applicable federal securities laws and could include repurchases pursuant to Rule 10b5-1 trading plans. We have discretion in determining the conditions under which shares may be repurchased from time to time.

In the year ended December 31, 2023, we repurchased \$672.1 million in aggregate value, or 11.3 million shares, of our common stock under this program. As of December 31, 2023, approximately \$327.9 million of the originally authorized amount remained available for future repurchases.

Workforce Reduction Plans. In February 2023, we announced a workforce restructuring plan (the "February 2023 Plan") to eliminate approximately 17% of our workforce. The execution of the February 2023 Plan was substantially completed in the first quarter of 2023. In December 2023, we announced another restructuring plan (the "December 2023 Plan") to further eliminate approximately 5% of our workforce. In the year ended December 31, 2023, the cumulative restructuring expenses incurred under the February 2023 Plan and December 2023 Plan were \$165.7 million and were related to employee severance, benefits, vesting of equity awards and facilitation costs. The estimated remaining expenses

related to both plans are not expected to be significant. For additional details refer to Note 7 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Sabbatical Program. In February 2023, we announced that we will be sunsetting our employee sabbatical program that we introduced effective July 1, 2022. The sabbatical program was intended to provide our tenured employees with a paid leave of four consecutive weeks after every three years of service. Employees who had accumulated more than three years of service as of the program's effective date became eligible for their benefit immediately. As of December 31, 2023, the remaining liability of \$5.5 million related to the accumulated benefits for employees who remain eligible under this program until its expiration. As of December 31, 2022, the accrued sabbatical liability was \$30.7 million.

Remote-First Company. In 2022, we announced our decision to become a remote-first company, allowing our employees the flexibility to work remotely on a permanent basis. As part of our new operating strategy, we permanently closed several of our offices in 2022 and 2023. These office closures resulted in an impairment of several long-lived assets, including our operating lease assets, leasehold improvements and property and equipment. In the year ended December 31, 2023, we recorded a total impairment loss of \$34.8 million related to our permanent office closures.

Impairment of Strategic Investment. In the first quarter of 2023, we recorded a \$46.2 million impairment loss associated with one of our investments from 2021 to reduce its carrying amount to fair value.

Divestiture of IoT Assets. In the second quarter of 2023, we completed the sale of our IoT asset group for a stock consideration of \$15.8 million. The loss on divestiture and related expenses recorded in the year ended December 31, 2023 were not significant.

Divestiture of ValueFirst Business. In the third quarter of 2023, we completed the sale of our ValueFirst business for a total cash sales price of \$45.5 million, or \$38.2 million in proceeds, net of cash divested. In the year ended December 31, 2023, we recorded a \$28.8 million loss on divestiture and an additional \$3.3 million in related expenses. For additional details refer to Note 5 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Factors Affecting Our Results of Operations

We are focused on profitable growth. To increase revenue and grow market share, we intend to further enhance our ISV relationships, improve our self-service capabilities, cross-sell our products, drive product innovation, expand internationally, and enhance Segment interoperability. We also intend to optimize our business and take measures to reduce costs, including simplifying our business processes, modernizing our infrastructure, focusing on self-service, leveraging AI, and implementing other initiatives targeted at improving efficiencies in our business. We are also conducting an operational review of our Segment business, which we expect to complete in March 2024.

Our revenue is primarily derived from usage-based fees, which can lead to variability in our results of operations and at times create differences between our forecasts and actual results. Our usage-based revenue is also more immediately impacted by changes in consumer spending and macroeconomic conditions than our subscription-based revenue.

Our gross margin is impacted by a number of factors, including the timing and extent of our investments in our operations; our product mix; our ability to manage our cloud infrastructure-related and network service provider fees, including

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A2P SMS fees; the mix of U.S. revenue compared to international revenue; changes in foreign exchange rates; the timing of amortization of capitalized software development costs and acquired intangibles; and the extent to which we periodically choose to adjust prices of our products.

Our gross profit is impacted by our product mix. Our cost of revenue and gross profit are also impacted by changes in hosting fees and network service providers' fees and our ability to pass these costs through to our customers. We also experience seasonal trends due to increased consumer activity in the fourth quarter, which may result in lower sequential revenue in the first quarter.

We are winding down our video product and the software component of our Zipwhip business in 2024, which we expect will negatively impact revenue growth rates in 2024.

We are also migrating part of Segment's architecture to a new infrastructure provider in 2024, which we expect to allow us to recognize greater operational efficiency and scale up new AI-driven products and features. We expect this migration will take several quarters and result in overlapping expenses with our original and new vendors for much of 2024, which we expect to negatively impact Segment gross margins until we complete the migration.

We expect our recent workforce restructurings and recent office closures will reduce our operating expenses. We are also modifying our employee compensation program by introducing a new cash bonus program and reducing or eliminating our use of equity compensation for certain employees, which will primarily impact our expenses commencing in the first quarter of 2024.

Key Business Metrics

We review a number of operational and financial metrics, including Active Customer Accounts and Dollar-Based Net Expansion Rate, to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans and make strategic decisions.

The following table summarizes our year-over-year revenue growth, our number of Active Customer Accounts and Dollar-Based Net Expansion Rate for the years ended December 31, 2023, 2022 and 2021, and 2020, the number of Active Customer Accounts as of December 31, 2023, 2022 and 2021.

	Year Ended December 31,		
	2022	2021	2020
Active Customer Accounts (as of end date of period) ⁽¹⁾	290,000	256,000	221,000
Total Revenue (in thousands) ⁽²⁾	\$ 3,826,321	\$ 2,841,839	\$ 1,761,776
Total Revenue Growth Rate ⁽²⁾	35 %	61 %	55 %
Dollar-Based Net Expansion Rate ⁽³⁾	121 %	131 %	137 %

⁽¹⁾ Excludes Active Customer Accounts from Zipwhip in 2021 and 2022.

⁽²⁾ Includes revenue from Zipwhip, acquired July 14, 2021, Twilio Segment, acquired November 2, 2020, and other smaller acquisitions starting from the date of each respective acquisition. Total revenue growth rate measures year-over-year revenue growth.

⁽³⁾ Unless an acquisition closes on the first day of a quarter, revenue from an acquisition will not impact this calculation until the quarter following the one year anniversary of the acquisition.

	Year Ended December 31,		
	2023	2022	2021
Active Customer Accounts	305,000	290,000	256,000
Total Revenue (in thousands)	\$ 4,153,945	\$ 3,826,321	\$ 2,841,839
Total Revenue Growth Rate	9 %	35 %	61 %
Dollar-Based Net Expansion Rate	103 %	121 %	131 %

Active Customer Accounts

We define an Active Customer Account at the end of any period as an individual account, as identified by a unique account identifier, for which we have recognized at least \$5 of revenue in the last month of the period. A single organization may constitute multiple unique Active Customer Accounts if it has multiple account identifiers, each of which is treated as a separate Active Customer Account. Active Customer Accounts excludes customer accounts from Zipwhip, Inc. ("Zipwhip"). Communications Active Customer Accounts and Segment Active Customer Accounts are calculated using the same methodology, but using only revenue recognized from accounts in the respective segment. When presented in this Annual Report on Form 10-K, (i) the number of Active Customer Accounts is rounded down to the nearest thousand, (ii) the number of Communications Active Customer Accounts is rounded down to the nearest thousand, and (iii) the number of Segment Active Customer Accounts is rounded down to the nearest hundred.

We believe that the number of Active Customer Accounts, on an aggregate basis and at the segment level, is an important indicator of the growth of our business, the market acceptance of our platform and future revenue trends. We believe that use of our platform by customers at or above the \$5 per month threshold is a stronger indicator of potential future engagement than trial usage of our platform or usage at levels below \$5 per month. The number of Active Customer Accounts is rounded down to the nearest thousand. In the three years ended December 31, 2022, December 31, 2023, 2021, 2022 and 2020, 2021, revenue from Active Customer Accounts represented over 99% of total revenue in each period.

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Dollar-Based Net Expansion Rate

Our Dollar-Based Net Expansion Rate compares the total revenue from all Active Customer Accounts and customer accounts from Zipwhip in a quarter to the same quarter in the prior year. To calculate the Dollar-Based Net Expansion Rate, we first identify the cohort of Active Customer Accounts and customer accounts from Zipwhip that were Active Customer Accounts or customer accounts from Zipwhip in the same quarter of the prior year. The Dollar-Based Net Expansion Rate is the quotient obtained by dividing the revenue generated from that cohort in a quarter, by the revenue generated from that same cohort in the corresponding quarter in the prior year. When we calculate Dollar-Based Net Expansion Rate for periods longer than one quarter, we use the average of the applicable quarterly Dollar-Based Net Expansion Rates for each of the quarters in such period. Revenue from acquisitions does not impact the Dollar-Based Net Expansion Rate calculation until the quarter following the one-year anniversary of the applicable acquisition, unless the acquisition closing date is the first day of a quarter.

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As a result, for the year ended December 31, 2023, our Dollar-Based Net Expansion Rate excludes the contributions from acquisitions made after October 1, 2022. Revenue from divestitures does not impact the Dollar-Based Net Expansion Rate calculation beginning in the quarter the divestiture closed, unless the divestiture closing date is the last day of a quarter. As a result, for the year ended December 31, 2023, our Dollar-Based Net Expansion Rate excludes the contributions from divestitures made after December 31, 2022. Communications Dollar-Based Net Expansion Rate and Segment Dollar-Based Net Expansion

Rate are calculated using the same methodology, but using only revenue attributable to the respective segment and Active Customer Accounts and customer accounts from Zipwhip for that respective segment.

We believe that measuring Dollar-Based Net Expansion Rate, on an aggregate basis and at the segment level, provides a more meaningful an important indication of the performance of our efforts to increase revenue from existing customers. Our ability to drive growth and generate incremental revenue depends, in part, on our ability to maintain and grow our relationships with existing Active Customer Accounts and to increase their use of our the platform. An important way in which we have historically tracked performance in this area is by measuring the Dollar-Based Net Expansion Rate for Active Customer Accounts. Our Dollar-Based Net Expansion Rate increases when such Active Customer Accounts increase their usage of a product, extend their usage of a product to new applications or adopt a new product. Our Dollar-Based Net Expansion Rate decreases when such Active Customer Accounts cease or reduce their usage of a product or when we lower usage prices on a product. As our customers grow their businesses and extend the use of our platform, they sometimes create multiple customer accounts with us for operational or other reasons. As such, when we identify a significant customer organization (defined as a single customer organization generating more than 1% of revenue in a quarterly reporting period) that has created a new Active Customer Account, this new Active Customer Account is tied to, and revenue from this new Active Customer Account is included with, the original Active Customer Account for the purposes of calculating this metric.

Key Components of Statements of Operations

Revenue

Revenue. We derive recognize revenue from our products on either a usage basis or a subscription basis, depending on the nature of the product and the type of customer contract. Our reportable segments contain products that may follow either revenue recognition model.

The majority of our Communications segment revenue is derived from usage-based usage-based fees. The usage-based fees are earned from our communications products when customers access our cloud-based platform. Our usage-based products primarily include offerings, such as Programmable Messaging, Programmable Voice, Twilio Verify platform and others, start using the products. Some examples of the usage-based fees that our usage-based products are Messaging and Voice. For Messaging products, we primarily charge include fees related to the number of text messages sent or received using our Programmable Messaging, received. For Voice products, we primarily charge fees for minutes of call duration activity for duration. Some examples of the subscription-based Communications products are Email, Marketing Campaigns and Flex. For these products we recognize revenue evenly over the contract term.

Our Segment segment revenue is derived from Segment and Engage products that are subscription-based. For these products we recognize revenue evenly over the contract term. When our Programmable Voice and the number of authentications for Twilio Verify. In the years ended December 31, 2022, 2021 and 2020, we generated 73%, 72% and 76% of our revenue, respectively, from usage-based fees.

We earn monthly subscription-based fees from more complex software usage-based products and solutions on our platform, such as our customer data platform Twilio Segment, our customer engagement solution Twilio Engage, our cloud contact center Twilio Flex and certain other fee-based products, such as our Email API. Our communications products that are embedded into our complex software subscription-based products, are charged we charge for each product separately on a usage basis, or subscription basis, respectively, and record the revenue in the reportable segment in which each product resides.

Customers

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Most of our usage-based customers gain access to our products and solutions either through an our e-commerce self service self-service sign-up format, which requires an upfront prepayment via credit card that is drawn down as they use our products; or for products. Pricing is generally based on a publicly available, self-serve pricing matrix that generally allows customers to receive tiered discounts as their usage of our products increases. Many of our larger usage-based customers including enterprise customers, enter into contractual arrangements with us for a negotiated contract is established for period of at least 12 months that contain months. These contracts may include negotiated terms and typically include minimum revenue commitments and which may contain more favorable pricing. Customers on of varying durations. Usage-based customers subject to such contracts are typically either invoiced monthly in arrears for products used or used. In the years ended December 31, 2023, 2022 and 2021, we generated 71%, 73% and 72% of our revenue, respectively, from usage-based fees.

Subscription-based fees are earned in accordance with subscription pricing terms. For our subscription-based products, customers generally enter into negotiated contracts, which are typically one to three years in duration. Subscription customers are generally invoiced in advance at the start of the contract term. In the years ended December 31, 2023, 2022 and 2021, we generated 29%, 27% and 28% of our revenue, respectively, from non-usage-based fees.

Amounts that have been charged via credit card or invoiced are recorded in revenue, deferred revenue or customer deposits, depending on whether the revenue recognition criteria have been met. Our deferred revenue and customer deposits liability balance is not a meaningful indicator of our future revenue at any point in time because the number of contracts with our invoiced customers that contain terms requiring any form of prepayment is not significant.

We define U.S. revenue as revenue from customers with IP addresses or mailing addresses at the time of registration in the United States. We define international revenue as revenue from customers with IP addresses or mailing addresses at the time of registration outside of the United States.

Cost of Revenue and Gross MarginProfit

Cost of Revenue. Cost of revenue consists primarily of fees paid to network service providers. Cost of revenue also includes cloud infrastructure fees, direct costs of personnel, such as salaries and stock-based compensation for our customer support employees, and other non-personnel costs, such as depreciation and amortization expense related to data centers and hosting equipment, and amortization of capitalized internal-use software development costs and acquired intangible assets. Costs of revenue are generally directly attributable to each segment. Certain costs of revenue are allocated to segments based on methodologies that best reflect the patterns of consumptions of these costs.

Our arrangements with network service providers require us to pay fees based on the volume of phone calls initiated or text messages sent, as well as the number of telephone numbers acquired by us to service our customers. Our arrangements with our cloud infrastructure provider providers require us to pay fees based on our server capacity consumption.

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Gross Margin. Profit. Gross margin is gross profit expressed as a percentage represents revenue less cost of revenue. Our gross margin has been and will continue to be affected by a number of factors, including the timing and extent of our investments in our operations; our product mix; our ability to manage our network service provider and cloud infrastructure-related fees, including A2P SMS fees; the mix of U.S. revenue compared to international revenue; changes in foreign exchange rates; the timing of amortization of capitalized software development costs and acquired intangibles; and the extent to which we periodically choose to adjust prices of our products.

Operating Expenses

The most significant components of operating expenses are personnel costs, which consist of salaries, benefits, sales commissions and bonuses and stock-based compensation. We also incur other non-personnel costs related to our general overhead expenses.

Research and Development. Research and development expenses consist primarily of personnel costs, outsourced engineering services, cloud infrastructure fees for staging and development of our products, depreciation, amortization of capitalized internal-use software development costs and an allocation of our general overhead expenses. We capitalize the portion of our software development costs that meets the criteria for capitalization. Research and development expenses are generally directly attributable to each segment. Certain research and development expenses are allocated to segments based on methodologies that best reflect the patterns of consumptions of these costs. A small percentage of research and development costs, such as costs related to digital architecture and information security, are not allocated to segments because they support company-wide processes and are managed on a company-wide level.

We are focusing our research and development investment in the highest impact product areas for our future. We are investing strategically in alignment with our focus on building a trusted, leading customer engagement platform.

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Sales and Marketing. Sales and marketing expenses consist primarily of personnel costs, including commissions and bonuses to our sales employees. Sales and marketing expenses also include expenditures related to advertising, marketing, our brand awareness activities, costs related to our SIGNAL customer and developer conferences, credit card processing fees, professional services fees, depreciation, amortization of acquired intangible assets and an allocation of our general overhead expenses. Sales and marketing expenses are generally directly attributable to each segment. Certain sales and marketing expenses are allocated to segments based on methodologies that best reflect the patterns of consumptions of these costs. A small percentage of sales and marketing costs, such as costs related to corporate communications and global brand awareness, are not allocated to segments because they support company-wide processes and are managed on a company-wide level.

We focus our sales and marketing efforts on generating awareness of our company, platform and products, creating sales leads and establishing and promoting our brand, both domestically and internationally.

General and Administrative. General and administrative expenses consist primarily of personnel costs for our accounting, finance, legal, human resources and administrative support personnel. General and administrative expenses also include costs related to business acquisitions and dispositions, legal and other professional services fees, certain taxes, depreciation and amortization, charitable contributions and an allocation of our general overhead expenses. General and administrative expenses are allocated to each segment when they are directly attributable to each segment or are allocated to segments based on methodologies that best reflect the patterns of consumptions of these costs. A significant portion of general and administrative costs, such as costs related to corporate governance, legal and certain finance and accounting functions, support company-wide processes and are managed on a company-wide level and, therefore, are considered corporate costs and are not allocated to segments.

We expect that we will incur costs associated with supporting the growth of our business and to meet the increased compliance requirements associated with our international expansion. business. We may also incur higher than usual losses related to deterioration of quality of certain financial assets caused by the macroeconomic conditions.

Restructuring Costs. Restructuring costs consist primarily of personnel costs, such as employee severance payments, benefits and certain facilitation costs, associated with our workforce reductions, which are described in Note 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Restructuring costs also include stock-based compensation expense related to vesting of stock-based awards of the impacted employees.

Impairment of Long-Lived Assets. Impairment of long-lived assets consists primarily of impairment charges allocated to the carrying amount of intangible assets and certain operating right-of-use assets and the associated leasehold improvements and property and equipment when the carrying amounts exceed their respective fair values.

Other Expenses, Net

Our other expenses, net consist primarily of our share of losses from our equity method investment; impairment charges and gains and losses related to our strategic investments and marketable securities, including interest income; and debt-related costs, including interest expense.

(Provision for) **Benefits Benefit From Income Taxes**

Our (provision for) benefit from income taxes consists primarily of income taxes, withholding taxes in foreign jurisdictions in which the Company conducts business and tax benefits related to the release of valuation allowance from historically completed acquisitions.

The primary difference between our effective tax rate and the federal statutory rate relates to the **full** valuation allowance the Company established on the federal, state and certain foreign net operating losses and credits.

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Non-GAAP Financial Measures

We use the following non-GAAP financial information, collectively, to evaluate our ongoing operations and for internal planning and forecasting purposes. We believe that non-GAAP financial information, when taken collectively, may be helpful to investors because it provides consistency and comparability with past financial performance, facilitates period-to-period comparisons of results of operations and assists in comparisons with other companies, many of which use similar non-GAAP financial information to supplement their results of operations reported in accordance with generally accepted accounting principles ("GAAP"). Non-GAAP financial information is presented for supplemental informational purposes only, should not be considered a substitute for financial information presented in accordance with GAAP and may be different from similarly-titled non-GAAP measures used by other companies. Whenever we use a non-GAAP financial measure, a reconciliation is provided to the most closely applicable financial measure stated in accordance with GAAP. The users of our consolidated financial statements are encouraged to review the related GAAP financial measures and the reconciliation of these non-GAAP financial measures to their most directly comparable GAAP financial measures.

Non-GAAP Gross Profit and Non-GAAP Gross Margin

For the periods presented, we define non-GAAP gross profit and non-GAAP gross margin as GAAP gross profit and GAAP gross margin, respectively, adjusted to exclude, as applicable, certain expenses as presented in the table below:

	Year Ended December 31,					
	Year Ended December 31,					
	2022		2021		2020	
	Year Ended December 31,					
	Year Ended December 31,					
	2023					
	2023					
	2023					
Reconciliation:						
Reconciliation:						
Reconciliation:	Reconciliation:	(In thousands)				(In thousands)
GAAP gross profit	GAAP gross profit	\$	1,813,577	\$	1,390,713	\$ 915,661
GAAP gross margin	GAAP gross margin		47 %		49 %	52 %
GAAP gross margin						
GAAP gross margin						
Non-GAAP adjustments:	Non-GAAP adjustments:					
Share-based compensation			21,136		14,074	8,857
Non-GAAP adjustments:						
Non-GAAP adjustments:						
Stock-based compensation						
Stock-based compensation						
Stock-based compensation						
Amortization of acquired intangibles						
Amortization of acquired intangibles						
Amortization of acquired intangibles	Amortization of acquired intangibles		122,653		114,896	59,501

Payroll taxes related to stock-based compensation	Payroll taxes related to stock-based compensation	539	—	—
Payroll taxes related to stock-based compensation				
Payroll taxes related to stock-based compensation				
Non-GAAP gross profit				
Non-GAAP gross profit				
Non-GAAP gross profit	Non-GAAP gross profit	\$ 1,957,905	\$ 1,519,683	\$ 984,019
Non-GAAP gross margin	Non-GAAP gross margin	51 %	53 %	56 %
Non-GAAP gross margin				
Non-GAAP gross margin				

Non-GAAP Operating Expenses

For the periods presented, we define non-GAAP operating expenses (including categories of operating expenses) as GAAP operating expenses (and categories of operating expenses) adjusted to exclude, as applicable, certain expenses as presented in the table below:

		Year Ended December 31,		
		Year Ended December 31,		
		2022	2021	2020
		Year Ended December 31,		
		Year Ended December 31,		
		2023		
		2023		
		2023		
Reconciliation:				
Reconciliation:				
Reconciliation:	Reconciliation:	(In thousands)		
GAAP operating expenses	GAAP operating expenses	\$ 3,018,885	\$ 2,306,297	\$ 1,408,562
Non-GAAP adjustments:	Non-GAAP adjustments:			
Share-based compensation		(763,149)	(618,211)	(353,054)
Non-GAAP adjustments:				
Non-GAAP adjustments:				
Stock-based compensation				
Stock-based compensation				
Stock-based compensation				
Amortization of acquired intangibles	Amortization of acquired intangibles	(83,528)	(83,888)	(38,993)
Acquisition related expenses		(2,621)	(7,449)	(21,765)
Amortization of acquired intangibles				
Amortization of acquired intangibles				
Acquisition and divestiture related expenses				
Acquisition and divestiture related expenses				
Acquisition and divestiture related expenses				
Loss on net assets divested				
Loss on net assets divested				
Loss on net assets divested				

Payroll taxes related to stock-based compensation	Payroll taxes related to stock-based compensation	(23,293)	(48,417)	(27,389)
Charitable contribution		(9,541)	(31,169)	(18,993)
Payroll taxes related to stock-based compensation				
Payroll taxes related to stock-based compensation				
Charitable contributions				
Charitable contributions				
Charitable contributions				
Restructuring costs				
Restructuring costs				
Restructuring costs	Restructuring costs	(76,636)	—	—
Impairment of long-lived assets	Impairment of long-lived assets	(97,722)	—	—
Impairment of long-lived assets				
Impairment of long-lived assets				
Non-GAAP operating expenses	Non-GAAP operating expenses	\$ 1,962,395	\$ 1,517,163	\$ 948,368
Non-GAAP operating expenses				
Non-GAAP operating expenses				

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Non-GAAP **Income (Loss)** **Income** from Operations and Non-GAAP Operating Margin

For the periods presented, we define non-GAAP **income (loss)** **income** from operations (which we may refer to as "non-GAAP operating profit" or "non-GAAP profit from operations") and non-GAAP operating margin as GAAP **loss income (loss)** from operations and GAAP operating margin, respectively, adjusted to exclude, as applicable, certain expenses as presented in the table below:

		Year Ended December 31,			
		Year Ended December 31,			
		2022	2021	2020	
		Year Ended December 31,			
		Year Ended December 31,			
		2023			
		2023			
		2023			
Reconciliation:					
Reconciliation:					
Reconciliation:	Reconciliation:	(In thousands)			
GAAP loss from operations	GAAP loss from operations	\$ (1,205,308)	\$ (915,584)	\$ (492,901)	(In thousands)
GAAP operating margin	GAAP operating margin	(32) %	(32) %	(28) %	
GAAP operating margin					
GAAP operating margin					
Non-GAAP adjustments:	Non-GAAP adjustments:				
Share-based compensation		784,285	632,285	361,911	
Non-GAAP adjustments:					

Non-GAAP adjustments:				
Stock-based compensation				
Stock-based compensation				
Stock-based compensation				
Amortization of acquired intangibles	Amortization of acquired intangibles	206,181	198,784	98,494
Acquisition related expenses		2,621	7,449	21,765
Amortization of acquired intangibles				
Amortization of acquired intangibles				
Acquisition and divestiture related expenses				
Acquisition and divestiture related expenses				
Acquisition and divestiture related expenses				
Loss on net assets divested				
Loss on net assets divested				
Loss on net assets divested				
Payroll taxes related to stock-based compensation	Payroll taxes related to stock-based compensation	23,832	48,417	27,389
Charitable contribution		9,541	31,169	18,993
Payroll taxes related to stock-based compensation				
Payroll taxes related to stock-based compensation				
Charitable contributions				
Charitable contributions				
Charitable contributions				
Restructuring costs				
Restructuring costs				
Restructuring costs	Restructuring costs	76,636	—	—
Impairment of long-lived assets	Impairment of long-lived assets	97,722	—	—
Non-GAAP (loss) income from operations		\$ (4,490)	\$ 2,520	\$ 35,651
Impairment of long-lived assets				
Impairment of long-lived assets				
Non-GAAP income (loss) from operations				
Non-GAAP income (loss) from operations				
Non-GAAP income (loss) from operations				
Non-GAAP operating margin	Non-GAAP operating margin	— %	— %	2 %
Non-GAAP operating margin				
Non-GAAP operating margin				

Factors Affecting Our Performance

We believe that the future success of our business and our results of operations may be significantly affected by many factors, including the factors described below and those outlined in Part II, Item 1A, "Risk Factors."

Usage-Based Fees. The majority of our revenue is derived from usage-based fees that we charge primarily for our communications products, which can lead to variability and at times create significant differences between forecasts and actual results. In addition, our product mix and mix of international and domestic customers may significantly impact

our gross margin. Because usage trends by geographic region and by customer are inherently difficult to estimate, our actual results could differ significantly from our estimates, particularly if market and industry specific conditions continue to shift.

Macroeconomic and Geopolitical Factors. Our results of operations may be significantly affected by several macroeconomic and geopolitical factors, such as changes in global economic conditions, customer demand and spending, inflation, labor market constraints, uncertainty regarding the impacts of fluctuations in foreign exchange rates, world events, existing and new domestic and foreign laws and regulations, as well as those factors outlined in Part I, Item 1A, "Risk Factors."

Key Developments

Share Repurchase Program. In February 2023, our board of directors authorized a share repurchase program to repurchase \$1.0 billion of our Class A common stock over time. Under the program, we may purchase shares from time to time through open market transactions, privately negotiated transactions and other means in compliance with applicable securities laws, including through Rule 10b5-1 plans. The program is set to expire on December 31, 2024. The timing, manner, price and amount of any repurchases are determined by us at our discretion and depend on a variety of factors, including legal requirements, price and economic market conditions.

Business Unit Reorganization. In February 2023, we announced the reorganization of our business into two business units: Twilio Communications and Twilio Data & Applications. We believe that this strategic realignment will enable us to better execute on the key priorities for each side of our business—driving efficiencies for Communications and accelerating growth for Data & Applications—while accounting for each business unit's unique economic, customer, and product needs. These two business units can execute toward their respective financial goals with more focus and independence—but they are also highly complementary. Our Data & Applications business benefits from our underlying communications platform and our substantial active customer base. Our success in Data & Applications also drives more intelligence for our Communications products. Together, they address adjacent buyers and related problems that our customers have. We also believe that driving efficiencies in our Communications business and establishing it as our major profit engine will allow us to continue to invest in our Data & Applications business to drive growth, capture market share, and increase our gross margin.

Workforce Reduction Plans. In September 2022, the compensation and talent management committee of our board of directors approved a restructuring plan that was designed to reduce operating costs, improve operating margins and shift our selling capacity to accelerate software sales (the "September Plan"). The September Plan eliminated approximately 11% of our global workforce. During 2022, we recorded an aggregate restructuring expense of \$76.6 million in our consolidated statement of operations in connection with the September Plan, consisting of employee transition, notice period and severance payments, employee benefits, and related facilitation costs. The execution of the September Plan was substantially complete as of December 31, 2022. For further details on this event refer to Note 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In February 2023, we committed to a workforce reduction plan (the "February Plan"), that in addition to the September Plan, is intended to reduce operating costs, improve operating margins, and accelerate profitability. The February Plan included the elimination of approximately 17% of our workforce. We estimate that we will incur approximately \$100.0 to \$135.0 million in charges in connection with the February Plan, consisting of cash expenditures for employee transition, notice period and severance payments, employee benefits, and related facilitation costs. We expect that the majority of the restructuring charges related to the February Plan will be incurred in the first quarter of 2023 and that the execution of the February Plan, including cash payments, will be substantially complete by the end of the second quarter of 2023.

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Remote-First Company. In May 2022, we announced our decision to become a remote-first company, giving employees the flexibility to work remotely on a permanent basis. As part of our new operating strategy, in the third quarter, we permanently closed several of our office locations (the "2022 Closures"), which resulted in an impairment of several long-lived assets, including our operating leases, leasehold improvement and property and equipment. During 2022, we recorded a total impairment loss of \$97.7 million and expect to record an estimated additional loss of approximately \$7.0 million to \$10.0 million in the first quarter of 2023 related to the 2022 Closures. In February 2023, we announced that we will permanently close additional office locations. The February announcement will result in an additional impairment of approximately \$10.0 to \$25.0 million that will be recorded during 2023 as the exit activities are finalized in each location.

Investment in Syniverse Corporation. In May 2022, we acquired 44.55% equity interests in Syniverse Corporation ("Syniverse") for \$750.0 million in cash. We do not have a controlling financial interest in Syniverse but we can exercise significant influence and therefore, the investment was accounted for under the equity method. In our statement of operations we record our proportional share of Syniverse net earnings or losses as they occur. We also record the amortization of basis difference in certain intangible assets that we valued to fair value on the transaction closing date, as required by the accounting standards. For more details on the nature of this transaction, accounting treatment and the impact to our financial statements refer to Note 2(w) and Note 10 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Sabbatical Program. In February 2023, we announced that we will be sunsetting our employee sabbatical program that we introduced effective July 1, 2022. The sabbatical program was intended to provide our tenured employees with a paid sabbatical leave of four consecutive weeks. Employees who had already accumulated more than three years of tenure with us as of the program's effective date became immediately eligible for their sabbatical leaves. As of December 31, 2022, we carried a \$30.7 million liability related to this program. Sunsetting of this program will result in an estimated \$10.0 million one-time non-cash benefit that will be recorded in the first quarter of 2023.

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Results of Operations

The following table sets forth our results of operations for the periods presented. We have included Zipwhip in our results of operations prospectively after its closing date of July 14, 2021; Twilio Segment after its closing date of November 2, 2020; and all other acquisitions from the respective closing dates of each acquisition. The period-to-period comparison of our historical results are not indicative of the results that may be expected in the future.

		Year Ended December 31,		
		2022	2021	2020
		Year Ended December 31,		
		Year Ended December 31,		
		Year Ended December 31,		
		2023	2023	2022 2021
Consolidated Statements of Operations Data:	Consolidated Statements of Operations Data:	(In thousands, except share and per share amounts)		
Revenue	Revenue	\$ 3,826,321	\$ 2,841,839	\$ 1,761,776
Cost of revenue	Cost of revenue			
(1) (2)	(1) (2)	2,012,744	1,451,126	846,115
Gross profit	Gross profit	1,813,577	1,390,713	915,661
Operating expenses:	Operating expenses:			
Research and development (1) (2)				
Research and development (1) (2)				
Research and development	Research and development			
(1) (2)	(1) (2)	1,079,081	789,219	530,548
Sales and marketing	Sales and marketing	1,248,032	1,044,618	567,407
(1) (2)	(1) (2)			
General and administrative	General and administrative			
(1) (2)	(1) (2)	517,414	472,460	310,607
Restructuring costs	Restructuring costs	76,636	—	—
(1)	(1)			
Impairment of long-lived assets	Impairment of long-lived assets	97,722	—	—
Total operating expenses	Total operating expenses	3,018,885	2,306,297	1,408,562
Loss from operations	Loss from operations	(1,205,308)	(915,584)	(492,901)
Other expenses, net:	Other expenses, net:			
Share of losses from equity method investment	Share of losses from equity method investment	(35,315)	—	—
Other expenses, net		(3,009)	(45,345)	(11,525)
Share of losses from equity method investment				
Share of losses from equity method investment				
Impairment of strategic investments				

Other income (expenses), net				
Total other expenses, net	Total other expenses, net	(38,324)	(45,345)	(11,525)
Loss before (provision for) benefit from income taxes	Loss before (provision for) benefit from income taxes	(1,243,632)	(960,929)	(504,426)
(Provision for) benefit from income taxes	(Provision for) benefit from income taxes	(12,513)	11,029	13,447
Net loss attributable to common stockholders	Net loss attributable to common stockholders	\$ (1,256,145)	\$ (949,900)	\$ (490,979)
Net loss per share attributable to common stockholders, basic and diluted	Net loss per share attributable to common stockholders, basic and diluted	\$ (6.86)	\$ (5.45)	\$ (3.35)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	182,994,038	174,180,465	146,708,663

(1) Includes stock-based compensation expense as follows:

	Year Ended December 31,		
	Year Ended December 31,		
	2022	2021	2020
	Year Ended December 31,		
	(In thousands)		
	Year Ended December 31,		
	2023		
	2023		
	2023		
	(In thousands)		
	(In thousands)		
	(In thousands)		
Cost of revenue	Cost of revenue	\$ 21,136	\$ 14,074
Research and development	Research and development	374,846	258,672
Research and development			173,303

Research and development				
Sales and marketing				
Sales and marketing				
Sales and marketing	Sales and marketing	240,109	213,351	103,450
General and administrative				
General and administrative	General and administrative	148,194	146,188	76,301
General and administrative				
General and administrative				
Restructuring costs				
Restructuring costs				
Restructuring costs	Restructuring costs	14,275	—	—
Total	Total	\$ 798,560	\$ 632,285	\$ 361,911
Total				
Total				

(2) Includes amortization of acquired intangibles as follows:

Year Ended December 31,				
Year Ended December 31,				
2022				
2021				
2020				
Year Ended December 31,				
(In thousands)				
Year Ended December 31,				
2023				
2023				
2023				
(In thousands)				
(In thousands)				
(In thousands)				
Cost of revenue	Cost of revenue	\$ 122,653	\$ 114,896	\$ 59,501
Research and development				
Research and development	Research and development	1,680	1,260	—
Research and development				
Research and development				
Sales and marketing				
Sales and marketing				
Sales and marketing	Sales and marketing	81,841	82,493	38,915
General and administrative				
General and administrative	General and administrative	7	135	78
General and administrative				
General and administrative				
Total	Total	\$ 206,181	\$ 198,784	\$ 98,494
Total				
Total				

The following table sets forth our results of operations for each of the periods presented as a percentage of our total revenue:

Year Ended December 31,	
Year Ended December 31,	

		2022	2021	2020
Year Ended December 31,				
Year Ended December 31,				
		2023		
		2023		
		2023		
Consolidated Statements of Operations, as a percentage of revenue: **				
Consolidated Statements of Operations, as a percentage of revenue: **				
Consolidated Statements of Operations, as a percentage of revenue: **	Consolidated Statements of Operations, as a percentage of revenue: **			
Revenue	Revenue	100 %	100 %	100 %
Revenue				
Revenue				
Cost of revenue				
Cost of revenue				
Cost of revenue	Cost of revenue	53	51	48
Gross profit	Gross profit	47	49	52
Gross profit				
Gross profit				
Operating expenses:				
Operating expenses:				
Operating expenses:	Operating expenses:			
Research and development	Research and development	28	28	30
Research and development				
Research and development				
Sales and marketing				
Sales and marketing	Sales and marketing	33	37	32
General and administrative	General and administrative	14	17	18
General and administrative				
General and administrative				
Restructuring costs				
Restructuring costs				
Restructuring costs	Restructuring costs	2	—	—
Impairment of long-lived assets	Impairment of long-lived assets	3	—	—
Impairment of long-lived assets				
Impairment of long-lived assets				
Total operating expenses				
Total operating expenses				
Total operating expenses	Total operating expenses	79	81	80
Loss from operations	Loss from operations	(32)	(32)	(28)
Loss from operations				
Loss from operations				
Other expenses, net				
Other expenses, net				
Other expenses, net	Other expenses, net			

Share of losses from equity method investment	Share of losses from equity method investment	(1)	—	—
Other expenses, net		*	(2)	(1)
Share of losses from equity method investment				
Share of losses from equity method investment				
Impairment of strategic investments				
Impairment of strategic investments				
Impairment of strategic investments				
Other income (expenses), net				
Other income (expenses), net				
Other income (expenses), net				
Total other expenses, net				
Total other expenses, net				
Total other expenses, net	Total other expenses, net	(1)	(2)	(1)
Loss before (provision for) benefit from income taxes	Loss before (provision for) benefit from income taxes	(33)	(34)	(29)
Loss before (provision for) benefit from income taxes				
Loss before (provision for) benefit from income taxes				
(Provision for) benefit from income taxes				
(Provision for) benefit from income taxes				
(Provision for) benefit from income taxes	(Provision for) benefit from income taxes	*	*	1
Net loss attributable to common stockholders	Net loss attributable to common stockholders	(33 %)	(33 %)	(28 %)
Net loss attributable to common stockholders				
Net loss attributable to common stockholders				

* Less than 0.5% of revenue.

** Columns may not add up to 100% due to rounding.

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Comparison of Fiscal Years Ended December 31, 2022 December 31, 2021 2022 and 2020 2021

Revenue

	Year Ended December 31,						
	2022	2021	2020	2021 to 2022 Change	2020 to 2021 Change		
	(Dollars in thousands)						
Total Revenue	\$ 3,826,321	\$ 2,841,839	\$ 1,761,776	\$ 984,482 35 %	\$ 1,080,063 61 %		

	Year Ended December 31,						
	2023	2022	2021	2022 to 2023 Change	2021 to 2022 Change		
	(Dollars in thousands)						
Twilio Communications	\$ 3,858,693	\$ 3,550,087	\$ 2,640,874	\$ 308,606 9 %	\$ 909,213 34 %		
Twilio Segment	295,252	276,234	200,965	19,018 7 %	75,269 37 %		
Consolidated total revenue	\$ 4,153,945	\$ 3,826,321	\$ 2,841,839	\$ 327,624 9 %	\$ 984,482 35 %		

2023 compared to 2022

In 2023, Communications revenue increased by \$308.6 million, or 9%, compared to the same period last year. This increase was primarily attributable to a 5% increase in the number of Communications Active Customer Accounts from over 282,000 as of December 31, 2022, to over 297,000 as of December 31, 2023, as well as the increased usage of our products by our existing customers, as reflected in our Communications Dollar-Based Net Expansion Rate of 103%. These increases were offset by a decrease of \$59.8 million related to revenue from our ValueFirst and IoT businesses, which were divested during 2023.

In 2023, Segment revenue increased by \$19.0 million, or 7%, compared to the same period last year. This increase was primarily attributable to a 4% increase in the number of Segment Active Customer Accounts from over 7,700 as of December 31, 2022 to over 8,000 as of December 31, 2023. Our Segment Dollar-Based Net Expansion Rate was 97% for the year ended December 31, 2023, due to higher contraction and customer churn compared to the same period last year.

In 2023, consolidated total revenue increased by \$327.6 million, or 9%, compared to the same period last year. This increase was primarily attributable to a 5% increase in the number of Active Customer Accounts, from over 290,000 as of December 31, 2022 to over 305,000 as of December 31, 2023, as well as the increased usage of our products by our existing customers, as reflected in our Dollar-Based Net Expansion Rate of 103%.

In 2023, U.S. revenue and international revenue represented \$2.8 billion, or 66%, and \$1.4 billion, or 34%, of total revenue, respectively. In 2022, U.S. revenue and international revenue represented \$2.5 billion, or 66%, and \$1.3 billion, or 34%, of total revenue, respectively.

2022 compared to 2021

In 2022, Communications revenue increased by \$909.2 million, or 34%, compared to the same period in the prior year. This increase was primarily attributable to a 13% increase in the number of Communications Active Customer Accounts from over 249,000 as of December 31, 2021, to over 282,000 as of December 31, 2022, as well as the increased usage of our products by our existing customers, as reflected in our Communications Dollar-Based Net Expansion Rate of 121%.

In 2022, Segment revenue increased by \$75.3 million, or 37%, compared to the same period in the prior year. This increase was primarily attributable to a 4% increase in the number of Segment Active Customer Accounts from over 7,400 as of December 31, 2021 to over 7,700 as of December 31, 2022. Our Segment Dollar-Based Net Expansion Rate was 116% for the year ended December 31, 2022.

In 2022, consolidated total revenue increased by \$984.5 million, or 35%, compared to the same period last in the prior year. This increase was primarily attributable to a 13% increase in the number of Active Customer Accounts, from over 256,000 as of December 31, 2021, to over 290,000 as of December 31, 2022, as well as an increase in the usage of our products by our existing customers, as reflected in our Dollar-Based Net Expansion Rate of 121%, as well as a 13% increase in the number of Active Customer Accounts, from over 256,000 as of December 31, 2021, to over 290,000 as of December 31, 2022. This growth in usage and Active Customer Accounts helped to drive a \$650.0 million increase in Programmable Messaging revenue, a \$46.3 million increase in Programmable Voice revenue, a \$56.1 million increase in Email revenue and a \$115.5 million increase in revenue related to our software products.

In 2022, U.S. revenue and international revenue represented \$2.5 billion, or 66%, and \$1.3 billion, or 34%, respectively, of total revenue. revenue, respectively. In 2021, U.S. revenue and international revenue represented \$1.9 billion, or 68%, and \$914.5 million, or 32%, respectively, of total revenue. The revenue, respectively.

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Cost of Revenue and Gross Profit

	Year Ended December 31,											
	2023		2022		2021		2022 to 2023 Change		2021 to 2022 Change			
	(Dollars in thousands)											
Cost of revenue	\$	2,110,015	\$	2,012,744	\$	1,451,126	\$	97,271	5 %	\$	561,618	39 %
Gross profit	\$	2,043,930	\$	1,813,577	\$	1,390,713	\$	230,353	13 %	\$	422,864	30 %

2023 compared to 2022

In 2023, cost of revenue increased by \$97.3 million, or 5%, compared to the same period last year. This increase was primarily attributable to a \$51.4 million increase in international revenue was attributable to network service providers' costs, net of the impact of the hedging instruments, and a \$28.7 million increase in hosting fees, which support the growth in usage of our products by our new and existing customers as reflected in our overall Dollar-Based Net Expansion Rate of 121%, as well as customers. The increase was also attributable to a 13% \$20.3 million increase in amortization of capitalized internal-use software development costs due to additional internal-use software projects placed in service in the number of international Active Customer Accounts.

2021 compared to 2020 current year.

In 2021, total revenue 2023, gross profit increased by \$1.1 billion, \$230.4 million, or 61% 13%, compared to the same period in the prior last year. This increase was primarily attributable to increases in the usage of our products by our existing customers, as reflected in our Dollar-Based Net Expansion Rate of 131%, as well as a 16% increase in the

In 2021, U.S. revenue and international revenue represented \$1.9 billion, or 68%, and \$914.5 million, or 32%, respectively, of total revenue. In 2020, U.S. revenue and international revenue represented \$1.3 billion, or 73%, and \$479.6 million, or 27%, respectively, of total revenue. The increase in international revenue was attributable to the growth in usage factors impacting our revenue and cost of our products, particularly our Programmable Messaging products and Programmable Voice products, by our existing international Active Customer Accounts; a 14% increase in the number of international Active Customer Accounts driven in part by our focus on expanding our sales to customers outside of the United States; and revenue, contribution from our recent acquisitions.

	Year Ended December 31,											
	2022		2021		2020		2021 to 2022 Change		2020 to 2021 Change			
	(Dollars in thousands)											
Cost of revenue	\$	2,012,744	\$	1,451,126	\$	846,115	\$	561,618	39 %	\$	605,011	72 %
Gross margin		47 %		49 %		52 %						

	Year Ended December 31,				
	Year Ended December 31,				
	2022	2021	2020	2021 to 2022 Change	2020 to 2021 Change
	Year Ended December 31,				
	(Dollars in thousands)				
	Year Ended December 31,				
	2023				
	2023				
	2023				
	(Dollars in thousands)				

(Dollars in thousands)										
(Dollars in thousands)										
Research and development	Research and development	\$ 1,079,081	\$ 789,219	\$ 530,548	\$ 289,862	37	%	\$ 258,671	49	%
Sales and marketing	Sales and marketing	1,248,032	1,044,618	567,407	203,414	19	%	477,211	84	%
Sales and marketing										
Sales and marketing										
General and administrative										
General and administrative										
General and administrative	General and administrative	517,414	472,460	310,607	44,954	10	%	161,853	52	%
Restructuring costs	Restructuring costs	76,636	—	—	76,636	100	%	—	—	%
Restructuring costs										
Restructuring costs										
Impairment of long-lived assets										
Impairment of long-lived assets										
Impairment of long-lived assets	Impairment of long-lived assets	97,722	—	—	97,722	100	%	—	—	%
Total operating expenses	Total operating expenses	\$ 3,018,885	\$ 2,306,297	\$ 1,408,562	\$ 712,588	31	%	\$ 897,735	64	%
Total operating expenses										
Total operating expenses										

2023 compared to 2022

In 2023, research and development expenses decreased by \$136.3 million, or 13%, compared to the same period last year. The decrease was primarily attributable to a \$140.7 million decrease in total personnel costs, which was mostly driven by the restructuring of our workforce in September 2022, February 2023 and December 2023, that contributed to an 8% decrease in average research and development headcount in 2023. For further detail on the restructuring plans refer to Note 7 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In 2023, sales and marketing expenses decreased by \$225.0 million, or 18%, compared to the same period last year. The decrease was primarily attributable to a \$183.2 million decrease in total personnel costs, which was mostly driven by the restructuring of our workforce in September 2022, February 2023 and December 2023, that contributed to a 14% decrease in average sales and marketing headcount in 2023. Sales and marketing expenses also decreased due to a \$21.5 million decrease in advertising expenses. For further detail on the restructuring plans refer to Note 7 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

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In 2023, general and administrative expenses decreased by \$49.0 million, or 9%, compared to the same period last year. The decrease was primarily attributable to a \$78.1 million decrease in total personnel costs, which was mostly driven by the restructuring of our workforce in September 2022, February 2023 and December 2023, that contributed to a 21% decrease in average general and administrative headcount in 2023. These decreases were partially offset by a \$32.3 million loss on divestiture related to the sale of our ValueFirst business and our IoT asset group. For further detail on the restructuring plans and divestitures, refer to Note 7 and Note 5, respectively, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In 2023, restructuring costs increased by \$89.1 million, or 116%, compared to the same period last year. The increase was primarily attributable to our restructuring activities under the February 2023 Plan and December 2023 Plan, which collectively had a more substantial financial impact than our restructuring activities undertaken in September 2022. For further detail refer to Note 7 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In 2023, impairment of long-lived assets increased by \$222.8 million, or 228%, compared to the same period last year. The increase was primarily attributable to the impairment of Segment intangible assets of \$285.7 million in 2023, as a result of the performance of our Segment segment described in detail in Note 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. This increase was partially offset by a \$62.9 million decrease in impairments of operating right-of-use assets and property and equipment due to fewer office closures in 2023 compared to 2022.

2022 compared to 2021

In 2022, research and development expenses increased by \$289.9 million, or 37%, compared to the same period **last in the prior** year. The increase was primarily attributable to a \$264.4 million increase in personnel costs, net of capitalized costs, largely as a result of a 33% **average** increase in **our average** research and development headcount as we continued to focus on enhancing our **Twilio** Segment and Flex products and strengthening our platform infrastructure.

In 2022, sales and marketing expenses increased by \$203.4 million, or 19%, compared to the same period **last in the prior** year. The increase was primarily attributable to a \$175.5 million increase in personnel costs, largely as a result of a 26% **average** increase in **average** sales and marketing headcount as we continued to expand our sales efforts globally. The increase was also due to a \$13.4 million increase in advertising expenses.

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In 2022, general and administrative expenses increased by \$45.0 million, or 10%, compared to the same period **last in the prior** year. The increase was primarily attributable to a \$32.0 million increase in personnel costs, comprised of a \$29.9 million, or 20%, increase in personnel costs before stock-based compensation, and a \$2.0 million increase in stock-based compensation. The increase in personnel costs were largely a result of a 21% **average** increase in **average** general and administrative headcount to support the growth of our business globally. The increase was also attributable to a \$28.3 million increase in our bad debt expense. These increases were partially offset by a \$21.6 million decrease in charitable contribution expense that we made through Twilio.org.

In 2022, we incurred \$76.6 million in restructuring costs as a result of **the restructuring activities undertaken in** September **Plan approved by the compensation and talent management committee of our board of directors during the third quarter of 2022. For further detail refer to 2022, as described in** Note **6**7 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In 2022, we incurred \$97.7 million in impairment charges related to our operating lease assets and other long-lived assets. The impairment charges were triggered by **the** office closures in **2022. For further detail refer to 2022 as described in** Note **5**6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. **2021**

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Other Expenses, net

	Year Ended December 31,						
	2023	2022	2021	2022 to 2023 Change	2021 to 2022 Change		
	(Dollars in thousands)						
Share of losses from equity method investment	\$ 121,897	\$ 35,315	\$ —	\$ 86,582	245 %	\$ 35,315	100 %
Impairment of strategic investments	46,154	—	—	46,154	100 %	—	— %
Other (income) expenses, net	(47,863)	3,009	45,345	(50,872)	(1,691)%	(42,336)	(93)%
Total other expenses, net	\$ 120,188	\$ 38,324	\$ 45,345	\$ 81,864	214 %	\$ (7,021)	(15)%

2023 compared to 2020 2022

In 2021, **research and development** 2023, other expenses, net, increased by **\$258.7 million** \$81.9 million, or 214%, compared to the same period last year. The increase was primarily attributable to a \$86.6 million increase in our share of losses from our equity method investment and a \$46.2 million increase related to an impairment of a strategic investment, partially offset by a \$53.8 million increase in income related to our investments. For further detail refer to Notes 3 and 11 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

2022 compared to 2021

In 2022, other expenses, net, decreased by \$7.0 million, or **49%** 15%, compared to the same period in the prior year. The decrease was attributable to the \$29.0 million loss from debt extinguishment in 2021 that did not recur in 2022, and a \$13.3 million increase in interest income related to our investments, which was partially offset by a \$35.3 million increase in our share of losses from our equity method investment. The net decrease in the remaining other expenses, net, categories were not significant either individually or in the aggregate. For further detail refer to Notes 3 and 11 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Segment Results of Operations

The following table presents the results for non-GAAP operating income (loss), as reviewed by our CODM, for each of our Communications and Segment segments for the years ended December 31, 2023, 2022 and 2021:

	Year Ended December 31,				
	2023	2022	2021	2022 to 2023 Change	2021 to 2022 Change
	(Dollars in thousands)				

Twilio Communications	\$	841,990	\$	318,680	\$	276,496	\$	523,310	164 %	\$	42,184	15 %
Twilio Segment	\$	(72,430)	\$	(29,695)	\$	(13,006)	\$	(42,735)	144 %	\$	(16,689)	128 %

2023 compared to 2022

In 2023, Communications non-GAAP income from operations increased by \$523.3 million, or 164%, compared to the same period last year. The increase was driven by an increase in Communications revenue of \$308.6 million, as described in the Revenue section above, and a decrease in Communications operating expenses, partially offset by an increase in Communications cost of revenue. The decrease in operating expenses was primarily attributable to a \$254.1 million decrease in total Communications personnel costs, which was mainly due to the restructuring of our workforce in September 2022, February 2023 and December 2023, that contributed to a 16% decrease in average Communications headcount in 2023. The increase in Communications cost of revenue was primarily attributable to a \$19.5 million increase in hosting fees and a \$51.3 million increase in network service providers' costs, net of the impact of hedging instruments, to support the increase in revenue due to the growth in usage of our products by our new and existing customers.

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In 2023, Segment non-GAAP loss from operations increased by \$42.7 million, or 144%, compared to the same period last year. The increase was driven by an increase in Segment operating expenses and cost of revenue, partially offset by an increase in Segment revenue of \$19.0 million, as described in the Revenue section above. The increase in operating expenses was primarily attributable to a \$25.2 million increase in total Segment personnel costs, which was mainly due to a 12% increase in average Segment headcount in 2023, as we continued to focus on enhancing our Segment product and expanding our sales efforts. The increase in Segment cost of revenue was primarily attributable to a \$9.2 million increase in hosting fees and a \$4.9 million increase in amortization of capitalized internal-use software development costs.

2022 compared to 2021

In 2022, Communications non-GAAP income from operations increased by \$42.2 million, or 15%, compared to the same period in the prior year. The increase was driven by an increase in Communications revenue of \$909.2 million, as described in the Revenue section above, offset by an increase in Communications operating expenses and Communications cost of revenue. The increase in operating expenses was primarily attributable to a \$225.0 \$259.6 million increase in Communications personnel costs, net of a \$15.7 million increase in capitalized software development costs, largely as a result of a 54% average 26% increase in our research and development average Communications headcount including as a result of acquisitions, as we continued to focus on enhancing our products and expanding our sales efforts globally, a \$24.9 million increase in bad debt expense, a \$16.2 million increase in software subscription costs, and an \$11.1 million increase in travel related expenses. The increase in Communications cost of revenue was primarily attributable to a \$477.0 million increase in network service providers' costs, including the impact of hedging instruments, a \$30.7 million increase in hosting fees, and a \$14.7 million increase in support costs, all of which supported the growth in usage of our products by new and existing products, introducing new products as well as enhancing product management customers. The net increase in the remaining operating expenses and other technical functions cost of revenue categories were not significant either individually or in the aggregate.

In 2021, sales and marketing expenses 2022, Segment non-GAAP loss from operations increased by \$477.2 million, \$16.7 million, or 84% 128%, compared to the same period in the prior year. The increase was driven by an increase in Segment operating expenses and Segment cost of revenue, offset by an increase in Segment revenue of \$75.3 million, as described in the Revenue section above. The increase in operating expenses was primarily attributable to a \$331.5 \$67.9 million increase in Segment personnel costs, largely as a result of a 74% average 50% increase in sales and marketing average Segment headcount including as a result of acquisitions, as we continued to expand focus on enhancing our products and expanding our sales efforts globally. The increase was also due to a \$43.6 million increase related to the amortization of acquired intangible assets globally, and a \$31.6 million \$9.1 million increase in advertising expenses.

In 2021, general and administrative expenses increased by \$161.9 million, or 52%, compared to the same period costs. The increase in the prior year. The increase Segment cost of revenue was primarily attributable to a \$142.1 million \$10.2 million increase in personnel costs, largely as hosting fees and a result of a 75% average \$5.8 million increase in general and administrative headcount, including as a result of acquisitions, to support the growth of our business globally. The increase was also due to a \$12.2 million increase in charitable contributions that we made through Twilio.org, \$11.2 million increase in professional service fees incurred in the ordinary course of business, offset by a \$14.2 million decrease in professional services related to our acquisitions costs.

Liquidity and Capital Resources

As of December 31, 2022 December 31, 2023, we had cash and cash equivalents of \$651.8 million \$655.9 million and short-term marketable securities of \$3.5 billion \$3.4 billion. Cash and cash equivalents consist of money market funds, reverse repurchase agreements and commercial paper funds. Short-term marketable securities consist primarily of U.S. treasury securities, non-U.S. government securities, high credit quality corporate debt securities and commercial paper. The cash and cash equivalents and short-term marketable securities are held for working capital purposes.

Our principal sources of liquidity have been (i) the net proceeds of \$979.0 million, \$1.4 billion and \$1.8 billion, net of underwriting discounts and offering expenses paid by us, from our public equity offerings in June 2019, August 2020 and February 2021, respectively; (ii) the aggregate net proceeds of approximately \$984.7 million, after deducting purchaser discounts and debt issuance costs paid by us, from the issuance of our 2029 Notes and 2031 Notes in March 2021 (each, as defined below); (iii) the net proceeds of \$228.4 million, after deducting transaction costs paid by us, from settlement of our capped call arrangements in June 2021; and (iv) the payments received from customers using our products.

Our primary uses of cash include operating costs, such as personnel-related costs, network service provider costs, cloud infrastructure costs, facility-related spending, as well as, from time to time, acquisitions, investments and investments, share repurchases. Our principal contractual and other commitments consist of obligations under our 2029 Notes and 2031 Notes, our operating leases for office space that we occupy, sublease or hold to sublease, and contractual commitments to our cloud infrastructure and network service providers. Refer to Note 8, 10, Note 13 14 and Note 16(a) 17(a) to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for discussions of our obligations and commitments related to leases, debt and other purchase obligations.

We may, from time to time, consider acquisitions of, or investments in, complementary businesses, products, services, capital infrastructure or technologies which might affect our liquidity requirements or cause us to secure additional financing or issue additional equity or debt securities. There can be no assurance that additional credit lines or financing instruments will be available in amounts or on terms acceptable to us, if at all.

We believe that our cash, cash equivalents and marketable securities balances, as well as the cash flows generated by our operations, will be sufficient to satisfy our anticipated cash needs for working capital and capital expenditure needs, including authorized share repurchases, for the next 12 months and beyond. However, our belief may prove to be incorrect, and we could utilize our available financial resources sooner than we currently expect. Our future capital requirements and the adequacy of available funds will depend on many factors, including those set forth in Part I, Item 1A, "Risk Factors." We may be required to seek additional equity or debt financing in order to meet these our future capital requirements. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us, or at all. If we are unable to raise additional capital when desired, our business, results of operations and financial condition would be adversely affected. Additionally, Our future capital requirements, the adequacy of our available funds and our cash from operations could also be depend on many factors and are affected by various risks and uncertainties, in connection with the impact of an economic downturn or recession, significant market volatility in the global economy, timing and ability to collect payments from our customers and other risks detailed including those set forth in Part I, Item 1A, "Risk Factors."

Share Repurchase Program

In February 2023, our board of directors authorized a share repurchase program pursuant to which we may repurchase up to \$1.0 billion in aggregate value of our Class A common stock over time. Under stock. Repurchases under the program we may purchase shares from time to time will be made through open market, private transactions privately negotiated transactions, and or other means in compliance with applicable federal securities laws, including through and could include repurchases pursuant to Rule 10b5-1 trading plans. We have discretion in determining the conditions under which shares may be repurchased from time to time. The program is set to expire expires on December 31, 2024. The timing, manner, price and

In the year ended December 31, 2023, we purchased \$672.1 million in aggregate value, or 11.3 million shares, of our common stock on the open market under this program. As of December 31, 2023, approximately \$327.9 million of the originally authorized amount of any repurchases are determined by us at our discretion and depend on a variety of factors, including legal requirements, price and economic market conditions. remains available for future repurchases.

2029 Notes and 2031 Notes

In March 2021, we issued and sold \$1.0 billion aggregate principal amount of senior notes, consisting of \$500.0 million principal amount of 3.625% notes due 2029 (the "2029 Notes") and \$500.0 million principal amount of 3.875% notes due 2031 (the "2031 Notes," and together with the 2029 Notes, the "Notes"). These Notes are described in detail in Note 13 14 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Cash Flows

The following table summarizes our cash flows:

	Year Ended December 31,		
	2022	2021	2020
	(In thousands)		
Cash (used in) provided by operating activities	\$ (254,368)	\$ (58,192)	\$ 32,654
Cash used in investing activities	(616,452)	(2,489,996)	(845,855)
Cash provided by financing activities	45,007	3,096,325	1,493,311
Effect of exchange rate changes on cash, cash equivalents and restricted cash	60	(191)	40
Net (decrease) increase in cash, cash equivalents and restricted cash	\$ (825,753)	\$ 547,946	\$ 680,150

	Year Ended December 31,		
	2023	2022	2021
	(In thousands)		

Cash provided by (used in) operating activities	\$	414,752	\$	(254,368)	\$	(58,192)
Cash provided by (used in) investing activities		228,603		(616,452)		(2,489,996)
Cash (used in) provided by financing activities		(643,610)		45,007		3,096,325
Effect of exchange rate changes on cash, cash equivalents and restricted cash		108		60		(191)
Net (decrease) increase in cash, cash equivalents and restricted cash	\$	(147)	\$	(825,753)	\$	547,946

Cash Flows from Operating Activities

In 2023, cash provided by operating activities consisted primarily of our net loss of \$1.0 billion adjusted for non-cash items, including \$675.9 million of stock-based compensation expense, \$284.4 million of depreciation and amortization expense, \$320.5 million of impairment of intangible assets and other long-lived assets, \$72.9 million amortization of deferred commissions, \$27.0 million of non-cash reduction in our operating right-of-use asset, \$121.9 million of share of losses from equity method investments, \$51.9 million of provision for bad debt and \$230.6 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts receivable and prepaid expenses increased \$141.4 million primarily due to revenue growth, timing of cash receipts and pre-payments of our cloud infrastructure fees and certain operating expenses. Accounts payable and other current liabilities decreased \$39.4 million primarily driven by lower personnel-related accruals due to lower headcount, including a \$25.2 million decrease in the sabbatical benefit accrual driven by lower headcount and the sunseting of the program. The impairment of intangible assets and other long lived assets is described further in Note 6 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

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In 2022, cash used in operating activities consisted primarily of our net loss of \$1.3 billion adjusted for non-cash items, including \$798.6 million of stock-based compensation expense reflecting the impact of the September Plan, 2022 restructuring plan, \$279.1 million of depreciation and amortization expense, \$97.7 million of impairment of operating lease assets and other long-lived assets, \$57.9 million of amortization of deferred commissions, \$47.2 million of non-cash reduction in our operating right-of-use asset, \$35.3 million of share of losses from equity method investments, \$35.0 million of allowance provision for credit losses, bad debt, \$33.2 million of net amortization of investment premium and discount and \$396.6 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts receivable and prepaid expenses increased \$289.0 million primarily due to revenue growth, timing of cash receipts and pre-payments of our cloud infrastructure fees and certain operating expenses. Accounts payable and other current liabilities increased \$105.8 million primarily due to increases in transaction volumes, and the impact from the then new sabbatical employee benefit that we introduced effective July 1, 2022. Operating lease liabilities decreased \$54.5 million due to payments made against our operating lease obligations. Other long-term assets increased \$146.5 million primarily due to an increase in the sales commissions balances related to the growth of our business. The impairment of operating lease assets and other long lived assets is described further in Note 5 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In 2021, cash used in operating activities consisted primarily of our net loss of \$949.9 million adjusted for non-cash items, including \$632.3 million of stock-based compensation expense, \$17.2 million of tax benefit related to release of valuation allowance in connection with our Zipwhip and prior acquisitions, \$258.4 million of depreciation and amortization expense, \$5.8 million amortization of the debt discount and issuance costs related to our long-term debt, \$48.8 million of non-cash reduction to our operating right-of-use asset, \$31.5 million amortization of deferred commissions and \$185.1 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts receivable and prepaid expenses increased \$196.0 million primarily due to revenue growth, the timing of cash receipts and pre-payments for cloud infrastructure fees and certain operating expenses. Accounts payable and other current liabilities increased \$137.7 million primarily due to increases in transaction volumes. Operating lease liability decreased \$49.0 million due to payments made against our operating lease obligations. Other long-term assets increased \$121.2 million primarily due to an increase in the sales commissions balances related to the growth of our business.

Cash Flows from Investing Activities

In 2023, cash provided by investing activities was \$228.6 million primarily consisting of \$247.4 million of maturities and sales of marketable securities and other investments, net of purchases, and \$38.2 million of proceeds from divestitures, net of cash divested, partially offset by \$39.9 million related to capitalized software development costs and \$11.3 million related to purchases of long-lived assets.

In 2022, cash used in investing activities was \$616.5 million primarily consisting of \$498.9 million of purchases of marketable securities and other investments, net of maturities and sales, \$45.8 million related to capitalized software development costs, \$37.4 million of net cash paid to acquire other businesses and \$34.4 million related to purchases of long-lived assets.

In 2021, cash used in investing activities was \$2.5 billion primarily consisting of \$1.9 billion of purchases of marketable securities and other investments, net of maturities and sales, \$491.5 million of net cash paid to acquire other businesses as described in Note 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, \$44.0 million related to capitalized software development costs and \$46.0 million related to purchases of long-lived assets.

Cash Flows from Financing Activities

In 2023, cash used in financing activities was \$643.6 million primarily consisting of \$668.8 million of cash paid to repurchase 11.3 million shares of our common stock in the open market, including related costs, offset by \$43.8 million in proceeds from stock options exercised by our employees and shares issued under our employee stock purchase plan.

In 2022, cash provided by financing activities was \$45.0 million primarily consisting of \$59.6 million in proceeds from stock options exercised by our employees and shares issued under our 2016 Employee Stock Purchase Plan (the "ESPP"), employee stock purchase plan, offset by \$13.4 million in principal payments on debt and finance leases.

In 2021, cash provided by financing activities was \$3.1 billion primarily consisting of \$1.8 billion in net proceeds from our public equity offering, as described in Note 17 to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K; \$984.7 million in net proceeds from the issuance of our 2029 Notes and 2031 Notes and

\$228.4 million in net proceeds from the settlement of the capped call transactions related to our convertible senior notes due 2023, which were fully redeemed during 2021, as described in Note 13 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K; and \$136.2 million in proceeds from stock options exercised by our employees and shares issued under our ESPP.

Segment Information

We have one business activity and operate in one reportable segment.

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Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with U.S. GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, expenses and related disclosures. We evaluate our estimates and assumptions on an ongoing basis. Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Our actual results could differ from these estimates.

We believe that the accounting policies, assumptions and estimates associated with revenue recognition and business combinations have the greatest potential impact on our consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

See Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a discussion of our accounting policies.

Revenue Recognition

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. We enter into contracts that can include various combinations of products and services, which are generally capable of being distinct and accounted for as separate performance obligations. Revenue is recognized net of allowances for credits and any taxes collected from customers, which are subsequently remitted to governmental authorities.

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Our revenue is primarily derived from usage and non-usage based fees. Our usage-based fees are earned from certain of our communications Communications products when customers access our cloud-based platform. Platform access usage is considered a monthly series comprising one performance obligation and usage-based fees are recognized as revenue in the period in which the usage occurs.

Subscription-based Our subscription-based fees are derived from our complex software products, such as Twilio Segment, Twilio Engage, Twilio Flex, Email and Marketing Campaigns, and certain other non-usage-based contracts, such as with the sales of short codes and customer support. Non-usage-based contracts revenue is recognized on a ratable basis over the contractual term which is generally from one to three years.

Our arrangements do not contain general rights of return. However, credits may be issued on a case-by-case basis. Credits are accounted for as variable consideration, are estimated based on historical trends and are recorded against revenue. The contracts do not provide customers with the right to take possession of the software supporting the applications. Amounts that have been invoiced are recorded in accounts receivable and in revenue or deferred revenue depending on whether the revenue recognition criteria have been met.

Business Combinations

Accounting for business combinations requires us to make significant estimates and assumptions, especially at the acquisition date with respect to the estimated acquisition date fair value of tangible and intangible assets acquired and liabilities assumed. We use our best estimates and assumptions to accurately determine the fair value of the tangible and intangible assets acquired and liabilities assumed at the acquisition date as well as the useful lives of those acquired intangible assets. Examples of critical estimates in valuing certain of the intangible assets and goodwill we have acquired include but are not limited to future expected cash flows from acquired developed technologies; expected growth and longevity of existing customer relationships; expected outcomes related to uncertain tax positions and tax related valuation allowances assumed; and selected discount rates. Unanticipated events and circumstances may occur that may affect the accuracy or validity of such assumptions, estimates or actual results.

Recent Accounting Pronouncements Not Yet Adopted

See Note 2(a) to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a discussion of recent accounting pronouncements not yet adopted.

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Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to certain market risks in the ordinary course of our business, including sensitivities as follows:

Interest Rate Risk

We had cash and cash equivalents of \$651.8 million \$655.9 million and short-term marketable securities of \$3.5 billion \$3.4 billion as of December 31, 2022 December 31, 2023. Cash, in any given period, cash and cash equivalents and restricted cash may consist of bank deposits, money market funds, reverse repurchase agreements and commercial paper. Short-term marketable Marketable securities consist primarily of U.S. treasury securities, non-U.S. government securities and high credit quality corporate debt securities and commercial paper. securities. The cash and cash equivalents and short-term marketable securities are held for working capital purposes. Such interest-earning instruments carry a degree of interest rate risk. To date, fluctuations in interest income have not been significant. The primary objective of our investment activities is to preserve principal while maximizing income without significantly increasing risk. We do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate risk exposure. In March 2021, we issued \$1.0 billion aggregate principal amount of our 2029 Notes and 2031 Notes carrying fixed interest rates of 3.625% and 3.875%, respectively. Due to the short-term nature of our investments and fixed rate nature of our debt, we have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates. A hypothetical 10% change in interest rates during any of the periods presented would not have had a material impact on our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Currency Exchange Risks

The functional currency of most of our foreign subsidiaries is the U.S. dollar. The local currencies of our foreign subsidiaries are the Australian dollar, the Bermuda dollar, the Brazilian real, the British pound, the Canadian dollar, the Colombian peso, the Czech Republic koruna, the Euro, the Hong Kong dollar, the Indian rupee, the Japanese yen, the Mexican peso, the Polish zloty, the Serbian dinar, the Singapore dollar and the Swedish krona.

The majority of our subsidiaries remeasure monetary assets and liabilities at period-end exchange rates, while non-monetary items are remeasured at historical rates. Revenue and expense accounts are remeasured at the average exchange rate in effect during the month in which a transaction occurs. If there is a change in foreign currency exchange rates, the conversion of our foreign subsidiaries' financial statements into U.S. dollars would result in a realized gain or loss which is recorded in our consolidated statements of operations included elsewhere in this Annual Report on Form 10-K.

We enter into foreign currency derivative hedging transactions to mitigate our exposure to market risks that may result from changes in foreign currency exchange rates. For further information, refer to Note 7 9 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

A hypothetical 10% change in foreign exchange rates during any of the periods presented would not have had a material impact on our consolidated financial statements.

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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
Twilio Inc.:

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

We have audited the accompanying consolidated balance sheets of Twilio Inc. and subsidiaries (the Company) as of December 31, 2022 December 31, 2023 and 2021, 2022, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2022 December 31, 2023, 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** **December 31, 2023**, 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** **December 31, 2023** and **2021**, **2022**, and the results of its operations and its cash flows for each of the years in the three-year period ended **December 31, 2022** **December 31, 2023**, 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** **December 31, 2023** based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying 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.

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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 revenue recognition

As discussed in Note 2(e) to the consolidated financial statements, the Company's revenue is derived from usage and **non-usage based** **non-usage-based** fees earned from customers accessing the Company's cloud-based platform. As of **December 31, 2022** **December 31, 2023**, the Company recorded **\$3.8 billion** **\$4.2 billion** in revenues, a portion of which related to Programmable Messaging and Programmable Voice APIs. The Company's revenue recognition process is highly automated, and revenue is recorded within the Company's general ledger through reliance on customized and proprietary information technology (IT) systems.

We identified the evaluation of the sufficiency of audit evidence over revenue recognition related to the Company's Programmable Messaging and Programmable Voice APIs as a critical audit matter. This matter required especially subjective auditor judgment because of the large number of information technology (IT) applications involved in the revenue recognition process. Auditor judgment was required in determining the nature and extent of audit evidence obtained over these information systems that process revenue

transactions. Involvement of IT professionals with specialized skills and knowledge was required to assist with the performance and evaluation of certain procedures and determination of IT applications subject to testing.

The following are the primary procedures we performed to address this critical audit matter. We applied auditor judgment to determine the nature and extent of procedures to be performed over revenue recognition. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's Programmable Messaging and Programmable Voice revenue recognition process. We involved IT professionals with specialized skills and knowledge, who assisted in testing controls related to the Company's general information technology and application controls related to the systems utilized within the Company's Programmable Messaging and Programmable Voice revenue recognition process. For a sample of customer agreements, we tested the Company's identification and treatment of significant contract terms, including comparing compared the pricing reflected in the Company's revenue IT system to the contractually agreed upon pricing with the customer. For a sample of revenue transactions, we compared the amounts recognized for consistency with underlying documentation, including contracts with customers. We assessed the recorded revenue by comparing revenue to underlying cash receipts. We evaluated credits issued after year end to assess the revenue recorded within the period. In addition, we evaluated the overall sufficiency of audit evidence obtained by assessing the results of procedures performed, including appropriateness of the nature and extent of such evidence.

/s/ KPMG LLP

We have served as the Company's auditor since 2013.

Santa Clara, San Francisco, California
February 24, 2023 27, 2024

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TWILIO INC.				
Consolidated Balance Sheets				
		As of December 31,		
		2022	2021	
		(In thousands, except share and per share amounts)		
		As of December 31,		
		2023		As of December 31,
				2022
		(In thousands, except share and per share amounts)		
		(In thousands, except share and per share amounts)		
ASSETS	ASSETS			
Current assets:	Current assets:			
Current assets:				
Current assets:				
Cash and cash equivalents				
Cash and cash equivalents				
Cash and cash equivalents	Cash and cash equivalents	\$ 651,752	\$ 1,479,452	
Short-term marketable securities	Short-term marketable securities	3,503,317	3,878,430	
Short-term marketable securities				
Short-term marketable securities				
Accounts receivable, net	Accounts receivable, net	547,507	388,215	
Prepaid expenses and other current assets				
Prepaid expenses and other current assets				

Prepaid expenses and other current assets	Prepaid expenses and other current assets	281,510	186,131
Total current assets	Total current assets	4,984,086	5,932,228
Property and equipment, net	Property and equipment, net	263,979	255,316
Operating right-of-use assets	Operating right-of-use assets	121,341	234,584
Equity method investment	Equity method investment	699,911	—
Intangible assets, net	Intangible assets, net	849,935	1,050,012
Goodwill	Goodwill	5,284,153	5,263,166
Other long-term assets	Other long-term assets	360,899	263,292
Total assets	Total assets	\$ 12,564,304	\$12,998,598

Total assets	
Total assets	

LIABILITIES AND STOCKHOLDERS' EQUITY	LIABILITIES AND STOCKHOLDERS' EQUITY
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Current liabilities:	Current liabilities:
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Current liabilities:	
Current liabilities:	
Accounts payable	
Accounts payable	

Accounts payable	Accounts payable	\$ 124,605	\$ 93,333
Accrued expenses and other current liabilities	Accrued expenses and other current liabilities	490,221	417,503
Deferred revenue and customer deposits	Deferred revenue and customer deposits	139,110	140,389
Operating lease liability, current	Operating lease liability, current	54,222	52,325

Total current liabilities	
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Total current liabilities	
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Total current liabilities	Total current liabilities	808,158	703,550
Operating lease liability, noncurrent	Operating lease liability, noncurrent	164,551	211,253
Finance lease liability, noncurrent	Finance lease liability, noncurrent	21,290	25,132
Long-term debt, net	Long-term debt, net	987,382	985,907
Other long-term liabilities	Other long-term liabilities	23,881	41,290

Total liabilities	Total liabilities	2,005,262	1,967,132
Commitments and contingencies (Note 16)			
Total liabilities			
Total liabilities			
Commitments and contingencies			
(Note 17)			
Commitments and contingencies (Note 17)			
Stockholders' equity:	Stockholders' equity:		
Preferred stock, \$0.001 par value, 100,000,000 shares authorized, none issued	Preferred stock, \$0.001 par value, 100,000,000 shares authorized, none issued	—	—
Preferred stock, \$0.001 par value, 100,000,000 shares authorized, none issued			
Preferred stock, \$0.001 par value, 100,000,000 shares authorized, none issued			
Class A and Class B common stock, \$0.001 par value per share	Class A and Class B common stock, \$0.001 par value per share		
Authorized shares 1,100,000,000 as of December 31, 2022 and 2021; Issued and outstanding shares 185,975,709 and 180,468,099 as of December 31, 2022 and 2021			
		186	180
Authorized shares 1,003,170,181 and 1,100,000,000 as of December 31, 2023 and 2022; Issued and outstanding shares 181,945,771 and 185,975,709 as of December 31, 2023 and 2022			
Authorized shares 1,003,170,181 and 1,100,000,000 as of December 31, 2023 and 2022; Issued and outstanding shares 181,945,771 and 185,975,709 as of December 31, 2023 and 2022			
Authorized shares 1,003,170,181 and 1,100,000,000 as of December 31, 2023 and 2022; Issued and outstanding shares 181,945,771 and 185,975,709 as of December 31, 2023 and 2022			
Additional paid-in capital	Additional paid-in capital	14,055,853	13,169,118
Accumulated other comprehensive loss		(121,161)	(18,141)
Accumulated other comprehensive income (loss)			
Accumulated deficit	Accumulated deficit	(3,375,836)	(2,119,691)
Total stockholders' equity	Total stockholders' equity	10,559,042	11,031,466

Total liabilities and stockholders' equity	Total liabilities and stockholders' equity	\$ 12,564,304	\$12,998,598
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See accompanying notes to consolidated financial statements.

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TWILIO INC.
Consolidated Statements of Operations

		Year Ended December 31,		
		2022	2021	2020
		(In thousands, except share and per share amounts)		
		Year Ended December 31,		
		Year Ended December 31,		
		Year Ended December 31,		
		2023	2023	2023
		2023	2023	2023
		2023	2023	2023
		(In thousands, except share and per share amounts)		
		(In thousands, except share and per share amounts)		
		(In thousands, except share and per share amounts)		
Revenue	Revenue	\$ 3,826,321	\$ 2,841,839	\$ 1,761,776
Cost of revenue	Cost of revenue	2,012,744	1,451,126	846,115
Cost of revenue				
Cost of revenue				
Gross profit				
Gross profit				
Gross profit	Gross profit	1,813,577	1,390,713	915,661
Operating expenses:	Operating expenses:			
Operating expenses:				
Operating expenses:				
Research and development				
Research and development				
Research and development	Research and development	1,079,081	789,219	530,548
Sales and marketing	Sales and marketing	1,248,032	1,044,618	567,407
Sales and marketing				
Sales and marketing				
General and administrative				
General and administrative				
General and administrative	General and administrative	517,414	472,460	310,607
Restructuring costs	Restructuring costs	76,636	—	—
Restructuring costs				
Restructuring costs				
Impairment of long-lived assets				
Impairment of long-lived assets				

Impairment of long-lived assets	Impairment of long-lived assets	97,722	—	—
Total operating expenses	Total operating expenses	3,018,885	2,306,297	1,408,562
Total operating expenses				
Total operating expenses				
Loss from operations				
Loss from operations				
Loss from operations	Loss from operations	(1,205,308)	(915,584)	(492,901)
Other expenses, net:	Other expenses, net:			
Other expenses, net:				
Other expenses, net:				
Share of losses from equity method investment	Share of losses from equity method investment	(35,315)	—	—
Other expenses, net		(3,009)	(45,345)	(11,525)
Share of losses from equity method investment				
Share of losses from equity method investment				
Impairment of strategic investments				
Impairment of strategic investments				
Impairment of strategic investments				
Other income (expenses), net				
Other income (expenses), net				
Other income (expenses), net				
Total other expenses, net	Total other expenses, net	(38,324)	(45,345)	(11,525)
Loss before (provision for) benefit from income taxes		(1,243,632)	(960,929)	(504,426)
(Provision for) benefit from income taxes		(12,513)	11,029	13,447
Total other expenses, net				
Total other expenses, net				
Loss before provision for income taxes				
Loss before provision for income taxes				
Loss before provision for income taxes				
Provision for income taxes				
Provision for income taxes				
Provision for income taxes				
Net loss attributable to common stockholders				
Net loss attributable to common stockholders				
Net loss attributable to common stockholders	Net loss attributable to common stockholders	\$ (1,256,145)	\$ (949,900)	\$ (490,979)
Net loss per share attributable to common stockholders, basic and diluted	Net loss per share attributable to common stockholders, basic and diluted	\$ (6.86)	\$ (5.45)	\$ (3.35)
Net loss per share attributable to common stockholders, basic and diluted				
Net loss per share attributable to common stockholders, basic and diluted				

Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	182,994,038	174,180,465	146,708,663
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted				
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted				

See accompanying notes to consolidated financial statements.

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TWILIO INC.
Consolidated Statements of Comprehensive Loss

	Year Ended December 31,		
	2022	2021	2020
	(In thousands)		
Net loss	\$ (1,256,145)	\$ (949,900)	\$ (490,979)
Other comprehensive (loss) income:			
Unrealized (loss) gain on marketable securities	(83,049)	(27,215)	3,674
Foreign currency translation	(5,587)	(266)	286
Net change in market value of effective foreign currency forward exchange contracts	556	294	—
Share of other comprehensive loss from equity method investment	(14,940)	—	—
Total other comprehensive (loss) income	(103,020)	(27,187)	3,960
Comprehensive loss attributable to common stockholders	\$ (1,359,165)	\$ (977,087)	\$ (487,019)

	Year Ended December 31,		
	2023	2022	2021
	(In thousands)		
Net loss	\$ (1,015,441)	\$ (1,256,145)	\$ (949,900)
Other comprehensive income (loss):			
Unrealized gain (loss) on marketable securities	99,742	(83,049)	(27,215)
Foreign currency translation	5,587	(5,587)	(266)
Net change in market value of effective foreign currency forward exchange contracts	898	556	294
Share of other comprehensive income (loss) from equity method investment	15,553	(14,940)	—
Total other comprehensive income (loss)	121,780	(103,020)	(27,187)
Comprehensive loss attributable to common stockholders	\$ (893,661)	\$ (1,359,165)	\$ (977,087)

See accompanying notes to consolidated financial statements.

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TWILIO INC.
Consolidated Statements of Stockholder's Stockholders' Equity

	Common Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Class A		Class B					
	Shares	Amount	Shares	Amount				
(In thousands, except share amounts)								
Balance as of December 31, 2022	176,358,104	\$ 174	9,617,605	\$ 12	\$ 14,055,853	\$ (121,161)	\$ (3,375,836)	\$ 10,559,042
Net loss	—	—	—	—	—	—	(1,015,441)	(1,015,441)
Exercises of vested stock options	238,474	—	127,982	—	7,344	—	—	7,344
Vesting of restricted stock units	5,939,641	7	—	—	(7)	—	—	—
Value of equity awards withheld for tax liability	(38,655)	—	—	—	(2,565)	—	—	(2,565)
Conversion of shares of Class B common stock into shares of Class A common stock	9,745,587	12	(9,745,587)	(12)	—	—	—	—
Shares of Class A common stock issued and donated to charity	88,408	—	—	—	5,346	—	—	5,346
Unrealized gain on marketable securities	—	—	—	—	—	99,742	—	99,742
Repurchases of shares of Class A common stock including related costs	(11,292,516)	(11)	—	—	—	—	(674,695)	(674,706)
Foreign currency translation	—	—	—	—	—	5,587	—	5,587
Shares issued under ESPP	906,728	—	—	—	36,496	—	—	36,496
Net change in market value of effective foreign currency forward exchange contracts	—	—	—	—	—	898	—	898
Share of other comprehensive loss from equity method investment	—	—	—	—	—	15,553	—	15,553
Stock-based compensation	—	—	—	—	682,241	—	—	682,241
Stock-based compensation - restructuring	—	—	—	—	13,015	—	—	13,015
Balance as of December 31, 2023	181,945,771	\$ 182	—	\$ —	\$ 14,797,723	\$ 619	\$ (5,065,972)	\$ 9,732,552

See accompanying notes to consolidated financial statements.

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TWILIO INC.
Consolidated Statements of Stockholders' Equity

	Common Stock		Common Stock		Accumulated			Total	
	Class A		Class B		Additional	Other	Accumulated		Stockholders'
	Shares	Amount	Shares	Amount		Comprehensive			
	(In thousands, except share amounts)								
Balance as of December 31, 2019	126,882,172	\$ 124	11,530,627	\$ 14	\$ 4,952,999	\$ 5,086	\$ (678,812)	\$ 4,279,411	
Net loss	—	—	—	—	—	—	(490,979)	(490,979)	
Exercises of stock options	2,263,629	2	1,232,099	1	72,514	—	—	72,517	
Vesting of restricted stock units	3,525,401	4	29,007	—	—	—	—	4	
Value of equity awards withheld for tax liability	(34,893)	—	(4,692)	—	(8,778)	—	—	(8,778)	
Conversion of shares of Class B common stock into shares of Class A common stock	2,235,739	2	(2,235,739)	(2)	—	—	—	—	
Equity component from partial settlement of convertible senior notes due 2023	2,902,434	3	—	—	190,757	—	—	190,760	
Shares of Class A common stock issued under ESPP	291,800	1	—	—	32,242	—	—	32,243	
Shares of Class A common stock issued and donated to charity	88,408	—	—	—	18,993	—	—	18,993	

Issuance of shares of Class A common stock in connection with a follow-on public offering, net of underwriters' discounts and issuance costs	5,819,838	6	—	—	1,408,163	—	—	1,408,169
Shares of Class A common stock issued in acquisition	9,263,140	9	—	—	2,532,347	—	—	2,532,356
Value of equity awards assumed in acquisition	—	—	—	—	38,972	—	—	38,972
Shares of Class A common stock issued in acquisition subject to future vesting	258,554	—	—	—	—	—	—	—
Unrealized gain on marketable securities	—	—	—	—	—	3,674	—	3,674
Foreign currency translation	—	—	—	—	—	286	—	286
Stock-based compensation	—	—	—	—	375,037	—	—	375,037
Balance as of December 31, 2020	153,496,222	\$ 151	10,551,302	\$ 13	\$ 9,613,246	\$ 9,046	\$ (1,169,791)	\$ 8,452,665

	Common Stock		Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Class A		Class B					
	Shares	Amount	Shares	Amount				
(In thousands, except share amounts)								
Balance as of December 31, 2021	170,625,994	\$ 168	9,842,105	\$ 12	\$ 13,169,118	\$ (18,141)	\$ (2,119,691)	\$ 11,031,466
Net loss	—	—	—	—	—	—	(1,256,145)	(1,256,145)
Exercises of vested stock options	373,793	—	392,231	—	22,500	—	—	22,500
Vesting of restricted stock units	4,277,266	4	—	—	(4)	—	—	—
Value of equity awards withheld for tax liability	(6,250)	—	—	—	(1,098)	—	—	(1,098)
Conversion of shares of Class B common stock into shares of Class A common stock	616,731	—	(616,731)	—	—	—	—	—
Shares of Class A common stock issued and donated to charity	88,408	—	—	—	9,541	—	—	9,541
Unrealized loss on marketable securities	—	—	—	—	—	(83,049)	—	(83,049)
Foreign currency translation	—	—	—	—	—	(5,587)	—	(5,587)
Shares returned from escrow	(152,239)	—	—	—	(387)	—	—	(387)
Shares issued under ESPP	534,401	2	—	—	37,063	—	—	37,065
Net change in market value of effective foreign currency forward exchange contracts	—	—	—	—	—	556	—	556
Share of other comprehensive loss from equity method investment	—	—	—	—	—	(14,940)	—	(14,940)
Stock-based compensation	—	—	—	—	804,845	—	—	804,845
Stock-based compensation - restructuring	—	—	—	—	14,275	—	—	14,275
Balance as of December 31, 2022	176,358,104	\$ 174	9,617,605	\$ 12	\$ 14,055,853	\$ (121,161)	\$ (3,375,836)	\$ 10,559,042

See accompanying notes to consolidated financial statements.

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TWILIO INC.
Consolidated Statements of Stockholder's Stockholders' Equity

	Common Stock		Common Stock		Additional Paid-In	Accumulated Other		Accumulated	Total Stockholders'
	Class A		Class B			Comprehensive	Deficit		
	Shares	Amount	Shares	Amount		(Loss) Income			
(In thousands, except share amounts)									
Common Stock									
Class A									
Common Stock									
Class A									

		Common Stock							
		Class A							
		Shares							
		Shares							
		Shares							
		(In thousands, except share amounts)							
		(In thousands, except share amounts)							
		(In thousands, except share amounts)							
Balance as of December 31, 2020									
Balance as of December 31, 2020									
Balance as of	Balance as of								
December 31, 2020	December 31, 2020	153,496,222	\$ 151	10,551,302	\$ 13	\$ 9,613,246	\$ 9,046	\$ (1,169,791)	\$ 8,452,665
Net loss	Net loss	—	—	—	—	—	—	(949,900)	(949,900)
Net loss									
Net loss									
Exercises of vested stock options									
Exercises of vested stock options									
Exercises of vested stock options	Exercises of vested stock options	1,779,320	2	509,499	—	87,693	—	—	87,695
Vesting of restricted stock units	Vesting of restricted stock units	3,515,913	4	—	—	(4)	—	—	—
Vesting of restricted stock units									
Vesting of restricted stock units									
Value of equity awards withheld for tax liability									
Value of equity awards withheld for tax liability									
Value of equity awards withheld for tax liability	Value of equity awards withheld for tax liability	(32,002)	—	—	—	(10,388)	—	—	(10,388)
Conversion of shares of Class B common stock into shares of Class A common stock	Conversion of shares of Class B common stock into shares of Class A common stock	1,218,696	1	(1,218,696)	(1)	—	—	—	—
Conversion of shares of Class B common stock into shares of Class A common stock									
Conversion of shares of Class B common stock into shares of Class A common stock									
Equity component from partial settlement and redemption of convertible senior notes due 2023									
Equity component from partial settlement and redemption of convertible senior notes due 2023									

Equity component from partial settlement and redemption of convertible senior notes due 2023	Equity component from partial settlement and redemption of convertible senior notes due 2023	4,846,965	5	—	—	335,637	—	—	335,642
Settlement of capped call, net of related costs	Settlement of capped call, net of related costs	—	—	—	—	225,233	—	—	225,233
Settlement of capped call, net of related costs									
Settlement of capped call, net of related costs									
Shares of Class A common stock issued under ESPP									
Shares of Class A common stock issued under ESPP									
Shares of Class A common stock issued under ESPP	Shares of Class A common stock issued under ESPP	198,926	—	—	—	48,465	—	—	48,465
Shares of Class A common stock issued and donated to charity	Shares of Class A common stock issued and donated to charity	88,408	—	—	—	31,169	—	—	31,169
Shares of Class A common stock issued and donated to charity									
Shares of Class A common stock issued and donated to charity									
Issuance of shares of Class A common stock in connection with a follow-on public offering, net of underwriters' discounts and issuance costs									
Issuance of shares of Class A common stock in connection with a follow-on public offering, net of underwriters' discounts and issuance costs									
Issuance of shares of Class A common stock in connection with a follow-on public offering, net of underwriters' discounts and issuance costs	Issuance of shares of Class A common stock in connection with a follow-on public offering, net of underwriters' discounts and issuance costs	4,312,500	4	—	—	1,765,709	—	—	1,765,713
Shares of Class A common stock issued in acquisition	Shares of Class A common stock issued in acquisition	1,116,816	1	—	—	419,169	—	—	419,170
Shares of Class A common stock issued in acquisition									

Shares of Class A common stock issued in acquisition									
Value of equity awards assumed in acquisition									
Value of equity awards assumed in acquisition									
Value of equity awards assumed in acquisition	Value of equity awards assumed in acquisition	—	—	—	—	1,511	—	—	1,511
Shares of Class A common stock subject to future vesting	Shares of Class A common stock subject to future vesting	84,230	—	—	—	—	—	—	—
Shares of Class A common stock subject to future vesting									
Shares of Class A common stock subject to future vesting									
Unrealized loss on marketable securities									
Unrealized loss on marketable securities									
Unrealized loss on marketable securities	Unrealized loss on marketable securities	—	—	—	—	—	(27,215)	—	(27,215)
Foreign currency translation	Foreign currency translation	—	—	—	—	—	(266)	—	(266)
Foreign currency translation									
Foreign currency translation									
Net change in market value of effective foreign currency forward exchange contracts									
Net change in market value of effective foreign currency forward exchange contracts									
Net change in market value of effective foreign currency forward exchange contracts	Net change in market value of effective foreign currency forward exchange contracts	—	—	—	—	—	294	—	294
Stock-based compensation	Stock-based compensation	—	—	—	—	651,678	—	—	651,678
Stock-based compensation									
Stock-based compensation									
Balance as of December 31, 2021	Balance as of December 31, 2021	170,625,994	\$ 168	9,842,105	\$ 12	\$ 13,169,118	\$ (18,141)	\$ (2,119,691)	\$ 11,031,466
Balance as of December 31, 2021									
Balance as of December 31, 2021									

See accompanying notes to consolidated financial statements.

Consolidated Statements of Stockholder's Equity

See accompanying notes to consolidated financial statements.

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Year Ended December 31,

Year Ended December 31,

2022	2021	2020
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Year Ended December 31,

Year Ended December 31.

2023

2023

2023

CASH FLOWS FROM OPERATING

ACTIVITIES:

CASH FLOWS FROM OPERATING

ACTIVITIES:

CASH FLOWS FROM OPERATING ACTIVITIES:	CASH FLOWS FROM OPERATING ACTIVITIES:
(In thousands)	(In thousands)
Net loss	\$ (1,256,145) \$ (949,900) \$ (490,979)
Adjustments to reconcile net loss to net cash used in operating activities:	
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:	

Adjustments to reconcile net loss to net cash provided by (used in) operating activities:				
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:				
Depreciation and amortization				
Depreciation and amortization				
Depreciation and amortization	Depreciation and amortization	279,127	258,378	149,660
Non-cash reduction to the right-of-use asset	Non-cash reduction to the right-of-use asset	47,160	48,786	38,395
Non-cash reduction to the right-of-use asset				
Non-cash reduction to the right-of-use asset				
Net amortization of investment premium and discount	Net amortization of investment premium and discount	33,165	36,158	6,789
Impairment of long-lived assets due to 2022 office closures				
Impairment of long-lived assets due to 2022 office closures				
Net amortization of investment premium and discount				
Net amortization of investment premium and discount				
Impairment of long-lived assets				
Impairment of long-lived assets				
Impairment of long-lived assets				
Stock-based compensation including restructuring				
Stock-based compensation including restructuring				
Stock-based compensation including restructuring	Stock-based compensation including restructuring	798,560	632,285	360,936
Amortization of deferred commissions	Amortization of deferred commissions	57,913	31,541	13,322
Amortization of deferred commissions				
Amortization of deferred commissions				
Allowance for credit losses		35,012	7,210	13,239
Value of shares of Class A common stock donated to charity		9,541	31,169	18,993
Realized and unrealized losses on equity securities				
Realized and unrealized losses on equity securities				

Realized and unrealized losses on equity securities				
Provision for doubtful accounts				
Provision for doubtful accounts				
Provision for doubtful accounts				
Value of shares of Class A common stock issued and donated to charity				
Value of shares of Class A common stock issued and donated to charity				
Value of shares of Class A common stock issued and donated to charity				
Share of losses from equity method investment	Share of losses from equity method investment	35,315	—	—
Share of losses from equity method investment				
Share of losses from equity method investment				
Impairment of strategic investments				
Impairment of strategic investments				
Impairment of strategic investments				
Loss on net assets divested				
Loss on net assets divested				
Loss on net assets divested				
Loss on extinguishment of debt				
Loss on extinguishment of debt				
Loss on extinguishment of debt	Loss on extinguishment of debt	—	28,965	12,863
Other adjustments	Other adjustments	4,905	2,329	6,823
Other adjustments				
Other adjustments				
Changes in operating assets and liabilities:				
Changes in operating assets and liabilities:				
Changes in operating assets and liabilities:	Changes in operating assets and liabilities:			
Accounts receivable	Accounts receivable	(194,655)	(117,943)	(81,303)
Accounts receivable				
Accounts receivable				
Prepaid expenses and other current assets				
Prepaid expenses and other current assets				
Prepaid expenses and other current assets				

Prepaid expenses and other current assets	Prepaid expenses and other current assets	(94,326)	(78,012)	(11,636)
Other long-term assets	Other long-term assets	(146,458)	(121,225)	(81,908)

Other long-term assets

Other long-term assets

Accounts payable	Accounts payable	30,336	10,191	10,060
Accrued expenses and restructuring costs		75,430	127,554	88,340

Accounts payable

Accounts payable

Accrued expenses and other current liabilities

Accrued expenses and other current liabilities

Accrued expenses and other current liabilities

Deferred revenue and customer deposits

Deferred revenue and customer deposits

Deferred revenue and customer deposits	Deferred revenue and customer deposits	(2,688)	45,634	13,824
Operating lease liabilities	Operating lease liabilities	(54,450)	(49,046)	(33,938)

Operating lease liabilities

Operating lease liabilities

Other long-term liabilities	Other long-term liabilities	(9,832)	(2,266)	(826)
Net cash (used in) provided by operating activities		(254,368)	(58,192)	32,654

Other long-term liabilities

Other long-term liabilities

Net cash provided by (used in) operating activities

Net cash provided by (used in) operating activities

Net cash provided by (used in) operating activities

CASH FLOWS FROM INVESTING ACTIVITIES:	CASH FLOWS FROM INVESTING ACTIVITIES:			
Acquisitions, net of cash acquired and other related payments		(37,410)	(491,522)	(333,591)

CASH FLOWS FROM INVESTING

ACTIVITIES:

CASH FLOWS FROM INVESTING

ACTIVITIES:

Acquisitions, net of cash acquired and payments related to prior period acquisitions				
Acquisitions, net of cash acquired and payments related to prior period acquisitions				
Acquisitions, net of cash acquired and payments related to prior period acquisitions				
Divestitures, net of cash divested				
Divestitures, net of cash divested				
Divestitures, net of cash divested				
Purchases of marketable securities and other investments				
Purchases of marketable securities and other investments				
Purchases of marketable securities and other investments	Purchases of marketable securities and other investments	(1,938,337)	(3,523,232)	(1,636,590)
Proceeds from sales and maturities of marketable securities	Proceeds from sales and maturities of marketable securities	1,439,477	1,614,779	1,183,459
Proceeds from sales and maturities of marketable securities				
Proceeds from sales and maturities of marketable securities				
Capitalized software development costs				
Capitalized software development costs				
Capitalized software development costs	Capitalized software development costs	(45,761)	(43,973)	(33,328)
Purchases of long-lived and intangible assets	Purchases of long-lived and intangible assets	(34,421)	(46,048)	(25,805)
Net cash used in investing activities		(616,452)	(2,489,996)	(845,855)
Purchases of long-lived and intangible assets				
Purchases of long-lived and intangible assets				
Net cash provided by (used in) investing activities				
Net cash provided by (used in) investing activities				
Net cash provided by (used in) investing activities				
CASH FLOWS FROM FINANCING ACTIVITIES:				

CASH FLOWS FROM FINANCING				
ACTIVITIES:				
CASH FLOWS FROM FINANCING ACTIVITIES:	CASH FLOWS FROM FINANCING ACTIVITIES:			
Proceeds from public offerings, net of underwriters' discounts	Proceeds from public offerings, net of underwriters' discounts	—	1,766,400	1,408,750
Proceeds from public offerings, net of underwriters' discounts				
Proceeds from public offerings, net of underwriters' discounts				
Payments of costs related to public offerings				
Payments of costs related to public offerings				
Payments of costs related to public offerings	Payments of costs related to public offerings	(35)	(687)	(637)
Proceeds from issuance of senior notes due 2029 and 2031, net of issuance costs	Proceeds from issuance of senior notes due 2029 and 2031, net of issuance costs	—	984,723	—
Proceeds from issuance of senior notes due 2029 and 2031, net of issuance costs				
Proceeds from issuance of senior notes due 2029 and 2031, net of issuance costs				
Proceeds from settlements of capped call, net of settlement costs				
Proceeds from settlements of capped call, net of settlement costs				
Proceeds from settlements of capped call, net of settlement costs	Proceeds from settlements of capped call, net of settlement costs	—	228,412	—
Principal payments on debt and finance leases	Principal payments on debt and finance leases	(13,423)	(8,295)	(10,784)
Principal payments on debt and finance leases				
Principal payments on debt and finance leases				
Value of equity awards withheld for tax liabilities	Value of equity awards withheld for tax liabilities	(1,098)	(10,388)	(8,778)
Value of equity awards withheld for tax liabilities				

Value of equity awards withheld for tax liabilities				
Repurchases of shares of Class A common stock and related costs				
Repurchases of shares of Class A common stock and related costs				
Repurchases of shares of Class A common stock and related costs				
Proceeds from exercises of stock options and shares of Class A common stock issued under ESPP				
Proceeds from exercises of stock options and shares of Class A common stock issued under ESPP				
Proceeds from exercises of stock options and shares of Class A common stock issued under ESPP	Proceeds from exercises of stock options and shares of Class A common stock issued under ESPP	59,563	136,160	104,760
Net cash provided by financing activities		45,007	3,096,325	1,493,311
Net cash (used in) provided by financing activities				
Net cash (used in) provided by financing activities				
Net cash (used in) provided by financing activities				
Effect of exchange rate changes on cash, cash equivalents and restricted cash				
Effect of exchange rate changes on cash, cash equivalents and restricted cash				
Effect of exchange rate changes on cash, cash equivalents and restricted cash	Effect of exchange rate changes on cash, cash equivalents and restricted cash	60	(191)	40
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	(825,753)	547,946	680,150
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH				
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH				
CASH, CASH EQUIVALENTS AND RESTRICTED CASH—Beginning of period				

CASH, CASH EQUIVALENTS AND RESTRICTED CASH—Beginning of period				
CASH, CASH EQUIVALENTS AND RESTRICTED CASH—Beginning of period	CASH, CASH EQUIVALENTS AND RESTRICTED CASH—Beginning of period	1,481,831	933,885	253,735
CASH, CASH EQUIVALENTS AND RESTRICTED CASH —End of period	CASH, CASH EQUIVALENTS AND RESTRICTED CASH —End of period	\$ 656,078	\$ 1,481,831	\$ 933,885
CASH, CASH EQUIVALENTS AND RESTRICTED CASH —End of period				
Cash paid for income taxes, net				
Cash paid for income taxes, net				
Cash paid for income taxes, net	Cash paid for income taxes, net	\$ 7,413	\$ 6,147	\$ 3,092
Cash paid for interest	Cash paid for interest	\$ 37,500	\$ 20,637	\$ 2,139
NON-CASH INVESTING AND FINANCING ACTIVITIES:				
Cash paid for interest				
Cash paid for interest				
NON-CASH FINANCING ACTIVITIES:				
NON-CASH FINANCING ACTIVITIES:				
NON-CASH FINANCING ACTIVITIES:				
Value of common stock issued and equity awards assumed in acquisition	Value of common stock issued and equity awards assumed in acquisition	\$ —	\$ 420,681	\$ 2,571,328
Value of common stock issued and equity awards assumed in acquisition				
Value of common stock issued and equity awards assumed in acquisition				
Value of common stock issued to settle convertible senior notes due 2023				
Value of common stock issued to settle convertible senior notes due 2023				
Value of common stock issued to settle convertible senior notes due 2023	Value of common stock issued to settle convertible senior notes due 2023	\$ —	\$ 1,704,969	\$ 892,640

RECONCILIATION	RECONCILIATION
OF CASH, CASH	OF CASH, CASH
EQUIVALENTS	EQUIVALENTS
AND	AND
RESTRICTED	RESTRICTED
CASH TO THE	CASH TO THE
CONSOLIDATED	CONSOLIDATED
BALANCE	BALANCE
SHEETS	SHEETS

See accompanying notes to consolidated financial statements.

TWILIO INC.

1. Organization and Description of Business

The Company's headquarters are located in San Francisco, California, and the Company has subsidiaries across North America, South America, Europe, Asia and Australia.

2. Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("U.S. GAAP").

(b) Principles of Consolidation

The consolidated financial statements include the Company and its wholly owned subsidiaries. All significant intercompany balances and transactions have been eliminated.

(c) Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. These estimates are used for, but not limited to, revenue allowances and sales credit reserves; recoverability of long-lived and intangible assets; capitalization and useful life of the Company's capitalized internal-use software development costs; fair value values of acquired intangible assets and goodwill; accruals and contingencies. Estimates are based on historical experience and on various assumptions that the Company believes are reasonable under current circumstances. However, future events are subject to change and best estimates and judgments may require further adjustments, therefore, actual results could differ materially from those estimates. Management periodically evaluates such estimates and they are adjusted prospectively based upon such periodic evaluation.

(d) Concentration of Credit Risk

Financial instruments that potentially expose the Company to a concentration of credit risk consist primarily of cash, cash equivalents, restricted cash, marketable securities and accounts receivable. The Company maintains cash, restricted cash, cash equivalents and marketable securities with financial institutions that management believes are financially sound and have minimal credit risk exposure although the institutions. Certain balances will held by such financial institutions exceed insured limits.

The Company sells its services to a wide variety of customers. If the financial condition or results of operations of any significant customer deteriorates deteriorate substantially, the Company's operating results could be adversely affected. To reduce credit risk, management performs credit evaluations of the financial condition of new customers and periodic re-evaluations, as needed, of existing customers. The Company does not require collateral from its credit customers and maintains reserves for estimated credit losses on customer accounts when considered necessary. Actual credit losses may differ from the Company's estimates. During the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, no customer organization accounted for more than 10% of the Company's total revenue.

As of December 31, 2022 December 31, 2023 and 2021, 2022, no customer organization represented more than 10% of the Company's gross accounts receivable.

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(e) Revenue Recognition

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. The Company enters into contracts that can include various combinations of products and services, which are generally capable of being distinct and accounted for as separate performance obligations. Revenue is recognized net of allowances for credits and any taxes collected from customers, which are subsequently remitted to governmental authorities.

The Company determines revenue recognition through the following steps:

- Identification of the contract, or contracts, with a customer;
- Identification of the performance obligations in the contract;
- Determination of the transaction price;
- Allocation of the transaction price to the performance obligations in the contract; and,
- Recognition of revenue when, or as, the Company satisfies a performance obligation.

Nature of Products and Services

The Company recognizes revenue from its products on either a usage basis or a subscription basis, depending on the nature of the product and the type of customer contract. The Company's reportable segments may contain products that follow either revenue recognition model.

The majority of the Company's revenue in the Communications segment is derived from usage-based usage-based fees. These fees are earned from its communications products when customers access its the Company's cloud-based platform. platform and start using the Company's products. Platform access is considered a monthly series

comprising comprised of one performance obligation and usage-based fees are recognized as revenue in the period in which the usage occurs. Some examples of the usage-based products are Messaging and Voice. For the Messaging products, the fees relate to the number of text messages sent or received. For the Voice products, the fees primarily relate to minutes of call duration. In the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, the revenue from usage-based fees represented 73% 71%, 72% 73% and 76% 72% of total revenue, respectively.

Subscription-based fees are derived from non-usage-based various products on in both the Company's cloud-based platform, such as Twilio Communications and Segment Twilio Engage, Twilio Flex, as well as from sales of other segments. Subscription-based products include products such as short codes, customer support, email API Segment, Engage, Flex, Email and others. Non-usage-based Subscription-based contracts revenue is recognized on a ratable basis over the contractual term which is generally between one to three years. In the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, the revenue from non-usage-based fees represented 27% 29%, 28% 27%, and 24% 28% of total revenue, respectively. When usage-based products are embedded into subscription-based products, the Company charges for each product separately and records the respective revenue into the reportable segment in which each product resides.

No significant judgments are required in determining whether products and services are considered distinct performance obligations and should be accounted for separately versus together, or to determine the stand-alone selling price.

The Company's arrangements do not contain general rights of return. However, credits may be issued on a case-by-case basis. The contracts do not provide customers with the right to take possession of the software supporting the applications. Amounts that have been invoiced are recorded in accounts receivable and in revenue or deferred revenue depending on whether the revenue recognition criteria have been met.

The Company defines U.S. revenue as revenue from customers with IP addresses or mailing addresses at the time of registration in the United States. The Company defines international revenue as revenue from customers with IP addresses or mailing addresses at the time of registration outside of the United States.

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Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents unearned revenue and amounts that were and will be invoiced and recognized as revenue in future periods for non-cancelable multi-year subscription arrangements, arrangements with terms greater than one year. The Company applies the optional exemption of not disclosing the transaction price allocated to the remaining performance obligations for its usage-based contracts and contracts with original duration of less than one year or less year. Revenue allocated to remaining performance obligations for contracts with durations of more greater than one year was \$154.5 \$144.0 million as of December 31, 2022 December 31, 2023, of which 66% 67% is expected to be recognized over the next 12 months and 94% 93% is expected to be recognized over the next 24 months.

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(f) Deferred Revenue and Customer Deposits

Deferred revenue is recorded when a non-cancellable contractual right to bill exists or when cash payments are received in advance of future usage on non-cancelable contracts. Customer refundable prepayments are recorded as customer deposits. As of December 31, 2022 December 31, 2023 and 2021, 2022, the Company recorded \$139.1 \$144.5 million and \$141.5 \$139.1 million as its deferred revenue and customer deposits, respectively, that are included in deferred revenue and customer deposits and other long-term liabilities in the accompanying consolidated balance sheets. During the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, the Company recognized \$120.5 million, \$124.9 million \$70.1 million and \$19.5 \$70.1 million of revenue, respectively, that was included in the deferred revenue and customer deposits balance as of the end of the previous year.

(g) Deferred Sales Commissions

The Company records an asset for the incremental costs of obtaining a contract with a customer, for example, sales commissions that are earned upon execution of contracts. The Company uses the portfolio of data method to determine the estimated period of benefit of capitalized commissions which is generally determined to be up to five years. Amortization expense related to these capitalized costs related to initial contracts, upsells and renewals, is recognized on a straight line basis over the estimated period of benefit of the capitalized commissions. The Company applies the optional exemption of expensing these costs as incurred with amortization periods of one year or less.

Total net capitalized commission costs as of December 31, 2022 December 31, 2023 and 2021, 2022, were \$239.1 \$200.1 million and \$193.4 \$239.1 million, respectively, and are included in prepaid expenses and other current assets and other long-term assets in the accompanying consolidated balance sheets. Amortization of these assets was \$72.9 million, \$57.9 million \$31.5 million and \$13.3 \$31.5 million in the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, respectively, and is included in sales and marketing expense in the accompanying consolidated statements of operations.

(h) Cost of Revenue

Cost of revenue consists primarily of costs of communications services purchased from fees paid to network service providers. Cost of revenue also includes fees to support the Company's cloud infrastructure fees, direct costs of personnel, such as salaries and stock-based stock-based compensation for the our customer care and support services

employees, and **non-personnel** other non-personnel costs, such as **depreciation and amortization expense related to data centers and hosting equipment**, amortization of capitalized internal-use software development costs and **amortization** acquired intangible assets. Costs of **acquired intangibles**, revenue are generally directly attributable to each segment. **Certain costs of revenue are allocated to segments based on methodologies that best reflect the patterns of consumptions of these costs.**

(i) Research and Development Expense

Research and development expenses consist primarily of personnel costs, **outsourced engineering services**, cloud infrastructure fees for staging and development of the Company's products, **outsourced engineering services**, depreciation, amortization of capitalized internal-use software development costs and an allocation of general overhead expenses. The Company capitalizes the portion of its software development costs that meets the criteria for capitalization. **Research and development expenses are generally directly attributable to each segment. Certain research and development expenses are allocated to segments based on methodologies that best reflect the patterns of consumptions of these costs. Certain research and development costs are not allocated to segments because they support company-wide processes and are managed on a company-wide level.**

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(j) Internal-Use Software Development Costs

Certain costs of platform and other software applications developed for internal use are capitalized. The Company capitalizes qualifying internal-use software development costs that are incurred during the application development stage. Capitalization of costs begins when two criteria are met: (i) the preliminary project stage is completed and (ii) it is probable that the software will be completed and used for its intended function. Capitalization ceases when the software is substantially complete and ready for its intended use, including the completion of all significant testing. The Company also capitalizes costs related to specific upgrades and enhancements when it is probable the expenditures will result in additional functionality. Costs incurred for maintenance, minor upgrades and enhancements are expensed. Costs related to preliminary project activities and post-implementation operating activities are also expensed as incurred.

Capitalized costs of platform and other software applications are included in property and equipment. These costs are amortized over the estimated useful life of the software on a straight-line basis over three years. Management evaluates the useful life of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets. The amortization of costs related to the platform applications is included in cost of revenue, while the amortization of costs related to **other** software applications developed for internal use is included in operating expenses.

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(k) Advertising Costs

Advertising costs are expensed as incurred and were **\$71.1 million**, **\$92.6 million**, **\$78.8 million** and **\$47.2** **\$78.8 million** in the years ended **December 31, 2022**, **December 31, 2023**, **2021** **2022** and **2020, 2021**, respectively. Advertising costs are included in sales and marketing expenses in the accompanying consolidated statements of operations.

(l) Restructuring Costs

The Company records **a charge for** restructuring **expenses** when management commits to a restructuring plan, the restructuring plan identifies all significant actions, the period of time to complete the restructuring plan indicates that significant changes to the plan are not likely and employees who are impacted have been notified of the pending involuntary termination.

(m) Stock-Based Compensation

All stock-based compensation to employees **including the purchase rights issued under the Company's 2016 Employee Stock Purchase Plan, as amended (the "2016 ESPP")**, is measured on the grant date based on the fair value of the awards on the date of grant. These costs are recognized as an expense following straight-line attribution method over the requisite service period. The Company uses the Black-Scholes option pricing model to measure the fair value of its stock options and the purchase rights issued under the **ESPP, Company's 2016 Employee Stock Purchase Plan, as amended (the "ESPP")**. The fair value of the restricted stock units is determined using the closing fair value of the Company's Class A common stock on the date of grant and recognized as an expense following straight-line attribution method over the requisite service period. Forfeitures are recorded in the period in which they occur.

Compensation expense for stock options granted to nonemployees is calculated using the Black-Scholes option pricing model and is recognized in expense over the service period.

The Black-Scholes option pricing model requires the use of complex assumptions, which determine the fair value of stock options and the purchase rights issued under **the ESPP**. **If any of the assumptions used in the Black-Scholes model change, stock-based compensation for future options may differ materially compared to that associated with previous grants.** These assumptions include:

- **Fair value of the common stock.** The Company uses the market closing price of its Class A common stock, as reported on the New York Stock Exchange, for the fair value.

- *Expected term.* The expected term represents the period that the stock option or the purchase right is expected to be outstanding. The Company uses the simplified calculation of expected term, which reflects the weighted-average time-to-vest and the contractual life of the stock option or the purchase right;
- *Expected volatility.* Prior to July 1, 2021, July 2021, the expected volatility was derived from an average of the historical volatilities of the Class A common stock of the Company and several other entities with characteristics similar to those of the Company, such as the size and operational and economic similarities to the Company's principal business operations. Beginning with the third quarter in July 2021, the expected volatility was derived from the average of the historical volatilities of the Class A common stock of the Company.

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- *Risk-free interest rate.* The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the time of grant for zero coupon U.S. Treasury notes with maturities approximately equal to the expected term of the stock-based awards; and
- *Expected dividend.* The expected dividend is assumed to be zero as the Company has never paid dividends and has no current plans to pay any dividends on its common stock.

If any of the assumptions used in the Black-Scholes model changes, stock-based compensation for future options may differ materially compared to that associated with previous grants.

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(n) Income Taxes

The Company accounts for income taxes in accordance with authoritative guidance which requires the use of the asset and liability approach. Deferred tax assets and liabilities are recognized for future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, as well as net operating loss and tax credit carry-forwards. Deferred tax amounts are determined by using the enacted tax rates expected to be in effect when the temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. A valuation allowance reduces the deferred tax assets to the amount that is more likely than not to be realized.

The Company recognizes the effect of uncertain income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater more than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

The Company records interest and penalties related to uncertain tax positions in the provision for income taxes in the consolidated statements of operations.

(o) Foreign Currency

The functional currency of the Company's foreign subsidiaries is generally primarily the U.S. dollar. Accordingly, the subsidiaries remeasure monetary assets and liabilities at period-end exchange rates, while non-monetary items are remeasured at historical rates. Revenue and expense accounts are remeasured at the average exchange rate in effect during the month in which the transaction occurs. Remeasurement adjustments are recognized in the consolidated statements of operations as other expense, income (expense), net, in the year of occurrence. Foreign currency transaction gains and losses were insignificant for all periods presented. are included in other income (expenses), net, in the accompanying consolidated statements of operations.

For those entities where the functional currency is a foreign currency, adjustments resulting from translating the financial statements into U.S. dollars are recorded as a component of accumulated other comprehensive income (loss) income as part of the total stockholders' equity. Monetary assets and liabilities denominated in a foreign currency are translated into U.S. dollars at the exchange rate on the balance sheet date. Revenue and expenses are translated at the weighted average exchange rates in effect during the month in which a transaction occurs. the transactions occur. Equity transactions are translated using historical exchange rates. Foreign currency transaction gains and losses are included in other expenses, net, in the accompanying consolidated statements of operations.

(p) Comprehensive Loss Income (Loss)

Comprehensive loss income (loss) refers to net loss and other revenue, expenses, gains and losses that, under generally accepted accounting principles, U.S. GAAP, are recorded as an element of stockholders' equity but are excluded from the calculation of net loss.

(q) Net Loss Per Share Attributable to Common Stockholders

The Company calculates its basic and diluted net loss per share attributable to common stockholders in conformity with the two-class method required for companies with participating securities. The Company has 100,000,000 shares of preferred stock that was authorized but never issued or outstanding.

Class A and Class B common stock are was the only outstanding class of equity securities of the Company. The rights Company as of the holders of Class A and Class B common stock are identical, except with respect to voting and conversion. December 31, 2023. Each share of Class A common stock is entitled to one vote per share.

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Prior to June 28, 2023, the Company also had outstanding equity securities of Class B common stock. On June 28, 2023, each outstanding share and each of the Company's Class B common stock automatically converted (the "Conversion") into one share of the Company's Class A common stock pursuant to the terms of the Company's certificate of incorporation. In addition, upon the Conversion, all outstanding stock options that were exercisable for shares of Class B common stock is entitled prior to 10 votes per share. Shares the Conversion became exercisable for shares of Class A common stock. The Company filed a Certificate of Retirement with the Secretary of State of the State of Delaware effecting the retirement of all of the shares of its Class B common stock may be converted into Class A common stock at any time at that were issued but not outstanding following the option of the stockholder on a one-for-one basis and are automatically converted into Class A common stock upon sale or transfer, subject to certain limited exceptions. The shares are also automatically converted upon reaching the final conversion date of June 28, 2023, as defined in the Company's amended and restated certificate of incorporation. Shares of Class A common stock are not convertible. Conversion.

The Company also has dilutive securities, such as potential or restricted common shares or common stock equivalents, that were excluded from the calculation of diluted net loss per share attributable to common stockholders as their effect was antidilutive in all periods presented. These securities are presented in Note 19 20 to these consolidated financial statements.

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(r) Cash and Cash Equivalents

The Company considers all highly liquid investments with an original maturity of three months or less when purchased to be cash equivalents. Cash equivalents may consist of cash deposited into money market funds, reverse repurchase agreements and commercial paper. All credit and debit card transactions that process as of the last day of each month and settle within the first few days of the subsequent month are also classified as cash and cash equivalents as of the end of the month in which they were processed.

(s) Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded net of the allowance for doubtful accounts. The allowance for doubtful accounts is estimated based on the Company's assessment of its ability to collect on customer accounts receivable. The Company regularly reviews the allowance by considering certain factors such as historical experience, credit quality, age of accounts receivable balances and other known conditions that may affect a customer's ability to pay. In cases where the Company is aware of circumstances that may impair a specific customer's ability to meet their financial obligations, a specific allowance is recorded against amounts due from the customer which reduces the net recognized receivable to the amount the Company reasonably believe believes will be collected. The Company writes-off accounts receivable against the allowance when a determination is made that the balance is uncollectible and collection of the receivable is no longer being actively pursued. As of December 31, 2022 December 31, 2023 and 2021 2022, the allowance for doubtful accounts was not significant to \$42.0 million and \$27.0 million, respectively, and is recorded in accounts receivable, net, in the accompanying consolidated financial statements, balance sheets.

(t) Costs Related to Public Offerings

Costs related to public offerings, which consist of direct incremental legal, printing and accounting fees are deferred until the offering is completed. Upon completion of the offering, these costs are offset against the offering proceeds within the consolidated statements of stockholders' equity.

(u) Property and Equipment

Property and equipment, both owned and under finance leases, is stated at cost less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful life of the related asset. Maintenance and repairs are expensed as incurred.

The useful lives of property and equipment are as follows:

Capitalized internal-use software development costs	3 years
Data center equipment	2 - 4 years
Leasehold improvements	Shorter of 5 years or the remaining lease term
Office equipment	3 years
Furniture and fixtures	5 years
Software	3 years
Assets under financing lease	Shorter of 5 years or the remaining lease term

(v) Leases

The Company determines if an arrangement is or contains a lease at contract inception. The Company presents the operating leases in long-term assets and current and long-term liabilities. Finance lease assets are included in property and equipment, net, and finance lease liabilities are presented in current and long-term liabilities in the accompanying consolidated balance sheets.

Right-of-use ("ROU") assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and lease liabilities are measured and recognized at the lease commencement date based on the present value of the remaining lease payments over the lease term. As the Company's leases do not generally provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at on the commencement date in determining to determine the present value of lease payments. The Company's lease agreements may have lease and non-lease components, which the Company accounts for as a single lease component. When estimating the lease term, the Company includes options to extend or terminate the lease when it is reasonably certain such options will be exercised. Operating lease costs are recognized in operating expenses in the

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accompanying consolidated statements of operations on a straight-line basis over the lease term and variable payments are recognized in the period they are incurred. The Company's lease agreements do not contain any residual value guarantees. Leases with an initial term of 12 months or less are not recorded on the balance sheet.

Within the consolidated statements of cash flows, the Company presents the lease payments made on the operating leases as cash flows from operations and principal payments made on the finance leases as part of financing activities.

(w) Equity Method Investments

Equity investment holdings in which the Company does not have a controlling financial interest but can exercise significant influence over an the investee are accounted for under the equity method. Equity method investments are originally recorded at cost and are subsequently increased or reduced in subsequent periods to reflect the Company's proportionate share of the investee's net earnings or losses of the investee and other comprehensive income or losses, as they those occur. The Company records the investee losses on a three-month lag and up to the carrying amount of the investment plus any advances and loans made to the investee and any financial guarantees made on behalf of the investee. investment. Investments are also increased or decreased by contributions made to and distributions received from the investee. investee, basis difference amortization and other-than-temporary impairments, if any. All costs directly associated with the acquisition of the investment are included in the carrying amount of the investment. Profits or losses related to intra-entity sales are eliminated until realized by the Company or the investee.

The Company determines the difference between its purchase price and its proportionate share of the net assets of the investee, which results in an excess basis in the investment. This excess basis is allocated to the identifiable assets and liabilities of the investee utilizing purchase accounting principles and is used to calculate the amortization of basis differences every reporting period. Basis differences related to intangible assets with determinable economic lives and liabilities are generally amortized on a straight-line basis over the useful lives of the associated assets and liabilities that gave rise to the basis differences, expected term for the liabilities. Basis differences related to finite-lived intangible assets without determinable economic lives are amortized on a straight-line basis.

The Company records its share in earnings and losses of its equity method investee along with adjustments for amortization of basis differences, investee capital transactions and other comprehensive income or loss in its consolidated statements of operations and comprehensive loss, as applicable, on a three-month lag, not amortized.

Equity method goodwill is not amortized or tested for impairment. Instead, the Company evaluates its equity method investments for impairment whenever events or changes in circumstance indicate that the carrying amounts of such investments may be in excess of their fair value. When such indicators exist, the other-than-temporary impairment model is utilized, which considers the severity and duration of a decline in fair value below book value and the Company's ability and intent to hold the investment for a sufficient period of time to allow for recovery. If a decline in the value of an equity method investment is determined to be other than temporary, a loss is recorded in the period of such determination.

(x) Segment Information

The Company determines its operating and reportable segments in accordance with Accounting Standards Codification 280 *Segment Reporting* ("ASC 280"), which requires financial information to be reported based on how the chief operating decision maker ("CODM"), who is the Company's Chief Executive Officer ("CEO"), reviews and manages the business, and establishes criteria for aggregating operating segments into reportable segments. Prior to 2023, the Company had one operating and reportable segment. As a result of the restructuring activities in 2023, as described in Note 8, the Company operated in and reported its results in two reportable segments.

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(y) Business Combinations

The Company records identifiable assets acquired and liabilities assumed at their acquisition date fair values. Goodwill is measured as the excess of the consideration transferred over the fair value of the net assets acquired on the acquisition date. While the Company uses its best estimates and assumptions as part of the purchase price allocation process to accurately value assets acquired and liabilities assumed, these estimates are inherently uncertain and subject to refinement. The authoritative guidance allows a measurement period of up to one year from the date of acquisition of the investment to make adjustments to the preliminary determination and allocation of the excess basis purchase price. As a result, during the measurement period the Company may record adjustments to the fair values of assets acquired and liabilities assumed, with the corresponding offset to goodwill to the extent that it identifies adjustments to the preliminary purchase price allocation. Upon conclusion of the measurement period or final determination of the values of the assets acquired and liabilities assumed, whichever comes first, any subsequent adjustments are recorded in the investment consolidated statements of operations.

(x) (z) Goodwill

Goodwill represents the excess of the aggregate purchase price over the fair value of net identifiable assets acquired in a business combination. Goodwill is not amortized and is tested for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable.

Goodwill is allocated within the operating segments of the Company to the reporting units. Prior to 2023, the Company had one reporting unit. During 2023, as a result of restructuring activities described in Note 8, the Company then had multiple reporting units. The Company reassigns its assets and liabilities to the reporting units based on which reporting units' operations the assets and liabilities were employed in or were related to. Goodwill is reassigned using a relative fair value allocation approach.

The Company has selected November 30 as the date to perform its annual goodwill impairment test. The goodwill impairment test is performed on a reporting unit level. In the valuation of goodwill, management must make assumptions regarding estimated future cash flows to be derived from the respective reporting unit. If these estimates or their related assumptions change in the future, the Company may be required to record an impairment of goodwill. The Company has the option to first perform a qualitative assessment to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying amount. However, the Company may elect to bypass the qualitative assessment and proceed directly to the quantitative impairment tests. The impairment test involves comparing the fair value of the reporting unit to its carrying value, including goodwill. A goodwill impairment will be the amount by which a reporting unit's carrying value exceeds its fair value. The impairment is limited to the carrying amount of goodwill.

(aa) Intangible Assets

Intangible assets recorded by the Company are include the fair values of identifiable intangible assets acquired in business combinations and costs directly associated with securing legal registration of patents and trademarks and acquiring domain names and the fair value of identifiable intangible assets acquired in business combinations. names.

Intangible assets with determinable economic lives are carried at cost, less accumulated amortization. Amortization is computed over the estimated useful life of each asset on a straight-line basis. The Company determines the useful lives of identifiable intangible assets after considering the specific facts and circumstances related to each intangible asset. Factors the Company considers when determining useful lives include the contractual term of any agreement related to the asset, the historical performance of the asset, the Company's long-term strategy for using the asset, any laws or other local regulations which could impact the useful life of the asset and other economic factors, including competition and specific market conditions. Intangible assets without determinable economic lives are carried at cost, not amortized and reviewed for impairment at least annually.

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The useful lives of the intangible assets are as follows:

Developed technology	43 - 7 years
Customer relationships	34 - 10 years
Supplier relationships	5 years
Trade names	3 - 5 years
Patents	20 years
Telecommunication licenses	Indefinite
Trademarks	Indefinite
Domain names	Indefinite

(y) (ab) Goodwill Impairment of Long-Lived Assets

Goodwill represents the excess of the aggregate purchase price over the fair value of net identifiable The Company evaluates its long-lived assets, acquired in a business combination. Goodwill is not amortized including property, equipment and is tested intangible assets, for impairment at least annually or whenever events or changes in circumstances indicate that the carrying value amount of an asset may not be recoverable. Recoverability of assets held and used is measured by a comparison of the carrying amount of an asset or an asset group to estimated undiscounted future net cash flows expected to be generated by the asset or asset group. If such evaluation indicates that the carrying amount of the asset or the asset group is not recoverable, any impairment loss would be equal to the amount the carrying value exceeds the fair value. The Company has

determined that it operates as one reporting unit and has selected November 30 as impairment is allocated to the date to perform its annual impairment test. long-lived assets within the asset group on a pro-rata basis using the relative carrying amounts of the assets. Values of individual long-lived assets are not reduced in excess of their respective fair values.

In the valuation of goodwill, an asset or an asset group, management must make assumptions regarding estimated future revenue and cash flows to be derived from the Company's business, respective asset or asset group, discount rates used and other assumptions. If these estimates or their related assumptions change in the future, the Company may be required to record impairment for of these assets.

The Company has the option to first perform a qualitative assessment to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying amount. However, the Company may elect to bypass the qualitative assessment and proceed directly to the quantitative impairment tests. The impairment test involves comparing the fair value of the reporting unit to its carrying value, including goodwill. A goodwill impairment will be the amount by which a reporting unit's carrying value exceeds its fair value. The impairment is limited to the carrying amount of goodwill.

No goodwill impairment charges have been recorded for any period presented.

(z)(ac) Derivatives and Hedging

The Company is exposed to a wide variety of risks arising from its business operations and overall economic conditions. These risks include exposure to fluctuations in various foreign currencies against its functional currency and can impact the value of cash receipts and payments. The Company minimizes its exposure to these risks through management of its core business activities, specifically, the amounts, sources and duration of its assets and liabilities, and the use of derivative financial instruments. During 2021, the Company started using foreign currency derivative forward contracts, and in the future may also use foreign currency option contracts.

Foreign currency derivative forward contracts involve fixing the exchange rate for delivery of a specified amount of foreign currency on a specified date. These agreements are typically cash settled in U.S. dollars for their fair value at or close to their settlement date. Foreign currency option contracts will require the Company to pay a premium for the right to sell a specified amount of foreign currency prior to the maturity date of the option. The Company does not enter into derivative financial instruments trading for speculative purposes.

Derivative instruments are carried at fair value and recorded as either an asset or a liability until they mature. Gains and losses resulting from changes in fair value of these instruments are accounted for depending on the use of the derivative and whether it is designated and qualifies for hedge accounting. For derivative instruments designated as cash flow hedges, gains or losses are initially recorded in accumulated other comprehensive income ("OCI") in (loss) on the balance sheet, then reclassified into the statement of operations in the period in which the derivative instruments mature. These realized gains and losses are recorded within the same financial statement line item as the hedged transaction.

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The Company's foreign currency derivative contracts are classified within Level 2 of the fair value hierarchy because the valuation inputs are based on quoted prices and market observable data of similar instruments in active markets, such as currency spot and forward rates.

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(aa)(ad) Impairment of Long-Lived Assets Share Repurchases

The Company evaluates its long-lived assets, including property, equipment and intangible assets, for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets held and used is measured by a comparison of the carrying amount of an asset or an asset group elected to estimated undiscounted future net cash flows expected to be generated by the asset or asset group. If such evaluation indicates that the carrying amount of the asset or the asset group is not recoverable, any impairment loss would be equal to the amount the carrying value exceeds the fair value.

(ab) Business Combinations

The Company recognizes identifiable assets acquired and liabilities assumed at their acquisition date fair values. Goodwill is measured as record the excess of the consideration transferred repurchase price over the fair par value of assets acquired the repurchased shares of its Class A common stock in accumulated deficit, along with the associated transaction costs and liabilities assumed excise taxes. Immediately upon repurchase, the shares are retired and returned to the status of unauthorized and unissued.

On August 16, 2022, the Inflation Reduction Act of 2022 (the "IR Act") was signed into federal law. The IR Act provides for, among other things, a new U.S. federal 1% excise tax on certain repurchases of stock by publicly traded U.S. domestic corporations and certain U.S. domestic subsidiaries of publicly traded foreign corporations occurring on or after January 1, 2023. The excise tax is imposed on the acquisition date. While the Company uses repurchasing corporation itself, not its best estimates and assumptions as part shareholders from which shares are repurchased. The amount of the purchase price allocation process to accurately value assets acquired and liabilities assumed, these estimates are inherently uncertain and subject to refinement. The authoritative guidance allows a measurement period of up to one year from the date of acquisition to make adjustments to the preliminary allocation excise tax is generally 1% of the purchase price. As a result, during the measurement period the Company may record adjustments to the fair values of assets acquired and liabilities assumed, with the corresponding offset to goodwill to the extent that it identifies adjustments to the preliminary purchase price allocation.

Upon conclusion market value of the measurement period or final determination shares repurchased at the time of the values of the assets acquired and liabilities assumed, whichever comes first, any subsequent adjustments are recorded in the consolidated statements of operations.

(ac) Segment Information

The Company's Chief Executive Officer is the chief operating decision maker who reviews the Company's financial information presented on a consolidated basis repurchase. However, for purposes of allocating resources and evaluating calculating the Company's financial performance. The Company had no segment managers excise tax, repurchasing corporations are permitted to net the fair market value of certain new stock issuances against the fair market value of stock repurchases during the periods presented. Accordingly, same taxable year. In addition, certain exceptions apply to the Company has determined that it operates in a single operating and reportable segment, excise tax.

(ad) (ae) Fair Value of Financial Instruments

The accounting guidance for fair value provides a framework for measuring fair value, clarifies the definition of fair value, and expands disclosures regarding fair value measurements. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in an orderly transaction between market participants at the reporting date. The accounting guidance establishes a three-tiered hierarchy, which prioritizes the inputs used in the valuation methodologies in measuring fair value as follows:

- Level 1 Inputs: Unadjusted quoted prices in active markets for identical assets or liabilities accessible to the reporting entity at the measurement date.
- Level 2 Inputs: Other than quoted prices included in Level 1 inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the asset or liability.
- Level 3 Inputs: Unobservable inputs for the asset or liability used to measure fair value to the extent that observable inputs are not available, thereby allowing for situations in which there is little, if any, market activity for the asset or liability at measurement date.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

The Company applies fair value accounting for all financial instruments on a recurring basis. The Company's financial instruments, which include cash, restricted cash, cash equivalents, accounts receivable and accounts payable are recorded at their carrying amounts, which approximate their fair values due to their short-term nature. Marketable securities consist of U.S. treasury securities, non-U.S government securities, high credit quality corporate debt securities and commercial paper. All marketable securities are considered to be available-for-sale and recorded at their estimated fair values. Unrealized gains and

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losses for available-for-sale securities are recorded in other comprehensive loss. In valuing these items, the Company uses inputs and assumptions that market participants would use to determine their fair value, utilizing valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs.

The fair values of the senior notes due 2029 and 2031 ("2029 Notes" and "2031 Notes," respectively) are determined based on their respective closing prices on the last trading day of the reporting period and are classified as Level 2 in the fair value hierarchy.

The carrying value of the strategic investments, which consist of restricted equity securities of a publicly held company and equity securities of privately held companies, is determined under the measurement alternative on a non-recurring basis adjusting for observable changes in fair value. The Company does not have a controlling interest nor it can exercise significant influence over any of these entities.

The Company regularly reviews changes to the rating of its debt securities by rating agencies and monitors the surrounding economic conditions to assess the risk of expected credit losses. As of December 31, 2022 December 31, 2023, the risk of expected credit losses was not significant.

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Impairments are considered to be other than temporary if they are related to deterioration in credit risk or if it is likely that the security will be sold before the recovery of its cost basis. Realized gains and losses and declines in value deemed to be other than temporary are determined based on the specific identification method and are reported in other expenses, net.

(ae) (af) Recently Adopted Issued Accounting Guidance, Not yet Adopted

In October 2021, June 2022, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update No. ("ASU") 2021-08, "Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers," which requires that an entity recognize and measure contract assets and contract liabilities acquired in a business combination in accordance with ASC 606, "Revenue from Contracts with Customers." At the acquisition date, an acquirer should account for the related revenue contracts as if it had originated the contracts. Generally, this should result in an acquirer recognizing and measuring the acquired contract assets and contract

(af) Recently Issued Accounting Guidance, Not yet Adopted

In November 2023, the FASB issued ASU 2023-07, “Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures,” which is intended to improve reportable segment disclosures. The ASU expands segment disclosures by requiring disclosure of significant segment expenses that are regularly provided to the CODM and included within each reported measure of segment profit or loss. It also requires disclosure of the amount and description of the composition of other segment items and interim disclosures of a reportable segment's profit or loss and assets. ASU 2023-07 is effective for fiscal years beginning after December 15, 2023, and interim periods within fiscal years beginning after December 15, 2024 with retrospective application required. Early adoption is permitted. The Company is evaluating the impact of the adoption of this guidance to on its consolidated financial statements.

In December 2023, the FASB issued ASU 2023-09, "Income Taxes (Topic 740): Improvements to Income Tax Disclosures," which requires disclosure of disaggregated income taxes paid, prescribes standard categories for the components of the effective tax rate reconciliation and modifies other income tax related disclosures. ASU 2023-09 is effective for annual periods beginning after December 15, 2024 and may be applied on a prospective basis. Early adoption is permitted. The Company is evaluating the impact of the adoption of this guidance on its consolidated financial statements.

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Financial Assets

		Amortized		Gross Unrealized		Gross Unrealized		Fair Value Hierarchy as of December 31, 2022					Fair Value Hierarchy as of December 31, 2023									
		Cost or Carrying Value	Gross Unrealized Gains	Less Than 12 Months	Less Than 12 Months	Less Than 12 Months	More Than 12 Months	Level 1	Level 2	Level 3	Aggregate Fair Value			Amortized	Gross Unrealized	Gross Unrealized	Level 1	Level 2	Aggregate Fair Value			
		Value	Level 1											Value	Gains	12 Months	12 Months	1	2	Fair Value		
	Financial Assets:	(In thousands)										Financial Assets:	(In thousands)									
Cash and cash equivalents:	Cash and cash equivalents:																					
Money market funds	Money market funds	\$ 46,610	\$ —	\$ —	\$ —	\$ 46,610	\$ —	\$ —	\$ —	\$ 46,610												
Reverse repurchase agreements		200,000	—	—	—	—	—	200,000	—	200,000												
Commercial paper		2,249	—	—	—	—	—	2,249	—	2,249												
Money market funds																						
Money market funds																						
Total included in cash and cash equivalents																						

Total included in cash and cash equivalents									
Total included in cash and cash equivalents	Total included in cash and cash equivalents	248,859	—	—	—	46,610	202,249	—	248,859
Marketable securities:	Marketable securities:								
Debt securities:									
Debt securities:									
Debt securities:									
U.S. Treasury securities									
U.S. Treasury securities									
U.S. Treasury securities	U.S. Treasury securities	481,463	—	(1,269)	(11,347)	468,847	—	—	468,847
Non-U.S. government securities	Non-U.S. government securities	149,901	—	(33)	(6,304)	143,564	—	—	143,564
Corporate debt securities and commercial paper	Corporate debt securities and commercial paper	2,973,844	307	(12,202)	(71,043)	5,000	2,885,906	—	2,890,906
Total debt securities									
Equity securities									
Total marketable securities	Total marketable securities	3,605,208	307	(13,504)	(88,694)	617,411	2,885,906	—	3,503,317
Total financial assets	Total financial assets	\$ 3,854,067	\$ 307	\$ (13,504)	\$ (88,694)	\$ 664,021	\$ 3,088,155	\$ —	\$ 3,752,176

		Amortized Cost or Carrying Value		Gross Unrealized Gains		Gross Unrealized Losses Less Than 12 Months		Fair Value Hierarchy as of December 31, 2021			Aggregate Fair Value	
								Level 1	Level 2	Level 3		
		Value	Level 1	Value	Level 1	Value	Level 1	Value	Value	Value	Value	Value
Financial Assets:	Financial Assets:	(In thousands)										
Cash and cash equivalents:	Cash and cash equivalents:											
Money market funds	Money market funds	\$ 786,548	\$ —	\$ —	\$ 786,548	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 786,548	
Money market funds												
Money market funds												
Reverse repurchase agreements												

Commercial paper	Commercial paper	46,076	—	—	—	46,076	—	46,076
Total included in cash and cash equivalents	Total included in cash and cash equivalents	832,624	—	—	786,548	46,076	—	832,624
Marketable securities:	Marketable securities:							
U.S. Treasury securities	U.S. Treasury securities							
U.S. Treasury securities	U.S. Treasury securities	375,305	6	(2,561)	372,750	—	—	372,750
Non-U.S. government securities	Non-U.S. government securities	221,641	—	(1,355)	220,286	—	—	220,286
Corporate debt securities and commercial paper	Corporate debt securities and commercial paper	3,300,326	960	(15,892)	31,000	3,254,394	—	3,285,394
Total marketable securities	Total marketable securities	3,897,272	966	(19,808)	624,036	3,254,394	—	3,878,430
Total financial assets	Total financial assets	\$ 4,729,896	\$ 966	\$ (19,808)	\$ 1,410,584	\$ 3,300,470	\$ —	\$ 4,711,054

Debt Securities

The aggregate **related** fair value of corporate debt securities with unrealized losses is **\$2.66** **\$1.5** billion as of **December 31, 2022** **December 31, 2023**, of which **\$2.04** **billion** **\$415.2** million have been in an unrealized loss position for more than 12 months and **\$1.1** billion have been in an unrealized loss position for less than 12 months. The aggregate fair value of corporate debt securities with unrealized losses was **\$2.7** billion as of **December 31, 2022**, of which **\$2.0** billion were in an unrealized loss position for more than 12 months and **\$620.5** million have been were in an unrealized loss position for less than 12 months. Unrealized losses related to other investments as of **December 31, 2022**, **December 31, 2023** and for all investments as of **December 31, 2021** **2022** were not significant.

The **Company's** **Company's** primary objective when investing excess cash is preservation of capital, hence the **Company's** **marketable** **Company's** **debt** securities primarily consist of U.S. Treasury Securities, non-U.S government securities, high credit quality corporate debt securities and commercial paper. Because the Company views its **marketable** **debt** securities as available to support current operations, it has classified all available for sale securities as short-term. As of **December 31, 2022** **December 31, 2023** and **2021**, **2022**, for **fixed income** **all** securities that were in

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unrealized loss positions, the Company has determined that (i) it does not have the intent to sell any of these investments, and (ii) it is not more likely than not that it will be required to sell any of these investments before recovery of the entire amortized cost basis. In addition, as of **December 31, 2022** **December 31, 2023** and **2021**, **2022**, the Company anticipates that it will recover the entire amortized cost basis of such **fixed income** **debt** securities before maturity.

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Interest earned on marketable securities was **\$64.6** **million** **\$77.7** million, **\$55.7** **million** **\$64.6** million and **\$32.4** **million** **\$55.7** million in the years ended **December 31, 2022** **December 31, 2023**, **2021** **2022** and **2020**, **2021**, respectively. The interest is recorded as other **expenses**, **income** (expenses), net, in the accompanying consolidated statements of operations.

The following table summarizes the contractual maturities of marketable securities:

		As of December 31, 2022		As of December 31, 2021	
		Amortized Cost	Aggregate Fair Value	Amortized Cost	Aggregate Fair Value
		As of December 31, 2023		As of December 31, 2022	
		Amortized Cost	Aggregate Fair Value	Amortized Cost	Aggregate Fair Value
Financial Assets:	Financial Assets:	(In thousands)		(In thousands)	
Less than one year	Less than one year	\$ 1,943,836	\$ 1,909,218	\$ 1,084,751	\$ 1,085,006
One to three years	One to three years	1,661,372	1,594,099	2,812,521	2,793,424
Total	Total	\$ 3,605,208	\$ 3,503,317	\$ 3,897,272	\$ 3,878,430

Equity Securities

The equity securities consist of shares of a publicly traded company that were received as consideration in a divestiture transaction described further in Note 5.

Strategic Investments

As of December 31, 2022, December 31, 2023 and 2021, 2022, the Company held strategic investments with an aggregate carrying value of \$76.9 million, \$30.7 million and \$68.3 million, respectively, recorded as other long-term assets in the accompanying consolidated balance sheets. The carrying value of these securities is determined under the measurement alternative on a non-recurring basis and adjusted for observable changes in fair value. In the year ended December 31, 2023, the Company remeasured to fair value one of its strategic investments acquired in 2021 due to an assessed impairment. The fair value measurement of the strategic investment is classified as Level 2 in the fair value hierarchy and the primary input used in the fair value measurement was the publicly available stock price of the issuer's unrestricted security of the same class. The impairment loss of \$46.2 million is recorded in other expenses, net, in the accompanying consolidated statement of operations for the year ended December 31, 2023. There were no other impairments or other significant adjustments related to these securities recorded in the three years ended December 31, 2022, December 31, 2023, 2022 and 2021, and 2020, related to these securities.

Financial Liabilities

The Company's financial liabilities that are measured at fair value on a recurring basis consist of foreign currency derivative liabilities and are classified as Level 2 financial instruments in the fair value hierarchy. As of December 31, 2022, December 31, 2023 and 2021, 2022, the aggregate fair value of these liabilities and the associated unrealized losses were not significant.

The Company's financial liabilities that are not measured at fair value on a recurring basis are its 2029 Notes and its 2031 Notes. As of December 31, 2023, the fair value of the 2029 Notes and 2031 Notes were \$462.4 million and \$452.3 million, respectively. As of December 31, 2022, the fair value of the 2029 Notes and 2031 Notes were \$410.9 million and \$399.4 million, respectively. As of December 31, 2021, the fair value of the 2029 Notes and 2031 Notes were \$510.2 million and \$512.8 million, respectively.

4. Property and Equipment

Property and equipment consisted consist of the following:

As of December 31,		As of December 31,	
2022		2021	
(In thousands)		(In thousands)	
As of December 31, 2023		As of December 31, 2022	
(In thousands)		(In thousands)	

Capitalized internal-use software developments costs	Capitalized internal-use software developments costs	\$ 257,983	\$ 198,589
Data center equipment ⁽¹⁾	Data center equipment ⁽¹⁾	100,207	77,946
Leasehold improvements	Leasehold improvements	91,660	85,297
Office equipment	Office equipment	70,815	58,636
Furniture and fixtures	Furniture and fixtures	14,935	15,360
Software	Software	14,675	10,506
Total property and equipment	Total property and equipment	550,275	446,334
Less: accumulated depreciation and amortization ⁽¹⁾	Less: accumulated depreciation and amortization ⁽¹⁾	(286,296)	(191,018)
Total property and equipment, net	Total property and equipment, net	\$ 263,979	\$ 255,316

⁽¹⁾ Data center equipment contains includes \$72.4 million and \$63.0 million in assets held under finance leases as of December 31, 2022 December 31, 2023 and 2021, respectively. 2022. Accumulated depreciation and amortization contains \$41.2 includes \$55.9 million and \$26.8 \$41.2 million of accumulated depreciation for assets held under finance leases as of December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

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Depreciation and amortization expense was \$71.7 \$89.9 million, \$59.6 \$71.7 million and \$51.1 \$59.6 million for the years ended December 31, 2022 December 31, 2023, 2022 and 2021, and 2020, respectively.

The Company capitalized \$57.2 million, \$65.4 million \$63.1 million and \$47.1 \$63.1 million in internal-use software development costs in the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, respectively.

5. Divestitures

In July 2023, the Company sold its ValueFirst business, which operated an enterprise communications platform in India, for a total cash sales price of \$45.5 million, or \$38.2 million in proceeds, net of cash divested. As part of the transaction, the Company divested \$17.4 million of tangible net assets, \$17.3 million of intangible assets and \$34.6 million of goodwill. The sale resulted in a loss of \$28.8 million, which is recorded within general and administrative expenses in the accompanying consolidated statement of operations for the year ended December 31, 2023. The Company also recorded an additional \$3.3 million of divestiture-related expenses in the same period.

Separately, in June 2023, the Company sold its Internet of Things ("IoT") asset group for stock consideration of \$15.8 million. The loss on divestiture and related expenses were not significant.

6. Impairment

Operating right-of-use assets

In the second quarter of 2022, the Company announced its decision to become a remote-first company whereby employees would have the flexibility to work remotely on a permanent basis. As part of the new operating strategy, in the third quarter of 2022, the Company permanently closed several of its offices in 2023 and 2022, which triggered a

reassessment of long-lived asset groupings required the Company to reassess its operating right-of-use ("ROU") assets and a test the associated leasehold improvements and property and equipment for impairment. The Company determined that the carrying amounts of the impacted ROU these assets and the associated leasehold improvements and property and equipment exceeded their respective fair values. The Company engaged a third-party expert to assist with the valuation analysis. The Company regularly assesses recoverability of all impacted ROU assets and the related long-lived asset categories for indicators of impairment. In the year years ended December 31, 2022, December 31, 2023 and 2022, the Company recorded a \$34.8 million and \$97.7 million of impairment, expense respectively, related to its permanently closed offices. The impairment is recorded in the impairment of long-lived assets line item in the accompanying consolidated statements of operations for the years ended December 31, 2023 and 2022.

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Intangible assets

In the fourth quarter of 2023, the Company identified a change in its Segment reportable segment's performance which it deemed to be an indicator that the carrying amounts of certain long-lived assets within the segment may not be recoverable. The Company performed a recoverability assessment and a fair value measurement of the impacted asset group and concluded that the asset group was impaired. The Company engaged a third-party expert to assist with the valuation analysis. The impairment was allocated to the assets within the impacted asset group reducing the respective carrying amounts of the assets as of the December 1, 2023, measurement date, as follows:

	Total Impairment Allocation
	(In thousands)
Developed technology	\$ 209,350
Customer relationships	76,361
Total impairment	\$ 285,711

The impairment is recorded within the impairment of long-lived assets line item in the accompanying consolidated statement of operations related for the year ended December 31, 2023.

The Company used a relief-from-royalty method to these office closures, estimate the fair values of the developed technology and the trade name and a distributor method to estimate the fair value of customer relationships. The trade name intangible asset was not impaired.

No other significant impairments were recorded during the years ended 2023, 2022 2021 or 2020, 2021.

6.7. Restructuring Activities

During In February 2023, the third quarter of 2022, the compensation and talent management committee of the Company's board of directors approved Company announced a restructuring workforce reduction plan (the "February 2023 Plan") that was designed to reduce operating costs, improve operating margins and shift the Company's selling capacity to accelerate software sales (the "September Plan"), profitability. The September February 2023 Plan eliminated approximately 11% 17% of the Company's workforce.

The Company recorded restructuring charges execution of \$76.6 million for the February 2023 Plan was substantially completed in the first quarter of 2023. For the year ended December 31, 2022 December 31, 2023, restructuring charges related to the February 2023 Plan were \$141.1 million, which consisted of \$62.3 \$130.0 million related to employee transition, notice period, severance, payments, employee benefits and facilitation costs; costs, and \$14.3 \$11.1 million related to vesting of the employee stock-based stock based compensation awards. The execution of the September Plan was substantially completed as of December 31, 2022. However, potential employment position eliminations in certain jurisdictions outside of the United States are subject to extended consultation periods mandated by the local jurisdictions. The Company will record Furthermore, the restructuring charges consisted of \$108.9 million related to the eliminated positions Communications reportable segment, \$9.4 million related to the Segment reportable segment and \$22.8 million included in those jurisdictions upon finalization of the respective consultation periods, corporate costs. The estimated remaining expenses related to the February 2023 Plan are not expected to be significant but the actual amounts may differ materially from expectations. significant.

The following table summarizes the Company's restructuring liability related to the February 2023 Plan that is included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet: sheets:

	Workforce Reduction Costs	Facilitation Costs	Total
		(In thousands)	
Balance as of December 31, 2021	\$ —	\$ —	\$ —
	Workforce Reduction Costs		
	Workforce Reduction Costs		
	Workforce Reduction Costs		
		(In thousands)	
		(In thousands)	
		(In thousands)	
Balance as of December 31, 2022			

Balance as of December 31, 2022				
Balance as of December 31, 2022				
Restructuring charges				
Restructuring charges				
Restructuring charges	Restructuring charges	60,553	1,808	62,361
Cash payments	Cash payments	(60,053)	(1,242)	(61,295)
Balance as of December 31, 2022	\$	500	\$	566
Cash payments				
Cash payments				
Balance as of December 31, 2023				
Balance as of December 31, 2023				
Balance as of December 31, 2023				

The \$14.3 \$11.1 million expense expenses related to vesting of the employee stock-based compensation awards is recorded in the additional-paid-in capital in the accompanying consolidated statement of stockholders' equity.

In December 2023, the Company announced a workforce restructuring plan that was designed to streamline operations and accelerate the Company's path to profitable growth (the "December 2023 Plan"). The December 2023 Plan eliminated approximately 5% of the Company's workforce. Restructuring charges related to the December 2023 Plan were not significant.

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In September 2022, the Company announced a workforce restructuring plan that was designed to reduce operating costs and improve operating margins (the "September 2022 Plan"). The September 2022 Plan eliminated approximately 11% of the Company's workforce. In the year ended December 31, 2022, related to the September 2022 Plan, the Company recorded \$76.6 million of restructuring charges, including a \$14.3 million expense related to vesting of the employee stock-based compensation awards, in its accompanying consolidated statement of operations. The restructuring charges consisted of \$67.4 million related to the Communications reportable segment, \$1.6 million related to the Segment reportable segment and \$7.6 million included in corporate costs.

The following table summarizes the Company's restructuring liability related to the September 2022 Plan that is included in accrued expenses and other current liabilities in the accompanying consolidated balance sheet as of December 31, 2022:

	Workforce Reduction		
	Costs	Facilitation Costs	Total
	(In thousands)		
Balance as of December 31, 2021	\$ —	\$ —	\$ —
Restructuring charges	60,553	1,808	62,361
Cash payments	(60,053)	(1,242)	(61,295)
Balance as of December 31, 2022	\$ 500	\$ 566	\$ 1,066

September 2022 Plan restructuring charges incurred in 2023 were not significant. No amounts were outstanding as of December 31, 2023 related to this plan.

8. Reorganization and Segment Reporting

In February 2023, the Company announced a reorganization of its business into two business units, Twilio Communications and Twilio Data & Applications (the "Reorganization"). With the Reorganization, the Company changed the organizational structure of its business, including the way management operated the business. In the second quarter of 2023, the Company concluded that it had two operating and reportable segments: Twilio Communications ("Communications") and Twilio Data & Applications ("Data & Applications").

In the fourth quarter of 2023, the Company further reorganized its business by shifting certain components of the business between its operating segments. This reorganization did not impact the segment structure of the business. The impact on the reporting unit structure is described in Note 12.

After the reorganization, the Company's Data & Applications segment consisted of its Segment and Engage products and, therefore, the reportable segment was renamed from Data & Applications to Twilio Segment ("Segment").

Twilio Communications: The Communications segment consists of a variety of application programming interfaces ("APIs") and software solutions to optimize communications between Twilio customers and their end users. The key products from which the segment derives its revenue are Messaging, Voice and Email.

Twilio Segment: The Segment segment consists of software products that enable businesses to achieve more effective customer engagement by providing the tools necessary for customers to build direct, personalized relationships with their end users. The key products from which the segment derives its revenue are Segment and Engage.

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Discrete financial information reviewed by the CODM

In January 2024, the Company's newly appointed CEO, who is also the CODM, began reviewing segment operating results using non-GAAP income from operations as the measure of segment profitability. Presented below is the discrete financial information by reportable segment for the years ended December 31, 2023, 2022, and 2021, that reflects management's current view of the business for performance assessment and resource allocation decisions. Prior period amounts were reclassified to conform to the current period's presentation. Asset information is not presented below since it is not reviewed by the CODM on a segment by segment basis. Revenue, costs of revenue and operating expenses are generally directly attributable to each segment. Certain costs of revenue and operating expenses are allocated based on methodologies that best reflect the patterns of consumption of these costs. Corporate costs consist of costs that support company-wide processes and are managed on the company-wide level, and include costs related to corporate governance and communication, global brand awareness, information security, and certain legal, finance and accounting expenses.

	Year Ended		
	December 31,		
	2023	2022	2021
	(In thousands)		
Revenue:			
Communications	\$ 3,858,693	\$ 3,550,087	\$ 2,640,874
Segment	295,252	276,234	200,965
Total	<u>\$ 4,153,945</u>	<u>\$ 3,826,321</u>	<u>\$ 2,841,839</u>
Non-GAAP income (loss) from operations:			
Communications	\$ 841,990	\$ 318,680	\$ 276,496
Segment	(72,430)	(29,695)	(13,006)
Corporate costs	(236,552)	(293,475)	(260,970)
Total	<u>\$ 533,008</u>	<u>\$ (4,490)</u>	<u>\$ 2,520</u>
Reconciliation of non-GAAP income (loss) from operations to loss from operations:			
Total non-GAAP income (loss) from operations	\$ 533,008	\$ (4,490)	\$ 2,520
Stock-based compensation	(662,842)	(784,285)	(632,285)
Amortization of acquired intangibles	(192,307)	(206,181)	(198,784)
Acquisition and divestiture related expenses	(5,555)	(2,621)	(7,449)
Loss on net assets divested	(32,277)	—	—
Payroll taxes related to stock-based compensation	(12,985)	(23,832)	(48,417)
Charitable contributions	(17,346)	(9,541)	(31,169)
Restructuring costs	(165,733)	(76,636)	—
Impairment of long-lived assets	(320,504)	(97,722)	—
Loss from operations	<u>(876,541)</u>	<u>(1,205,308)</u>	<u>(915,584)</u>
Other expenses (income), net	(120,188)	(38,324)	(45,345)
Loss before (provision for) benefit from income taxes	<u>\$ (996,729)</u>	<u>\$ (1,243,632)</u>	<u>\$ (960,929)</u>

Depreciation and amortization expenses included in non-GAAP income from operations for the Communications reportable segment was \$74.1 million, \$61.9 million and \$53.5 million in the years ended December 31, 2023, 2022 and 2021, respectively. Amortization of deferred commissions included in non-GAAP income from operations for the Communications reportable segment was \$60.0 million, \$47.7 million and \$27.8 million in the years ended December 31, 2023, 2022 and 2021, respectively.

Depreciation and amortization expenses included in non-GAAP loss from operations for the Segment reportable segment was \$13.7 million, \$6.1 million and \$2.6 million in the years ended December 31, 2023, 2022 and 2021, respectively. Amortization of deferred commissions included in non-GAAP loss from operations for the Segment reportable segment was \$12.9 million, \$10.3 million and \$3.7 million in the years ended December 31, 2023, 2022 and 2021, respectively.

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7.9. Derivatives and Hedging

As of **December 31, 2022** **December 31, 2023**, the Company had outstanding foreign currency forward contracts designated as cash flow hedges with a total sell notional value of **\$219.8 million** **\$228.1 million**. The notional value represents the amount that will be sold upon maturity of the forward contract. As of **December 31, 2022** **December 31, 2023**, these contracts had maturities of up to **6 months** **1.4 years**.

Gains and losses associated with these foreign currency forward contracts **were** **are** as follows:

Consolidated Statement of Operations and Statement of Comprehensive Loss			Year Ended December 31,	
			2022	2021
			(In thousands)	
Condensed Consolidated Statement of Operations and Statement of Comprehensive Loss			Condensed Consolidated Statement of Operations and Statement of Comprehensive Loss	
			Year Ended December 31,	
			2023	2022
			2021	
			(In thousands)	
Gains	Gains	Net change in	\$ 556	\$ 294
recognized in	recognized	market value		
OCI	in OCI	of effective		
		foreign		
		currency		
		forward		
		exchange		
		contracts		
Losses recognized in	Cost of revenue		\$34,862	\$7,545
income due to				
instruments maturing				
Gains				
(losses)				
recognized				
in income				
due to				
instruments				
maturing				

The Company is subject to master netting agreements with certain counterparties of the foreign exchange contracts, under which it is permitted to net settle transactions of the same currency with a single net amount payable by one party to the other. It is the Company's policy to present the derivatives at gross in its consolidated balance sheets. The Company's foreign currency forward contracts are not subject to any credit contingent features or collateral requirements. The Company manages its exposure to counterparty risk by entering into contracts with a diversified group of major financial institutions and by actively monitoring its outstanding positions. As of **December 31, 2022** **December 31, 2023**, the Company did not have any offsetting arrangements.

8.10. Right-of-Use Assets and Lease Liabilities

The Company has entered into various operating lease agreements for office space and data centers and finance lease agreements for data centers, office equipment and furniture.

As of **December 31, 2022** **December 31, 2023**, the Company had **30 various** leased properties with remaining lease terms from **0.1** **0.3** years to **7.0** **5.8** years, some of which include options to extend the leases for up to **5.0** **4.0** years.

As a result of the 2022 office closures described in Note 5, 6, the Company impaired several of its ROU assets related to office leases that will no longer be used to support its ongoing operations. In the year years ended December 31, 2022, December 31, 2023 and 2022, the Company recorded \$34.8 million and \$97.7 million impairment expense, respectively, related to these office closures, of which \$24.8 million and \$72.8 million, respectively, related to the affected ROU assets. The remaining impairment expense related to the associated assets in the property, plant and equipment categories. For the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, the Company did not have significant sublease income related to any of its subleased office leases.

Operating lease costs recorded in the accompanying consolidated statements of operations were \$57.8 million \$35.7 million, \$61.0 million \$57.8 million and \$49.3 million \$61.0 million for the years ended December 31, 2022 December 31, 2023, 2021 2022 and 2020, 2021, respectively. Lease costs associated with short-term leases, variable leases and finance leases were not significant.

Supplemental cash flow and other information related to operating leases was are as follows:

		Year Ended December 31,							
		2022		2021					
		Year Ended December 31,				Year Ended December 31,			
		2023				2023		2022	
Operating cash flows paid for amounts included in operating lease liabilities (in thousands)	Operating cash flows paid for amounts included in operating lease liabilities (in thousands)	\$	64,473	\$	60,085	Operating cash flows paid for amounts included in operating lease liabilities (in thousands)			
Weighted average remaining lease term (in years)	Weighted average remaining lease term (in years)		4.8		5.5	Weighted average remaining lease term (in years)			
Weighted average discount rate	Weighted average discount rate	4.5	%	4.5	%	Weighted average discount rate			

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Total lease payments	Total lease payments	242,922
Less: imputed interest	Less: imputed interest	(24,149)
Total operating lease obligations	Total operating lease obligations	218,773
Less: current obligations	Less: current obligations	(54,222)
Long-term operating lease obligations	Long-term operating lease obligations	\$ 164,551

9. Business Combinations

2022 Acquisitions

During 2022, the Company completed a business combination for an aggregate accounting purchase price of \$32.7 million, of which \$25.7 million was allocated to goodwill and \$8.2 million was allocated to intangible assets.

2021 Acquisitions

Zipwhip, Inc.

In July 2021, the Company acquired all outstanding shares of Zipwhip, Inc. ("Zipwhip"), a leading provider of toll-free messaging in the United States, for a purchase price, as adjusted, of \$838.8 million. The purchase price included \$418.1 million of cash, \$419.2 million fair value of 1.1 million shares of the Company's Class A common stock and \$1.5 million fair value of the pre-combination services of Zipwhip employees reflected in the unvested equity awards assumed by the Company at closing. Additionally, at closing, the Company issued 59,533 shares of its Class A common stock which were subject to vesting over a period of 3 years. Vesting of these shares is recorded in the stock-based compensation expense as the services are provided.

Part of the cash consideration paid at closing was to settle the vested equity awards of Zipwhip employees. The Company assumed all unvested and outstanding equity awards of Zipwhip continuing employees, as converted into its own equity awards, at the conversion ratio provided in the Agreement and Plan of Merger and Reorganization (the "Zipwhip Merger Agreement"). This transaction also included \$19.1 million of additional cash consideration for certain employees, which is vesting as these employees are providing services in the post-acquisition period. This amount is recorded in the operating expenses over the 3 year vesting period.

The acquisition was accounted for as a business combination and the total purchase price of \$838.8 million was allocated to the net tangible and intangible assets and liabilities based on their fair values on the acquisition date with the excess recorded as goodwill.

The fair value of the 1.2 million aggregate number of shares of the Company's Class A common stock issued at closing was determined based on the closing market price of the Company's Class A common stock on the acquisition date. The fair value of the \$30.7 million unvested equity awards assumed on the acquisition closing date was determined (a) for options, by using the Black-Scholes option pricing model with the applicable assumptions as of the acquisition date; (b) for restricted stock units, by using the closing market price of the Company's Class A common stock on the acquisition date. These awards continue vesting as Zipwhip employees provide services in the post-acquisition period. The fair value of these awards is recorded in the stock-based compensation expense over the respective vesting period of each award.

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The purchase price components, as adjusted, are summarized in the following table:

	Total
	(In thousands)
Fair value of Class A common stock transferred	\$ 419,197
Cash consideration	418,073
Fair value of the pre-combination service through equity awards	1,511
Total purchase price	\$ 838,781

The following table presents the purchase price allocation on the acquisition close date, as adjusted:

	Total
	(In thousands)
Cash and cash equivalents	\$ 21,610
Accounts receivable and other current assets	11,481
Property and equipment, net	2,950
Operating right-of-use asset	23,545
Intangible assets ⁽¹⁾	244,500
Other assets	370
Goodwill	600,574
Accounts payable and other liabilities	(20,239)
Deferred revenue	(4,526)
Operating lease liability, noncurrent	(23,169)
Deferred tax liability	(18,315)
Total purchase price	\$ 838,781

⁽¹⁾Identifiable intangible assets are comprised of the following:

	Total	Estimated life
	(In thousands)	(In years)
Developed technology	\$ 56,800	7
Customer relationships	147,700	10
Supplier relationships	39,600	5
Trade names	400	5
Total intangible assets acquired	\$ 244,500	

Goodwill generated from this acquisition primarily represented the value that was expected from the increased scale and synergies as a result of the integration of both businesses. Goodwill is not deductible for tax purposes.

The estimated fair value of the intangible assets acquired was determined by the Company. The Company engaged a third-party expert to assist with the valuation analysis. The Company used a relief-from-royalty method to estimate the fair values of the developed technology and trade names, a multi-period excess earnings method to estimate the fair values of customer relationships and a with-and-without method to estimate the fair value of the supplier relationships.

Most of the net tangible assets were valued at their respective carrying amounts as of the acquisition date as the Company believes that these amounts approximate their current fair values, except for operating right-of-use assets. The value of the acquired operating right-of-use assets was reduced to its respective fair value on the acquisition date.

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The acquired entity's results of operations were included in the Company's consolidated financial statements from the date of acquisition, July 14, 2021. For the years ended December 31, 2022 and 2021, Zipwhip contributed net operating revenue of \$139.5 million and \$55.4 million, respectively, which is reflected in the accompanying consolidated statements of operations. Due to the integrated nature of the Company's operations, the Company believes that it is not practicable to separately identify earnings of Zipwhip on a stand-alone basis. Pro forma results of operations for this acquisition are not presented as the financial impact to the Company's consolidated financial statements is not significant.

Costs incurred related to the acquisition were not significant.

Other 2021 Acquisitions

During 2021, the Company completed other business combinations for an aggregate purchase price of \$105.0 million, of which \$13.4 million was allocated to developed technology, \$23.6 million was allocated to other intangible assets and \$63.2 million was allocated to goodwill.

10. 11. Equity Method Investment

In May 2022, the Company acquired 44.6% equity interests in Syniverse Corporation ("Syniverse") for \$750.0 million in cash. The Company determined that it does not have a controlling financial interest in Syniverse but does exercise significant influence and therefore, the investment was accounted for under the equity method. The Company estimated

that on the investment closing date there was an excess investment basis of \$530.7 million related to its proportionate share of the identifiable intangible assets and \$41.3 million related to the associated deferred tax liability. The equity method goodwill was estimated at \$623.8 million.

The estimated fair value of the intangible assets was determined by the Company. The Company engaged a third-party expert to assist with the valuation analysis. The following table presents the estimated basis differences attributable to the identifiable intangible assets as of the date of investment and their respective useful lives:

	Total	Estimated life
	(In thousands)	(In years)
Developed technology	\$ 62,767	6
Customer relationships	439,152	9
Trademarks	28,822	Indefinite
Total basis difference attributable to the identifiable intangible assets	\$ 530,741	

As of December 31, 2023, the Company held 44.0% equity interests in Syniverse and the carrying amount of its equity method investment recorded in the accompanying consolidated balance sheet was \$593.6 million. As of December 31, 2023, the Company's net excess investment basis was \$451.6 million related to its proportionate share of the identifiable intangible assets of the investee, \$41.2 million related to the associated deferred tax liability and \$623.8 million related to the equity method goodwill.

As of December 31, 2022, the Company held 44.5% equity interests in Syniverse and the carrying amount of its equity method investment recorded in the accompanying consolidated balance sheet was \$700.0 \$699.9 million. As of December 31, 2022, the Company's net excess investment basis was \$508.9 million related to its proportionate share of the identifiable intangible assets of the investee, \$41.3 million related to the associated deferred tax liability and \$623.8 million related to the equity method goodwill.

The Company has elected to report its portion of equity method investee's results of operations In the years ended December 31, 2023 and other comprehensive income on a 90-day lag. The 2022, the Company recorded its share of losses from its equity method investment of \$35.3 million in its accompanying consolidated statement of operations for the year ended December 31, 2022. The adjustment consisted of the Company's proportionate share of the investee's investee's net operating results and the amortization of the basis difference for of \$121.9 million and \$35.3 million, respectively, as part of other expenses, net in the period from the transaction closing date accompanying consolidated statements of May 13, 2022, through September 30, 2022. operations. The Company also recorded \$15.6 million of its proportionate share of the investee's other comprehensive income for the year ended December 31, 2023 and \$14.9 million of its proportionate share of the investee's other comprehensive loss for the year ended December 31, 2022 in the accompanying

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consolidated statement statements of other comprehensive loss for the same period. income (loss). Results of operations and other comprehensive income (loss) were recorded on a 90-day lag.

In conjunction with this investment, the Company and Syniverse entered into a wholesale agreement, pursuant to which Syniverse will process, route and deliver application-to-person messages originating and/or terminating between the Company's customers and mobile network operators. The value values of the transactions that occurred between the Company and Syniverse were \$143.7 million for the year ended December 31, 2023 and \$89.6 million for the period from the investment closing date on May 13, 2022 through December 31, 2022. These transactions were recorded as cost of revenue in the accompanying consolidated statements of operations.

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11 12. Goodwill and Intangible Assets

Goodwill

The business reorganization activities described in Note 8 impacted the Company's reporting unit structure and, as a result, in 2023 the Company had multiple reporting units. These changes required the Company to reallocate goodwill balance to its newly formed reporting units and test the goodwill for impairment on the reporting unit level immediately before and immediately after each reorganization. The Company engaged a third-party expert to assist in the valuation analysis. The Company concluded that its goodwill was not impaired immediately before and immediately after the reorganizations.

The Company estimates the fair value of its reporting units using a weighting of fair values derived from an income and a market approach. Estimating the fair value by these methods involves the use of various assumptions that the Company believes are reasonable under then current circumstances. Under the income approach, the Company determines the fair value of a reporting unit based on the present value of estimated future cash flows using the cash flow projections prepared by management. The market approach estimates the fair value based on market multiples of revenue or adjusted EBITDA, as applicable, derived from comparable publicly traded companies with similar

operating and investment characteristics as the reporting unit. While these assumptions reflect management's best estimates of future performance at the time, these estimates are inherently complex and uncertain and the Company's actual results could differ materially from these estimates.

The following table presents the goodwill allocated to the Company's reportable segments as of December 31, 2022 December 31, 2023 and 2021 was as follows: 2022, and the changes during the period:

	Total		
	(In thousands)		
Balance as of December 31, 2020	\$		4,595,394
Goodwill additions related to 2021 acquisitions			663,599
Measurement period and other adjustments			4,173
Balance as of December 31, 2021	\$		5,263,166
Goodwill additions related to 2022 acquisitions			25,748
Measurement period and other adjustments			(4,761)
Balance as of December 31, 2022	\$		5,284,153

	Twilio Communications	Twilio Segment	Total
	(In thousands)		
Balance as of December 31, 2021	\$ —	\$ —	\$ 5,263,166
Goodwill additions related to 2021 acquisitions	—	—	25,748
Measurement period and other adjustments	—	—	(4,761)
Balance as of December 31, 2022	\$ —	\$ —	\$ 5,284,153
Foreign currency adjustments			26
Reallocation to segments in the second quarter of 2023 ⁽¹⁾	\$ 4,321,130	\$ 963,049	\$ —
Foreign currency adjustments	251	—	251
Goodwill divested ⁽²⁾	(41,164)	—	(41,164)
Reallocation to segments in the fourth quarter of 2023 ⁽¹⁾	656,964	(656,964)	—
Balance as of December 31, 2023	\$ 4,937,181	\$ 306,085	\$ 5,243,266

⁽¹⁾ Represents reallocation of goodwill as a result of the reorganization activities, as described in Note 8.

⁽²⁾ Represents goodwill related to the divestitures of the ValueFirst business and IoT asset group, as described in Note 5.

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Intangible assets

Intangible assets consisted consist of the following:

		As of December 31, 2022		
		Cost	Accumulated Amortization	Net
		As of December 31, 2023		
		Cost	Accumulated Amortization	Net
Amortizable intangible assets:	Amortizable intangible assets:	(In thousands)		
Developed technology		\$ 795,753	\$ (335,893)	\$ 459,860
Customer relationships		538,466	(204,241)	334,225
Developed technology*				

Customer relationships-				
Supplier relationships	Supplier relationships	56,922	(19,846)	37,076
Trade names	Trade names	30,342	(20,106)	10,236
Order backlog	Order backlog	10,000	(10,000)	—
Patent	Patent	4,028	(705)	3,323
	Total amortizable intangible assets	1,435,511	(590,791)	844,720
Non-amortizable intangible assets:	Non-amortizable intangible assets:			
Telecommunication licenses	Telecommunication licenses	4,920	—	4,920
Telecommunication licenses				
Telecommunication licenses				
Trademarks and other	Trademarks and other	295	—	295
Total	Total	\$ 1,440,726	\$ (590,791)	\$849,935

• As a result of the impairment described in Note 6, the developed technology cost basis and the related accumulated amortization decreased by \$381.1 million and \$171.8 million, respectively.

• As a result of the impairment described in Note 6, the developed technology cost basis and the related accumulated amortization decreased by \$381.1 million and \$171.8 million, respectively.

• As a result of the impairment described in Note 6, the developed technology cost basis and the related accumulated amortization decreased by \$381.1 million and \$171.8 million, respectively.

-- As a result of the impairment described in Note 6, the customer relationship cost basis and the related accumulated amortization decreased by \$174.0 million and \$97.6 million, respectively.

Customer relationships				
Customer relationships	Customer relationships	538,264	(128,035)	410,229
Supplier relationships	Supplier relationships	51,671	(9,491)	42,180
Supplier relationships				
Supplier relationships				
Trade names				
Trade names				
Trade names	Trade names	30,669	(13,874)	16,795
Order backlog	Order backlog	10,000	(10,000)	—
Order backlog				
Order backlog				
Patent				
Patent				
Patent	Patent	4,035	(508)	3,527
Total amortizable intangible assets	Total amortizable intangible assets	1,429,470	(384,673)	1,044,797
Total amortizable intangible assets				
Total amortizable intangible assets				
Non-amortizable intangible assets:				
Non-amortizable intangible assets:				
Non-amortizable intangible assets:	Non-amortizable intangible assets:			
Telecommunication licenses	Telecommunication licenses	4,920	—	4,920
Telecommunication licenses				
Telecommunication licenses				
Trademarks and other				
Trademarks and other				
Trademarks and other	Trademarks and other	295	—	295
Total	Total	\$ 1,434,685	\$ (384,673)	\$ 1,050,012
Total				
Total				

Amortization expense was \$192.5 million, \$206.4 million \$198.8 million and \$98.6 \$198.8 million for the years ended December 31, 2022 December 31, 2023, 2022 and 2021, and 2020, respectively.

In the year ended December 31, 2023, the Company recorded an impairment charge related to certain of its intangible assets, as described in Note 6.

Total estimated future amortization expense is as follows:

Year Ended December 31,	As of December 31, 2022	
	(In thousands)	
2023	\$	202,708
2024		197,273
2025		193,699
2026		120,237
2027		72,218
Thereafter		58,585
Total	\$	844,720

	As of December 31, 2023	
Year Ended December 31,	(In thousands)	
2024	\$	112,042
2025		107,862
2026		42,149
2027		25,330
2028		19,055
Thereafter		38,837
Total	\$	345,275

12.13. Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities ~~consisted~~ consist of the following:

		As of December 31,	
		2022	2021
		(In thousands)	
		As of December 31,	
		2023	2022
		(In thousands)	
Accrued payroll and related	Accrued payroll and related	\$ 79,703	\$ 78,780
Accrued bonus and commission	Accrued bonus and commission	35,449	64,665
Accrued cost of revenue	Accrued cost of revenue	161,455	118,004
Sales and other taxes payable	Sales and other taxes payable	92,319	61,975
ESPP contributions			
Finance lease liability	Finance lease liability	11,871	12,370
Employee sabbatical benefit accrual		30,683	—
Finance lease liability			
Finance lease liability			
Restructuring liability			
Employee sabbatical benefit accrual ⁽¹⁾			
Accrued other expense	Accrued other expense	78,741	81,709
Total accrued expenses and other current liabilities		\$ 490,221	\$ 417,503

(1) In February 2023, the Company announced that it will sunset its employee sabbatical program. The accrued liability as of December 31, 2023 represents the accumulated benefit balance for the employees who remain eligible under this program through its termination date.

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13, 14. Long-Term Debt

Long-term debt, net, consisted consists of the following:

		As of December 31,	
		2022	2021
		(In thousands)	
		As of December 31,	As of December 31,
		2023	2022
		(In thousands)	
2029 Senior Notes	2029 Senior Notes		
Principal	Principal		
Principal	Principal		
Principal	Principal	\$ 500,000	\$500,000
Unamortized discount	Unamortized discount	(5,001)	(5,701)
Unamortized issuance costs	Unamortized issuance costs	(1,126)	(1,286)
Net carrying amount	Net carrying amount	493,873	493,013
2031 Senior Notes	2031 Senior Notes		
Principal	Principal	500,000	500,000
Principal	Principal		
Principal	Principal		
Unamortized discount	Unamortized discount	(5,299)	(5,832)
Unamortized issuance costs	Unamortized issuance costs	(1,192)	(1,274)
Net carrying amount	Net carrying amount	493,509	492,894

Total	Total		
long-	long-		
term	term		
debt,	debt,		
net	net	\$ 987,382	\$985,907

2029 and 2031 Senior Notes

In March 2021, the Company issued \$1.0 billion aggregate principal amount of senior notes, consisting of \$500.0 million principal amount of 3.625% notes due 2029 (the "2029 Notes") and \$500.0 million principal amount of 3.875% notes due 2031 (the "2031 Notes" and together with the 2029 Notes, the "Notes"). Initially, none of the Company's subsidiaries guaranteed the Notes. However, under certain circumstances in the future the Notes can be guaranteed by each of the Company's material domestic subsidiaries. The 2029 Notes and 2031 Notes will mature on March 15, 2029 and March 15, 2031, respectively. Interest payments are payable semi-annually in arrears on March 15 and September 15 of each year, commencing on September 15, 2021.

The aggregate net proceeds from offering of the Notes were approximately \$984.7 million after deducting underwriting discounts and issuance costs paid by the Company.

The Company may voluntarily redeem the 2029 Notes, in whole or in part, under the following circumstances:

- (1) at any time prior to March 15, 2024 with the net cash proceeds received by the Company from an equity offering at a redemption price equal to 103.625% of the principal amount, provided the aggregate principal amount of all such redemptions does not exceed 40% of the original aggregate principal amount of the 2029 Notes. Such redemption shall occur within 180 days after the closing of an equity offering and at least 50% of the then-outstanding aggregate principal amount of the 2029 Notes shall remain outstanding, unless all 2029 Notes are redeemed concurrently;
- (2) at any time prior to March 15, 2024 at 100% of the principal amount, plus a "make-whole" premium;
- (3) at any time on or after March 15, 2024 at a prepayment price equal to 101.813% of the principal amount;
- (4) at any time on or after March 15, 2025 at a prepayment price equal to 100.906% of the principal amount; and
- (5) at any time on or after March 15, 2026 at a prepayment price equal to 100.000% of the principal amount;

in each case, the redemption will include the accrued and unpaid interest, as applicable.

The Company may voluntarily redeem the 2031 Notes, in whole or in part, under the following circumstances:

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- (1) at any time prior to March 15, 2024 with the net cash proceeds received by the Company from an equity offering at a redemption price equal to 103.875% of the principal amount, provided the aggregate principal amount of all such redemptions does not exceed 40% of the original aggregate principal amount of the 2031 Notes. Such redemption shall occur within 180 days after the closing of an equity offering and at least 50% of the then-outstanding aggregate principal amount of the 2031 Notes shall remain outstanding, unless all 2031 Notes are redeemed concurrently;
- (2) at any time prior to March 15, 2026 at 100% of the principal amount, plus a "make-whole" premium;
- (3) at any time on or after March 15, 2026 at a prepayment price equal to 101.938% of the principal amount;
- (4) at any time on or after March 15, 2027 at a prepayment price equal to 101.292% of the principal amount;
- (5) at any time on or after March 15, 2028 at a prepayment price equal to 100.646% of the principal amount; and
- (6) at any time on or after March 15, 2029 at a prepayment price equal to 100.000% of the principal amount;

in each case, the redemption will include accrued and unpaid interest, as applicable.

The Notes are general unsecured obligations and will rank senior in right of payment to any of the Company's indebtedness that is expressly subordinated in right of payment to the Notes that the Company may incur in the future and equal in right of payment with the Company's existing and future unsecured and unsubordinated liabilities.

In certain circumstances involving a change of control event, the Company will be required to make an offer to repurchase the Notes of the applicable series at a repurchase price equal to 101% of the principal amount of the Notes of such series to be repurchased, plus accrued and unpaid interest, if any, to the applicable repurchase date.

The indenture governing the Notes (the "Indenture") contains restrictive covenants limiting the Company's ability and the ability of its subsidiaries to: (i) create liens on certain assets to secure debt; (ii) grant a subsidiary guarantee of certain debt without also providing a guarantee of the Notes; and (iii) consolidate or merge with or into, or sell or otherwise dispose of all or substantially all of its assets to another person. These covenants are subject to a number of limitations and exceptions. Certain of these covenants will not apply during any period in which the Notes are rated investment grade by either Moody's Investors Service, Inc. or Standard & Poor's Ratings Services.

As of **December 31, 2022** **December 31, 2023**, the Company was in compliance with all of its covenants under the Indenture.

Convertible Senior Notes and Capped Call Transactions

In June 2021 the Company fully redeemed the remaining outstanding principal amount of its convertible senior notes due 2023 ("Convertible Notes") pursuant to the notice of redemption it issued in May 2021. During 2021, the Company converted \$343.7 million aggregate principal amount of the Convertible Notes by issuing 4,846,965 shares of its Class A common stock.

The aggregate value of all redemption transactions in the year ended December 31, 2021, was \$1.7 billion. Of the \$1.7 billion, \$1.4 billion and \$335.7 million were allocated to the equity and liability components, respectively, as required by the applicable accounting guidance. The Company utilized the effective interest rate method to determine the fair value of the liability component. The selected interest rate reflected the Company's incremental borrowing rate, adjusted for the Company's credit standing on nonconvertible debt with similar maturity. The extinguishment of these Convertible Notes resulted in a \$29.0 million loss that is included in other expenses, net, in the accompanying consolidated statement of operations for the year ended December 31, 2021. No sinking fund was provided for these Convertible Notes.

In connection with the initial offering of the Convertible Notes in 2018, the Company entered into privately negotiated capped call transactions with certain counterparties (the "capped calls"). Concurrently with the redemption of the Convertible Notes, the Company settled these capped calls in June 2021 for gross cash consideration of \$229.8 million received by the Company, which the Company recorded in additional paid-in-capital, net of \$1.4 million in transaction costs and a \$3.2 million realized gain. The gain was primarily driven by the change in the fair value of the Company's Class A common stock on the transaction settlement date. The gain was recorded in other expenses, net, in the accompanying consolidated statement of operations for the year ended December 31, 2021.

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In the year ended December 31, 2020, holders of Convertible Notes submitted \$206.3 million aggregate principal amount of the Convertible Notes for conversion and the Company issued 2,902,434 shares of its Class A common stock and \$2.0 million of cash to settle such conversion. Of the \$894.6 million aggregate value of these transactions, \$701.9 million and \$192.7 million were allocated to the equity and liability components, respectively. The extinguishment of these Convertible Notes resulted in a \$12.9 million loss that is included in other expenses, net, in the accompanying consolidated statement of operations for the year ended December 31, 2020.

14.15. Supplemental Balance Sheet Information

A roll-forward of the Company's customer credit reserve is as follows:

		As of December 31,		
		2022	2021	2020
		(In thousands)		
		As of December 31,		
		As of December 31,		
		As of December 31,		
		2023		
		(In thousands)		
		(In thousands)		
		(In thousands)		
Balance, beginning of period	Balance, beginning of period	\$ 18,577	\$ 16,783	\$ 6,784
Additions	Additions	86,303	55,937	50,817
Additions				
Deductions against reserve				
Deductions against reserve				
Deductions against reserve	Deductions against reserve	(71,756)	(54,143)	(40,818)
Balance, end of period	Balance, end of period	\$ 33,124	\$ 18,577	\$ 16,783
Balance, end of period				
Balance, end of period				

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15.

16. Revenue by Geographic Area and Groups of Similar Products

Revenue by geographic area is based on the IP address or the mailing address at the time of registration. The following table sets forth revenue by geographic area:

		Year Ended December 31,			
		2022		2021 ⁽¹⁾	
				2020	
		Year Ended December 31,			
		Year Ended December 31,			
		Year Ended December 31,			
		2023			
		2023			
		2023			
Revenue by geographic area:					
Revenue by geographic area:					
Revenue by geographic area:	Revenue by geographic area:	(In thousands)			
United States	United States	\$	2,510,525	\$	1,927,302
International	International		1,315,796		914,537
International					479,563
Total	Total	\$	3,826,321	\$	2,841,839
Total					
Total					
Percentage of revenue by geographic area:	Percentage of revenue by geographic area:				
Percentage of revenue by geographic area:					
Percentage of revenue by geographic area:					
United States					
United States					
United States	United States	66	%	68	%
International	International	34	%	32	%

⁽¹⁾ During 2022, the Company identified a misclassification of some of its United States customers for the fourth quarter of 2021, which impacted the reported United States versus international revenue split for the year ended December 31, 2021. The Company has updated the amounts herein to accurately reflect the revenue split by geographic area. No other amounts were impacted by this misclassification.

International
International

Long-lived The following table sets forth long-lived assets outside of the United States were \$54.5 million and \$41.0 million as of December 31, 2022 and 2021, respectively, by geographic area:

		As of December 31,	
		2023	2022
Long-lived assets by geographic area:		(In thousands)	
United States		\$ 99,368	\$ 178,624
International		39,644	54,473
Total		\$ 139,012	\$ 233,097
Percentage of long-lived assets by geographic area:			
United States		71 %	77 %
International		29 %	23 %

The following table sets forth revenue by groups of similar products:

	Year Ended December 31,		
	2023	2022 ⁽¹⁾	2021 ⁽¹⁾
Revenue by groups of similar products:	(In thousands)		
Twilio Communications:			
Messaging	\$ 2,184,752	\$ 2,066,300	\$ 1,416,265
Voice	511,728	474,790	428,484
Email and Marketing Campaigns	440,185	399,314	330,627
Other	722,028	609,683	465,498
Total Twilio Communications	3,858,693	3,550,087	2,640,874
Twilio Segment	295,252	276,234	200,965
Total	\$ 4,153,945	\$ 3,826,321	\$ 2,841,839

95⁽¹⁾ Prior year amounts were reclassified to conform to the current year presentation. The current year presentation follows the

	Year Ended December 31,		
	2022	2021	2020
Revenue by groups of similar products:	(In thousands)		
Communications:			
Programmable Messaging	\$ 2,066,300	\$ 1,416,265	\$ 820,887
Programmable Voice	474,790	428,484	345,042
Email	333,500	277,400	218,700
Other	376,650	289,131	213,800
Total communications	3,251,240	2,411,280	1,598,429
Software	441,477	325,943	98,363
Other	133,604	104,616	64,984
Total	\$ 3,826,321	\$ 2,841,839	\$ 1,761,776

Twilio Communications includes a variety of APIs and software solutions to optimize communications between Twilio customers and their end users. This is primarily concentrated within the Messaging, Voice and Email communication channels. Twilio Software applications include Twilio Segment, Twilio Engage, Twilio Flex and Marketing Campaigns. These products enable businesses to achieve more effective customer engagement by providing the tools necessary for customers to build direct, personalized relationships with their end users. Other includes other miscellaneous products and services, including enterprise and support plans. Company's reportable segment structure, as described further in Note 8.

16, 17. Commitments and Contingencies

(a) Lease and Other Commitments

The Company entered into various non-cancelable operating lease agreements for its facilities. Refer to Note 8 to these consolidated financial statements 10 for additional detail on the Company's operating lease commitments.

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Additionally, the Company has contractual commitments with its cloud infrastructure provider, providers, network service providers and other vendors that are noncancellable and expire within one to four three years. In the year ended December 31, 2022 December 31, 2023, the Company entered into several such agreements with terms of up to four three years for a total purchase commitment of \$936.2 \$103.8 million. Future minimum payments under these noncancellable purchase commitments are summarized in the table below. Unrecognized tax benefits are not included in these amounts because any amounts expected to be settled in cash are not material: significant:

As of
December 31, 2022

As of December 31, 2023			As of December 31, 2023
Year Ending December 31,	Year Ending December 31,	(In thousands)	Year Ending December 31,
2023	2023	\$ 205,257	(In thousands)
2024	2024	194,237	
2025	2025	221,438	
2026	2026	227,515	
Total payments	Total payments	\$ 848,447	
Total payments			
Total payments			

(b) Legal Matters

From time to time, the Company may be subject to legal actions, claims, and government investigations or inquiries arising in the ordinary course of business. These matters may include, but are not limited to, matters involving privacy, data protection, data security, intellectual property, competition, telecommunications, consumer protection, taxation, securities, employment, and contractual rights. While the Company currently believes that the final outcomes of these matters will not have a material adverse effect on its business, the results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

The Company accrues for contingencies when the Company believes that a loss is probable and that it can reasonably estimate the amount of any such loss. To the extent there is a reasonable possibility that a loss exceeding amounts already recognized may be incurred and the amount of such additional loss would be material, the Company will either disclose the estimated additional loss or state that such an estimate cannot be made. Significant judgment is required to determine the probability of a loss and to estimate the amount of any probable loss.

Legal fees and other costs related to litigation and other legal proceedings are expensed as incurred and are included in general and administrative expenses in the accompanying consolidated statements of operations.

In 2020, the City and County of San Francisco ("San Francisco") has assessed the Company for additional Telephone Users Tax ("TUT") and Access Line Tax ("ALT") on certain of the Company's services for the years 2009 through 2018. The assessments totaled \$38.8 million, including interest and penalties. The Company paid the assessments under protest in the third quarter of 2020.

On May 27, 2021, the Company filed a lawsuit against San Francisco in San Francisco Superior Court challenging the assessments. The parties agreed to a settlement agreement that was approved by San Francisco's Board of Supervisors and Mayor on November 7, 2023 and November 9, 2023, respectively, pursuant to which San Francisco paid the Company raised numerous defenses \$18.0 million in November 2023 in settlement of the Company's claims. The related impacts to the assessments including that its services are consolidated balance sheet as of December 31, 2023 and statement of operations for the year ended December 31, 2023 were not telecommunications services, application of the taxes to the Company's services violates the Internet Tax Freedom Act and San Francisco does not have jurisdiction to impose tax on services provided outside of San Francisco. The Company is seeking refunds of the taxes

paid, waivers of interest and penalties, cost of suit and reasonable attorneys' fees, and other legal and equitable relief as the court deems appropriate. The trial is expected to be held in the summer of 2023.

The Company believes it has strong arguments against the assessments but litigation is uncertain and there is no assurance that it will prevail in court. Should the Company lose on one or more of its arguments, it could incur additional losses associated with taxes, interest, and penalties that together, in aggregate, could be material. The Company regularly assesses the likelihood of adverse outcomes resulting from tax disputes such as this and examines all open years to determine the necessity and adequacy of any tax reserves. The Company's tax reserves are further discussed in Note 16(d) to these consolidated financial statements.

In addition to the litigation discussed above, from time to time, the Company may be subject to legal actions and claims in the ordinary course of business. The Company has received, and may in the future continue to receive, claims from third parties asserting, among other things, infringement of their intellectual property rights. Future litigation may be necessary to defend the Company, its partners and its customers by determining the scope, enforceability and validity of third-party proprietary rights, or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

Legal fees and other costs related to litigation and other legal proceedings are expensed as incurred and are included in general and administrative expenses in the accompanying consolidated statements of operations. significant.

(c) **Indemnification Agreements**

The Company has signed indemnification agreements with all of its board members and executive officers. The agreements indemnify the board members and executive officers from claims and expenses on actions brought against the individuals separately or jointly with the Company for certain indemnifiable events. Indemnifiable events generally mean any event or occurrence related to the fact that the board member or the executive officer was or is acting in his or her capacity as a board member or an executive officer for the Company or was or is acting or representing the interests of the Company.

In the ordinary course of business and in connection with our its financing and business combinations combination transactions, the Company enters into contractual arrangements under which it agrees to provide indemnification of varying scope and terms to business partners, customers and other parties with respect to certain matters, including, but not limited to, losses arising out of the breach of such agreements, intellectual property infringement claims made by third parties and other liabilities relating to or arising from the Company's various products or its acts or omissions. In these circumstances, payment

The Company has also signed indemnification agreements with all of its board members and executive officers and certain employees that may be conditional on require the other party making a claim pursuant Company to indemnify them for certain events in connection with their services to the procedures specified in the particular contract. Further, the Company's obligations under these agreements may be limited in terms of time and/ Company or amount, and in some instances, the Company may have recourse against third parties for certain payments. The terms of such obligations may vary its direct or indirect subsidiaries.

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As of December 31, 2022 December 31, 2023 and 2021, 2022, no amounts were accrued related to any outstanding indemnification agreements.

(d) **Other Taxes**

The Company conducts operations in many tax jurisdictions within and outside the United States. In many of these jurisdictions, non-income-based taxes, such as sales, use, telecommunications and other local taxes are assessed on the Company's operations. The Company carries reserves for certain of its non-income-based tax exposures in certain jurisdictions when it is both probable that a liability was incurred and the amount of the exposure could can be reasonably estimated. These reserves are based on estimates which include several key assumptions including, but not limited to, the taxability of the Company's services, the jurisdictions in which its management believes it had nexus and the sourcing of revenues to those jurisdictions.

The Company continues to remain in discussions with certain jurisdictions regarding its prior sales and other taxes that it may owe. In the event any of these jurisdictions disagree with management's assumptions and analysis, the assessment of the Company's tax exposure could differ materially from management's current estimates. For example, as described in Note 13(b), the Company is currently involved in legal proceedings with the City and County of San Francisco challenging their assessment of the Company's estimated tax liability for a specific period. The \$38.8 million assessment of taxes, including interest and penalties, that the Company paid as required in 2020, net of the \$11.5 million reserve the Company had accrued for the same period, was recorded as a deposit in other assets in the accompanying consolidated balance sheets.

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As of December 31, 2022 December 31, 2023, the liabilities recorded for the non-income-based taxes were \$29.1 \$18.0 million for domestic jurisdictions and \$20.6 \$22.2 million for jurisdictions outside of the United States. As of December 31, 2021 December 31, 2022, these liabilities were \$25.4 \$29.1 million and \$17.7 \$20.6 million, respectively.

17. 18. Stockholders' Equity

Preferred Stock

As of December 31, 2022, December 31, 2023 and December 31, 2021, 2022, the Company had authorized 100,000,000 shares of preferred stock, par value \$0.001, of which no shares were issued and outstanding.

Common Stock

As of December 31, 2022 December 31, 2023, the Company had authorized 1,000,000,000 shares of Class A common stock and December 31, 2021 3,170,181 shares of Class B common stock, each par value of \$0.001 per share. As of December 31, 2023, 181,945,771 shares of Class A common stock and no shares of Class B common stock were issued and outstanding.

As of December 31, 2022, the Company had authorized 1,000,000,000 shares of Class A common stock and 100,000,000 shares of Class B common stock, each par value of \$0.001 per share. As of December 31, 2022, 176,358,104 shares of Class A common stock and 9,617,605 shares of Class B common stock were issued and outstanding. As of December 31, 2021, 170,625,994 shares of Class A common stock and 9,842,105 shares of Class B common stock were issued and outstanding.

The Company had reserved shares of common stock for issuance as follows:

		As of December 31,	
		2022	2021
		As of December 31,	
		2023	2022
Stock options issued and outstanding	Stock options issued and outstanding	2,277,379	3,351,313
Unvested restricted stock units issued and outstanding	Unvested restricted stock units issued and outstanding	15,414,997	6,475,700
Class A common stock reserved for Twilio.org		530,449	618,857
Shares of Class A common stock reserved for Twilio.org			
Stock-based awards available for grant under 2016 Plan	Stock-based awards available for grant under 2016 Plan	19,851,399	24,650,104
Stock-based awards available for grant under ESPP		7,648,429	6,382,830
Shares of Class A common stock reserved for issuance pursuant to ESPP			
Total	Total	45,722,653	41,478,804

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Share Repurchase Program

In February 2023, the board of directors of the Company authorized the repurchase of up to \$1.0 billion in aggregate value of its outstanding Class A common stock through a share repurchase program. Repurchases under this program can be made through open market, private transactions or other means, in compliance with applicable federal securities laws, and could include repurchases pursuant to the Rule 10b5-1 trading plans. The Company has discretion in determining the conditions under which shares may be repurchased from time to time. The program expires on December 31, 2024.

During the year ended December 31, 2023, the Company repurchased 11.3 million shares of its Class A common stock for an aggregate purchase price of \$672.1 million. As of December 31, 2023, approximately \$327.9 million of the originally authorized amount remained available for future repurchases.

Public Equity Offerings

In February 2021, and August 2020, the Company completed a public equity offerings offering in which it sold 4,312,500 shares and 5,819,838 shares, respectively, of its Class A common stock at a public offering price of \$409.60 and \$247.00 per share, respectively. The Company received total proceeds of \$1.8 billion and \$1.4 billion, respectively, net of underwriting discounts and offering expenses paid by the Company.

18. 19. Stock-Based Compensation

2008 Stock Option Plan

The Company maintained a stock plan, in connection with the Company's initial public offering on June 22, 2016, the 2008 Stock Option Plan, as amended and restated (the "2008 Plan"), which allowed the Company to grant incentive ("ISO") and non-statutory ("NSO") stock options and restricted stock units ("RSU") to its employees, directors and consultants to participate in the Company's future performance through stock-based awards at the discretion of the Company's board of directors. On June 22, 2016, the 2008 Plan and the Company's right of refusal for outstanding equity awards granted under this plan were terminated in connection with the Company's initial public offering ("IPO"), and, accordingly, no shares were available for issuance under this plan since after the IPO. Stock options granted under this plan generally expire 10 years from the date termination. As of the grant December 31, 2023 and as such, this plan continues to govern outstanding equity awards granted thereunder. All 2022, all remaining outstanding stock options granted under the 2008 Plan are were vested and exercisable.

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exercisable and continue to be governed by the provisions of this plan.

2016 Stock Option Plan

The Company's 2016 Stock Option and Incentive Plan (the "2016 Plan") became effective on June 21, 2016. The 2016 Plan provides for the grant of ISOs, NSOs, restricted stock, RSUs, stock appreciation rights, unrestricted stock awards, performance share awards, dividend equivalent rights and cash-based awards to employees, directors and consultants of the Company. A total of 11,500,000 shares of the Company's Class A common stock were initially reserved for issuance under the 2016 Plan. These available shares automatically increase each January 1, beginning on January 1, 2017, by 5% of the number of shares of the Company's Class A and Class B common stock outstanding on the immediately preceding December 31, or such lesser number of shares as determined by the Company's compensation committee. On January 1, 2022 January 1, 2023 and 2021 2022, the shares available for grant under the 2016 Plan were automatically increased by 9,023,405 9,298,785 shares and 8,202,376 9,023,405 shares, respectively.

Under the 2016 Plan, the stock options are granted at a price per share not less than 100% of the fair market value per share of the underlying common stock on the date of grant.

SendGrid 2009, 2012 and 2017 Stock Incentive Plans

In connection with its acquisition of SendGrid, the Company assumed and replaced all stock options and restricted stock units of the continuing employees issued under SendGrid's 2009, 2012 and 2017 Stock Incentive Plans that were unvested and outstanding on the date of acquisition. The assumed equity awards continue to vest and are governed by the provisions of their respective plans. Additionally, the Company assumed shares of SendGrid common stock that were reserved and available for issuance under SendGrid's 2017 Equity Incentive Plan, on an as converted basis. These shares were utilized for equity grants under the Company's 2016 Plan in the post-acquisition period, to the extent permitted by New York Stock Exchange rules.

Segment 2013 Stock Incentive Plan

In connection with its acquisition of Segment, the Company assumed and replaced all stock options and restricted stock units of the continuing employees issued under Segment's 2013 Stock Incentive Plan ("Segment Plan") that were unvested and outstanding on the acquisition date. The assumed equity awards continue to vest and are governed by the provisions of the Segment Plan.

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Zipwhip 2008 Stock Plan and 2018 Equity Incentive Plan

In connection with its acquisition of Zipwhip, the Company assumed and replaced all stock options and restricted stock units of the continuing employees issued under Zipwhip Zipwhip's Amended and Restated 2008 Stock Plan and 2018 Equity Incentive Plan ("Zipwhip Plans") that were unvested and outstanding on the acquisition date. The assumed equity awards continue to vest and are governed by the provisions of the Zipwhip Plans.

Under all plans, stock options generally expire 10 years from the date of grant and vest over periods determined by the board of directors. The vesting period for stock options and restricted stock units is generally four years from the date of grant. For existing employees and, effective in 2022, for new-hires the stock options and restricted stock units vest in equal monthly and quarterly installments, respectively, over the service period.

2016 Employee Stock Purchase Plan

The Company's 2016 ESPP initially became was effective on June 21, 2016. A total of 2,400,000 shares of the Company's Class A common stock were initially reserved for issuance under the 2016 ESPP. These available shares automatically increase each January 1, beginning on January 1, 2017, by the lesser of 1,800,000 shares of the Company's Class A common stock, 1% of the number of shares of the Company's Class A and Class B common stock outstanding on the immediately preceding December 31 or such lesser number of shares as determined by the Company's compensation committee. On January 1, 2022 each of January 1, 2023 and 2021, 2022, the shares available for grant under the 2016 ESPP were automatically increased by 1,800,000 shares and 1,640,475 shares, respectively, shares.

The 2016 ESPP allows eligible employees to purchase shares of the Company's Class A common stock at a discount of 15% through payroll deductions of their eligible compensation, subject to any plan limitations. The 2016 ESPP provides for separate six-month offering periods beginning in May and November of each year.

On each purchase date, eligible employees purchase the Company's stock at a price per share equal to 85% of the lesser of (i) the fair market value of the Company's Class A common stock on the offering date or (ii) the fair market value of the Company's Class A common stock on the purchase date.

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As of December 31, 2022 December 31, 2023, total unrecognized compensation cost related to the 2016 ESPP was not significant.

Stock-options and restricted stock units and awards activity under the Company's equity incentive plans was is as follows:

Stock Options

		Number of options outstanding	Weighted- average exercise price (Per share)	Weighted- average remaining contractual term (In years)	Aggregate intrinsic value (In thousands)
Outstanding options as of December 31, 2022					
		Number of options outstanding	Weighted- average exercise price (Per share)	Weighted- average remaining contractual term (In years)	Aggregate intrinsic value (In thousands)
Outstanding options as of December 31, 2021		3,351,313	\$ 78.10	6.09	\$ 646,760
Granted		167,150	85.17		
Exercised					
Exercised					
Exercised	Exercised	(766,024)	29.32		
Forfeited and canceled	Forfeited and canceled	(475,060)	171.53		
Outstanding options as of December 31, 2022		2,277,379	\$ 75.54	5.32	\$ 39,167
Options vested and exercisable as of December 31, 2022		1,823,525	\$ 54.75	4.59	\$ 39,011
Forfeited and canceled					
Forfeited and canceled					
Outstanding options as of December 31, 2023					
Outstanding options as of December 31, 2023					

Outstanding options as of
December 31, 2023

Options
vested and
exercisable
as of
December
31, 2023

		Year Ended December 31,		
		2022	2021	2020
		(In thousands, except per share amounts)		
		Year Ended December 31,		
		Year Ended December 31,		
		Year Ended December 31,		
		2023		
		(In thousands, except per share amounts)		
		(In thousands, except per share amounts)		
		(In thousands, except per share amounts)		
Aggregate intrinsic value of stock options exercised ⁽¹⁾	Aggregate intrinsic value of stock options exercised ⁽¹⁾	\$ 80,839	\$ 508,539	\$ 603,597
Total estimated grant date fair value of options vested	Total estimated grant date fair value of options vested	\$ 77,403	\$ 138,851	\$ 107,854
Total estimated grant date fair value of options vested				
Total estimated grant date fair value of options vested				
Weighted-average grant date fair value per share of options granted	Weighted-average grant date fair value per share of options granted	\$ 50.66	\$ 216.29	\$ 170.70
Weighted-average grant date fair value per share of options granted				
Weighted-average grant date fair value per share of options granted				

(1) Aggregate intrinsic value represents the difference between the fair value of the Company's Class A common stock as reported on the New York Stock Exchange and the exercise price of outstanding "in-the-money" options.

As of December 31, 2022 December 31, 2023, total unrecognized compensation cost related to all unvested stock options was \$50.4 million, which will be amortized on a straight-line basis over a weighted-average period of 1.9 years. not significant.

Restricted Stock Units			
Number of awards outstanding	Weighted-average grant date fair value (Per share)	Aggregate intrinsic value (In thousands)	

Year Ended December 31,				
Year Ended December 31,				
Year Ended December 31,				
Employee Stock	Employee Stock			
Options:	Options:	2022	2021	2020
Fair value of common stock	Fair value of common stock	\$85.17	\$268.55 - \$409.21	\$108.37 - \$301.72
Fair value of common stock				
Fair value of common stock				
Expected term (in years)				
Expected term (in years)				
Expected term (in years)	Expected term (in years)	6.02	0.30 - 6.39	0.52 - 6.08
Expected volatility	Expected volatility	61.6%	42.9% - 61.5%	51.9% - 65.1%
Expected volatility				
Expected volatility				
Risk-free interest rate				
Risk-free interest rate				
Risk-free interest rate	Risk-free interest rate	3.3%	0.1% - 1.4%	0.1% - 1.4%
Dividend rate	Dividend rate	—%	—%	—%
Dividend rate				
Dividend rate				

The Company **uses** **used** **the following assumptions in** the Black-Scholes option pricing model to **measure** **estimate** the fair value of **its** **the** purchase rights issued under the 2016 ESPP:

Year Ended December 31,				
Year Ended December 31,				
Year Ended December 31,				
Year Ended December 31,				
Employee Stock Purchase Plan:	Employee Stock Purchase Plan:	2022	2021	2020
Fair value of common stock	Fair value of common stock	\$50.81 - \$99.68	\$297.20 - \$310.80	\$183.40 - \$278.50
Fair value of common stock				
Fair value of common stock				
Expected term (in years)				
Expected term (in years)				
Expected term (in years)	Expected term (in years)	0.50	0.50	0.50
Expected volatility	Expected volatility	73.2% - 97.3%	46.4% - 58.7%	54.4% - 72.1%
Expected volatility				
Expected volatility				
Risk-free interest rate				
Risk-free interest rate				
Risk-free interest rate	Risk-free interest rate	1.5% - 4.5%	—% - 0.1%	0.1% - 0.2%
Dividend rate	Dividend rate	—%	—%	—%
Dividend rate				
Dividend rate				

Stock-Based Compensation Expense

The Company recorded stock-based compensation expense as follows:

	Year Ended December 31,		
	2022	2021	2020
	(In thousands)		
Cost of revenue	\$ 21,136	\$ 14,074	\$ 8,857
Research and development	374,846	258,672	173,303
Sales and marketing	240,109	213,351	103,450
General and administrative	148,194	146,188	76,301
Restructuring costs	14,275	—	—
Total	\$ 798,560	\$ 632,285	\$ 361,911

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		Year Ended December 31,		
		2023	2022	2021
19. 20. Net Loss Per Share Attributable to Common Stockholders				
		(In thousands)		
The following table sets forth the calculation of basic and diluted net loss per share attributable to common stockholders during the periods presented:				
Cost of revenue		\$ 26,343	\$ 21,136	\$ 14,074
Research and development		Year Ended December 31, 331,526	374,846	258,672
Sales and marketing		Year Ended December 31, 183,389	240,109	213,351
General and administrative		Year Ended December 31, 121,584	148,194	146,188
Restructuring costs	2023	13,015	14,275	—
Total		\$ Year Ended December 31, 675,857	\$ 798,560	\$ 632,285
Net loss attributable to common stockholders (in thousands)				
		2022	2021	2020
Net loss attributable to common stockholders (in thousands)				
Net loss attributable to common stockholders (in thousands)	Net loss attributable to common stockholders (in thousands)	\$ (1,256,145)	\$ (949,900)	\$ (490,979)
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted	Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted	182,994,038	174,180,465	146,708,663
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted				
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted				
Net loss per share attributable to common stockholders, basic and diluted	Net loss per share attributable to common stockholders, basic and diluted	\$ (6.86)	\$ (5.45)	\$ (3.35)
Net loss per share attributable to common stockholders, basic and diluted				
Net loss per share attributable to common stockholders, basic and diluted				

The following outstanding shares of common stock equivalents were excluded from the calculation of the diluted net loss per share attributable to common stockholders because their effect would have been anti-dilutive:

	As of December 31,		
	2022	2021	2020
Stock options issued and outstanding	2,277,379	3,351,313	5,625,735
Unvested restricted stock units issued and outstanding	15,414,997	6,475,700	7,523,882
Class A common stock reserved for Twilio.org	530,449	618,857	707,265
Class A common stock committed under ESPP	766,334	147,947	103,703
Convertible Notes ^(a)	—	—	4,847,578
Class A common stock in escrow	31,503	75,506	75,612
Class A common stock in escrow and restricted stock awards subject to future vesting	56,237	235,054	268,030
Total	19,076,899	10,904,377	19,151,805

^(a) The Convertible Notes were fully redeemed in 2021 and were no longer outstanding as of December 31, 2021. As of December 31, 2020, the Company expected to settle the principal amount of the notes in shares of its Class A common stock, and as such used the if-converted method to calculate any potential dilutive effect of the debt settlement on diluted net income per share, if applicable.

	As of December 31,		
	2023	2022	2021
Stock options issued and outstanding	1,722,861	2,277,379	3,351,313
Unvested restricted stock units issued and outstanding	18,755,538	15,414,997	6,475,700
Shares of Class A common stock reserved for Twilio.org	442,041	530,449	618,857
Shares of Class A common stock committed under ESPP	426,199	766,334	147,947
Shares of Class A common stock in escrow	31,503	31,503	75,506
Shares of Class A common stock in escrow and restricted stock awards subject to future vesting	3,771	56,237	235,054
Total	21,381,913	19,076,899	10,904,377

20. 21. Income Taxes

The following table presents domestic and foreign components of loss before income taxes for the periods presented:

		Year Ended December 31,		
		2022	2021	2020
		(In thousands)		
		Year Ended December 31,		
		2023	2022	2021
		(In thousands)		
United States	United States	\$(1,021,208)	\$(737,360)	\$(403,148)
International	International	(222,424)	(223,569)	(101,278)
Loss before provision for income taxes		\$(1,243,632)	\$(960,929)	\$(504,426)
Loss before (provision for) benefit from income taxes				

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Provision for (benefit from) income taxes consists of the following:

Year Ended December 31,

		2022		2021	2020
		Year Ended December 31,			Year Ended December 31,
		2023			2022
		2023			2021
Current:	Current:	(In thousands)			Current:
Federal	Federal	\$ 3,928	\$ 122	\$ —	(In thousands)
State	State	4,100	420	272	
Foreign	Foreign	17,450	8,274	5,215	
Total	Total	25,478	8,816	5,487	
Deferred:	Deferred:				
Federal	Federal	(5,155)	(13,772)	(12,719)	
Federal					
Federal					
State	State	(818)	(4,083)	(3,563)	
Foreign	Foreign	(6,992)	(1,990)	(2,652)	
Total	Total	(12,965)	(19,845)	(18,934)	
Provision for (benefit from) income taxes	Provision for (benefit from) income taxes	\$ 12,513	\$(11,029)	\$(13,447)	

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. The following table presents the significant components of the Company's deferred tax assets and liabilities:

		As of December 31,	
		2022	2021
		As of December 31,	
		As of December 31,	
		As of December 31,	
Deferred tax assets:		As of December 31,	
Deferred tax assets:		As of December 31,	
Deferred tax assets:	Deferred tax assets:	(In thousands)	(In thousands)
Net operating loss carryforwards	Net operating loss carryforwards	\$ 959,864	\$ 1,054,585
Accrued and prepaid expenses		47,986	24,831
Accruals and reserves			
Accruals and reserves			
Accruals and reserves			
Stock-based compensation	Stock-based compensation	37,981	44,261
Stock-based compensation			
Stock-based compensation			
Research and development credits			
Research and development credits			
Research and development credits			
Research and development credits	Research and development credits	159,604	148,282
Intangibles	Intangibles	135,500	135,500
Intangibles			
Intangibles			
Capitalized research and development expenses			
Capitalized research and development expenses			
Capitalized research and development expenses	Capitalized research and development expenses	219,176	—
Lease liability	Lease liability	60,795	71,651
Lease liability			
Lease liability			
Unrealized losses on marketable securities	Unrealized losses on marketable securities	32,108	4,602
Unrealized losses on marketable securities			

Unrealized losses on marketable securities			
Investments and other basis differences			
Investments and other basis differences			
Investments and other basis differences			
Other			
Other			
Other	Other	36,830	28,859
Gross deferred tax assets	Gross deferred tax assets	1,689,844	1,512,571
Gross deferred tax assets			
Gross deferred tax assets			
Valuation allowance			
Valuation allowance			
Valuation allowance	Valuation allowance	(1,357,300)	(1,136,827)
Net deferred tax assets	Net deferred tax assets	332,544	375,744
Net deferred tax assets			
Net deferred tax assets			
Deferred tax liabilities:			
Deferred tax liabilities:			
Deferred tax liabilities:	Deferred tax liabilities:		
Capitalized software	Capitalized software	(36,552)	(28,825)
Capitalized software			
Capitalized software			
Prepaid expenses	Prepaid expenses	(1,587)	(1,649)
Prepaid expenses			
Prepaid expenses			
Acquired intangibles			
Acquired intangibles			
Acquired intangibles	Acquired intangibles	(202,778)	(251,034)
Right-of-use asset	Right-of-use asset	(35,734)	(64,277)
Right-of-use asset			
Right-of-use asset			
Deferred commissions			
Deferred commissions			
Deferred commissions	Deferred commissions	(59,675)	(47,897)
Net deferred tax liability		\$ (3,782)	\$ (17,938)
Net deferred tax asset (liability)			
Net deferred tax asset (liability)			

Net deferred tax asset
(liability)

The following table summarizes the Company's tax carryforwards, carryovers and credits:

	As of December 31, 2022 2023	Expiration Date (If not utilized)
	(In thousands)	
Federal tax credits	\$ 136,000 147,500	Various dates beginning in 2036 2037
Federal net operating loss carryforwards	\$ 3,665,700 3,444,800	Indefinite
State net operating loss carryforwards	\$ 2,684,800 2,640,300	Various dates beginning in 2026
State tax credits	\$ 105,200 120,300	Indefinite
Foreign net operating loss carryforwards	\$ 498,500 1,011,800	Indefinite

A limitation may apply to the use of the net operating loss and credit carryforwards, under provisions of the Internal Revenue Code of 1986, as amended, and similar state tax provisions that are applicable if the Company experiences an "ownership change." An ownership change may occur, for example, as a result of issuance of new equity. Should these limitations apply, the carryforwards would be subject to an annual limitation, resulting in a potential reduction in the gross deferred tax assets before considering the valuation allowance.

The Company's accounting for deferred taxes involves the evaluation of a number of factors concerning the realizability of its net deferred tax assets. The Company primarily considered such factors as its history of operating losses, the nature of the Company's deferred tax assets, and the timing, likelihood and amount, if any, of future taxable income during the periods in which those temporary differences and carryforwards become deductible.

At present, the Company does not believe that it is more likely than not that the federal, state and foreign net deferred tax assets will be realized, and accordingly, a valuation allowance has been established. The valuation allowance increased by approximately \$220.5 million \$176.6 million and \$459.0 million \$220.5 million during the years ended December 31, 2022 December 31, 2023 and 2021, 2022, respectively.

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A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

		Year Ended December 31,		
		2022	2021	2020
		(In thousands)		
		Year Ended December 31,		
		2023	2022	2021
		(In thousands)		
Unrecognized tax benefit, beginning of year	Unrecognized tax benefit, beginning of year	\$ 223,380	\$ 191,183	\$ 49,042
Gross increases for tax positions of prior years	Gross increases for tax positions of prior years	3,250	3,496	4,259
Gross decreases for tax positions of prior years	Gross decreases for tax positions of prior years	(705)	(10,693)	(931)
Gross increases for tax positions of current year	Gross increases for tax positions of current year	4,081	39,394	138,813
Lapse of statute of limitations	Lapse of statute of limitations	(1,040)	—	—
Unrecognized tax benefit, end of year	Unrecognized tax benefit, end of year	\$ 228,966	\$ 223,380	\$ 191,183

As of **December 31, 2022** **December 31, 2023**, the Company had approximately **\$229.0 million** **\$233.8 million** of unrecognized tax benefits. If the **\$229.0 million** **\$233.8 million** is recognized, **\$6.1 million** **\$5.1 million** would affect the effective tax rate. The remaining amount would be offset by the reversal of related deferred tax assets which are subject to a full valuation allowance.

The Company recognizes interest and penalties, if any, related to uncertain tax positions in its income tax provision. As of **December 31, 2022** **December 31, 2023**, **2021** **2022** and **2020**, **2021**, such amounts are not significant.

The Company does not anticipate any significant changes within 12 months of **December 31, 2022** **December 31, 2023**, in its uncertain tax positions that would be material to its consolidated financial statements taken as a whole because nearly all of the unrecognized tax benefit has been offset by a deferred tax asset, which has been reduced by a valuation allowance.

The Company files U.S. federal income tax returns as well as income tax returns in many U.S. states and foreign jurisdictions. As of **December 31, 2022** **December 31, 2023**, the tax years 2008 through the current period remain open to examination by the major jurisdictions in which the Company is subject to tax. Years outside the normal statute of limitation remain open to audit by tax authorities due to tax attributes generated in those early years, which have been carried forward and may be audited in subsequent years when utilized. The Company is fully reserved for all open U.S. federal, state and local, or non-U.S. income tax examinations by any tax authorities.

On June 7, 2019, a three-judge panel from the U.S. Court of Appeals for the Ninth Circuit overturned the U.S. Tax Court's decision in Altera Corp. v. Commissioner and upheld the portion of the Treasury regulations under Section 482 of the Internal Revenue Code that requires related parties in a cost-sharing arrangement to share expenses related to share-based compensation. As a result of this decision, the Company's gross unrecognized tax benefits increased to reflect the impact of including share-based compensation in cost-sharing arrangements. On July 22, 2019, Altera filed a petition for a rehearing before the full Ninth Circuit and the request was denied on November 12, 2019. On February 10, 2020, Altera filed a petition to appeal the decision to the Supreme Court and on June 22, 2020 the Supreme Court denied the petition. There is no impact on the Company's effective tax rate for years ended **December 31, 2022** **December 31, 2023** and **2021** **2022** due to a full valuation allowance against its deferred tax assets. We will continue to monitor future developments and their potential effects on our consolidated financial statements.

In connection with the Zipwhip acquisition, the Company recorded a net deferred tax liability which provides an additional source of taxable income to support the realization of the pre-existing deferred tax assets and, accordingly, during the year ended December 31, 2021, the Company released a total of \$15.9 million of its U.S. valuation allowance. The Company continues to maintain a valuation allowance for its U.S. Federal and State net deferred tax assets.

The provision for and benefit from income taxes recorded in the years ended **December 31, 2022** **December 31, 2023** and **2021**, **2022**, respectively, consist primarily of income taxes, withholding taxes in foreign jurisdictions in which the Company conducts business and the tax benefit related to the release of valuation allowance from acquisitions. The Company's U.S. operations have been in a loss position and the Company maintains a full valuation allowance against its U.S. deferred tax assets.

Beginning in 2022, the Tax Cuts and Jobs Act of 2017 eliminated the right to deduct research and development expenditures for tax purposes in the period the expenses were incurred and instead requires all U.S. and foreign research and development expenditures to be amortized over 5 and 15 tax years, respectively. The Company's provision for income taxes for the year ended December 31, 2022 included \$7.5 million due to this required capitalization of research and development expenditures.

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21. Subsequent Events

On February 13, 2023, the Company committed to a workforce reduction plan that, in addition to the September Plan, is intended to reduce operating costs, improve operating margins, and accelerate profitability (the "February Plan"). The February Plan included the elimination of approximately 17% of the Company's workforce. The Company estimates that it will incur approximately \$100.0 million to \$135.0 million in charges in connection with the February Plan, consisting of cash expenditures for employee transition, notice period and severance payments, employee benefits and related facilitation costs. The Company expects that the majority of the restructuring charges related to the February Plan will be incurred in the first quarter of 2023 and that the execution of the February Plan, including cash payments, will be substantially complete by the end of the second quarter of 2023. Potential position eliminations in each country are subject to local laws and consultation requirements, which may extend this process beyond the second quarter of 2023 in certain countries. The charges that the Company expects to incur are subject to a number of assumptions, including local law requirements in various jurisdictions, and therefore, actual expenses may differ materially from the estimates disclosed above.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our **Principal** **Chief** Financial Officer, has evaluated 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 the end of the period covered by this Annual Report on Form 10-K.

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Based on this evaluation, our Chief Executive Officer and our **Principal Chief** Financial Officer concluded that, as of **December 31, 2022** **December 31, 2023**, our disclosure controls and procedures were effective to provide reasonable assurance that 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's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and our **Principal Chief** Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting and for the assessment of the effectiveness of internal control over financial reporting as defined in Rule 13a-15(f) and 15d-15(f) under the Exchange Act. Internal control over financial reporting is a process designed under the supervision and with the participation of our management, including our Chief Executive Officer and our **Principal Chief** Financial Officer, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S generally accepted accounting principles.

Under the supervision and with the participation of our Chief Executive Officer and our **Principal Chief** Financial Officer and oversight of the board of directors, our management conducted an evaluation of the effectiveness of our internal control over financial reporting as of **December 31, 2022** **December 31, 2023**, based on the criteria set forth in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on this evaluation, management concluded that our internal control over financial reporting was effective as of **December 31, 2022** **December 31, 2023**.

The effectiveness of our internal control over financial reporting as of **December 31, 2022** **December 31, 2023** has been audited by KPMG LLP, an independent registered public accounting firm, as stated in their report which is included in Part II, Item 8, "Financial Statements and Supplementary Data," of this Annual Report on Form 10-K.

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Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the three months ended **December 31, 2022** **December 31, 2023**, that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and our **Principal Chief** Financial Officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the organization have been detected. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information

Not applicable. Securities Trading Plans of Directors and Executive Officers

During the three months ended December 31, 2023, none of our directors or officers adopted or terminated a "Rule 10b5-1 trading arrangement" or a "non-Rule 10b5-1 trading arrangement" (each as defined in Item 408 of Regulation S-K).

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

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PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to our Proxy Statement relating to our **2023** **2024** Annual Meeting of Stockholders (the "Proxy Statement"). The Proxy Statement will be filed with the SEC within 120 days of the year ended **December 31, 2022** **December 31, 2023**.

Codes of Business Conduct and Ethics

Our board of directors has adopted a code of conduct that applies to all officers, directors and employees, which is available on our website at (investors.twilio.com) under "Governance". "Governance." We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding amendments to, or waiver from, a provision of our code of conduct by posting such information on the website address and location specified above.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to the Proxy Statement to be filed with the SEC within 120 days of the year ended December 31, 2022 December 31, 2023.

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

The information required by this item is incorporated by reference to the Proxy Statement to be filed with the SEC within 120 days of the year ended December 31, 2022 December 31, 2023.

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

The information required by this item is incorporated by reference to the Proxy Statement to be filed with the SEC within 120 days of the year ended December 31, 2022 December 31, 2023.

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Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated by reference to the Proxy Statement to be filed with the SEC within 120 days of the year ended December 31, 2022 December 31, 2023.

PART IV

Item 15. Exhibit and Financial Statement Schedules

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

1. Financial Statements

See Index to Financial Statements at Item 8 herein.

2. Financial Statement Schedules

Schedules not listed above have been omitted because they are not required, not applicable, or the required information is otherwise included.

3. Exhibits

The exhibits listed below are filed as part of this Annual Report on Form 10-K or are incorporated herein by reference, in each case as indicated below.

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
2.1	Agreement and Plan of Merger and Reorganization, dated as of May 16, 2021, by and among Twilio Inc., Zeus Merger Sub I, Inc., Zeus Merger Sub II, LLC, Zirwhip, Inc. and Fortis Advisors LLC	10-Q	001-37806	2.1	July 30, 2021
2.2	Agreement and Plan of Reorganization, dated as of October 12, 2020, by and among Twilio Inc., Scorpio Merger Sub, Inc., Segment.io, Inc., and Shareholder Representative Services LLC	S-3	333-249889	2.1	November 5, 2020
3.1	Amended and Restated Certificate of Incorporation of Twilio Inc.	S-1A	333-211634	3.1	June 13, 2016
3.2	Second Amended and Restated Bylaws of Twilio Inc.	10-Q	001-37806	3.1	August 4, 2020
4.1	Form of Class A Common Stock Certificate of Twilio Inc.	S-1	333-211634	4.1	May 26, 2016
4.2	Indenture, dated as of March 9, 2021 by and between Twilio Inc. and U.S. Bank National Association, as Trustee	8-K	001-37806	4.1	March 9, 2021
4.3	First Supplemental Indenture, dated as of March 9, 2021, between Twilio Inc. and U.S. Bank National Association, as Trustee	8-K	001-37806	4.2	March 9, 2021

4.4	Form of 3.625% Senior Notes due 2029	8-K	001-37806	4.3	March 9, 2021
4.5	Form of 3.875% Senior Notes due 2031	8-K	001-37806	4.4	March 9, 2021
4.6	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934	10-K	001-37806	4.5	February 26, 2021
10.1*	Form of Indemnification Agreement	10-K	001-37806	10.1	February 26, 2021
10.2*	Twilio Inc. Amended and Restated 2008 Stock Option Plan and forms of Stock Option Agreement and form of Stock Option Grant Notice	10-K	001-37806	10.2	February 26, 2021
10.3*	Twilio Inc. Amended and Restated 2016 Stock Option and Incentive Plan, and forms of Agreements thereunder	10-K	001-37806	10.3	February 26, 2021
10.4*	Twilio Inc. 2019 France Sub-Plan to the 2016 Stock Option and Incentive Plan	10-Q	001-37806	10.2	October 31, 2019
10.5*	Twilio Inc. Amended and Restated Non-Employee Director Compensation Policy	10-Q	001-37806	10.1	November 4, 2022
10.6*	Twilio Inc. Amended and Restated 2016 Employee Stock Purchase Plan	10-Q	001-37806	10.1	October 31, 2019
10.7	Sublease, dated as of August 30, 2018, by and between Salesforce.com, Inc. and Twilio Inc.	10-Q	001-37806	10.1	November 8, 2018

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10.8	Consent to Sublease Agreement, dated as of September 25, 2018, by and among Hudson Rincon Center, LLC, Salesforce.com Inc. and Twilio Inc.	10-Q	001-37806	10.2	November 8, 2018
10.9*	Offer Letter with Khozema Shipchandler, dated August 20, 2018	8-K	001-37806	10.1	October 25, 2018
10.10*	Offer Letter with Marc Boroditsky, dated October 25, 2021	10-K	001-37806	10.15	February 22, 2022
10.11*	Offer Letter with Eyal Manor, dated October 13, 2021	10-K	001-37806	10.16	February 22, 2022
10.12*	Offer Letter with Dana Wagner, dated October 7, 2021	10-K	001-37806	10.17	February 22, 2022
10.13*	Offer Letter with Elena Donio, dated as of April 28, 2022	10-Q	001-37806	10.1	August 5, 2022
10.14*	Offer Letter with Aidan Viggiano, dated February 10, 2023				Filed herewith
10.15*	Letter Agreement with Eyal Manor, dated February 2, 2023				Filed herewith
10.16*	Chief Executive Officer Severance Plan, dated as of March 28, 2018, and form of participation letter	10-Q	001-37806	10.1	May 10, 2018
10.17*	Key Executive Severance Plan, dated as of March 28, 2018 and form of participation letter	10-Q	001-37806	10.2	May 10, 2018
10.18+†	Framework Agreement, dated as of February 26, 2021, by and among Twilio Inc., Carlyle Partners V Holdings, L.P. and Syniverse Corporation	10-Q	001-37806	10.1	May 6, 2021
10.19	Framework Agreement Letter Agreement, dated as of August 16, 2021, by and among Twilio Inc., Carlyle Partners V Holdings, L.P. and Syniverse Corporation	8-K	001-37806	2.1	August 17, 2021
10.20	Second Framework Agreement Letter Agreement, dated as of May 13, 2022, by and among Twilio Inc., Carlyle Partners V Holdings, L.P. and Syniverse Corporation	8-K	001-37806	2.1	May 16, 2022
21.1	List of Subsidiaries of Twilio Inc.				Filed herewith
23.1	Consent of KPMG, LLP, Independent Registered Public Accounting Firm				Filed herewith
24.1	Power of Attorney (included in signature page hereto)				Filed herewith
31.1	Certification of the Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed herewith
31.2	Certification of the Chief Operating Officer (Principal Financial Officer) pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed herewith
32.1**	Certifications of the Chief Executive Officer and Chief Operating Officer (Principal Financial Officer) pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				Furnished herewith
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document				Filed herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document.				Filed herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.				Filed herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.				Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.				Filed herewith

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
2.1	Agreement and Plan of Merger and Reorganization, dated as of May 16, 2021, by and among Twilio Inc., Zeus Merger Sub I, Inc., Zeus Merger Sub II, LLC, Zipwhip, Inc. and Fortis Advisors LLC	10-Q	001-37806	2.1	July 30, 2021
2.2	Agreement and Plan of Reorganization, dated as of October 12, 2020, by and among Twilio Inc., Scorpio Merger Sub, Inc., Segmentio, Inc., and Shareholder Representative Services LLC	S-3	333-249889	2.1	November 5, 2020
3.1	Amended and Restated Certificate of Incorporation of Twilio Inc.	S-1/A	333-211634	3.1	June 13, 2016
3.2	Third Amended and Restated Bylaws of Twilio Inc.	8-K	001-37806	3.1	February 9, 2024
3.3	Certificate of Retirement of Class B Common Stock of Twilio Inc. dated as of June 28, 2023	8-K	001-37806	3.1	June 29, 2023
4.1	Form of Class A Common Stock Certificate of Twilio Inc.	S-1	333-211634	4.1	May 26, 2016
4.2	Indenture, dated as of March 9, 2021 by and between Twilio Inc. and U.S. Bank National Association, as Trustee	8-K	001-37806	4.1	March 9, 2021
4.3	First Supplemental Indenture, dated as of March 9, 2021, between Twilio Inc. and U.S. Bank National Association, as Trustee	8-K	001-37806	4.2	March 9, 2021
4.4	Form of 3.625% Senior Notes due 2029	8-K	001-37806	4.3	March 9, 2021
4.5	Form of 3.875% Senior Notes due 2031	8-K	001-37806	4.4	March 9, 2021
4.6	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934				Filed herewith
10.1*	Form of Indemnification Agreement	10-K	001-37806	10.1	February 26, 2021
10.2*	Twilio Inc. Amended and Restated 2008 Stock Option Plan and forms of Stock Option Agreement and form of Stock Option Grant Notice	10-K	001-37806	10.2	February 26, 2021
10.3*	Twilio Inc. Amended and Restated 2016 Stock Option and Incentive Plan, and forms of agreements thereunder	10-K	001-37806	10.3	February 26, 2021
10.4*	Twilio Inc. 2019 France Sub-Plan to the 2016 Stock Option and Incentive Plan	10-Q	001-37806	10.2	October 31, 2019
10.5*	Cash-Based Award Agreement for Company Employees under the Twilio Inc. 2016 Stock Option and Incentive Plan	8-K	001-37806	10.1	February 22, 2023
10.6*	Twilio Inc. Amended and Restated Non-Employee Director Compensation Policy	10-Q	001-37806	10.1	November 4, 2022
10.7*	Twilio Inc. Amended and Restated 2016 Employee Stock Purchase Plan	10-Q	001-37806	10.1	October 31, 2019
10.8	Twilio Inc. Amended Chief Executive Officer Severance Plan	8-K	001-37806	10.2	February 22, 2023
10.9*	Twilio Inc. Senior Executive Severance Plan	8-K	001-37806	10.3	February 22, 2023
10.10*	Twilio Inc. Non-Employee Directors' Deferred Compensation Program and forms thereunder	10-Q	001-37806	10.6	May 10, 2023
10.11*	Twilio Inc. Executive Incentive Compensation Plan	8-K	001-37806	10.1	December 1, 2023
10.12*	Offer Letter with Dana Wagner, dated as of October 7, 2021	10-K	001-37806	10.17	February 22, 2022
10.13*	Offer Letter with Elena Donio, dated as of April 28, 2022	10-Q	001-37806	10.1	August 5, 2022
10.14*	Offer Letter with Aidan Viggiano, dated February 10, 2023	10-K	001-37806	10.14	February 27, 2023
10.15*	Separation Agreement and Release with Jeff Lawson, dated as of January 7, 2024	8-K	001-37806	10.2	January 8, 2024
10.16*	Offer Letter with Khozema Shipchandler, dated as of January 7, 2024	8-K	001-37806	10.1	January 8, 2024
10.17	Sublease, dated as of August 30, 2018, by and between Salesforce.com, Inc. and Twilio Inc.	10-Q	001-37806	10.1	November 8, 2018
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10.21	Second Framework Agreement Letter Agreement, dated as of May 13, 2022, by and among Twilio Inc., Carlyle Partners V Holdings, L.P. and Syniverse Corporation	8-K	001-37806	2.1	May 16, 2022
21.1	List of Subsidiaries of Twilio Inc.				Filed herewith
23.1	Consent of KPMG, LLP, Independent Registered Public Accounting Firm				Filed herewith
24.1	Power of Attorney (included in signature page hereto)				Filed herewith

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31.2	Certification of the Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				Filed herewith
32.1**	Certifications of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				Furnished herewith
97.1	Twilio Inc. Compensation Recovery Policy				Filed herewith
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document				Filed herewith
101.SCH	Inline XBRL Taxonomy Extension Schema Document				Filed herewith
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document				Filed herewith
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document				Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				Filed herewith
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document				Filed herewith
104	Cover Page with Interactive Data File (formatted as Inline XBRL with applicable taxonomy extension information contained in Exhibits 101).				
<p>+ Schedules and other similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The registrant hereby undertakes to furnish supplemental copies of any of the omitted schedules and other similar attachments upon request by the Securities and Exchange Commission.</p> <p>† Certain portions of this exhibit have been omitted because they are not material, and they are the type of information that the registrant treats as private or confidential.</p> <p>* Indicates a management contract or compensatory plan or arrangement.</p> <p>** The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Annual Report on Form 10-K and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates it by reference.</p>					

Item 16. Form 10-K Summary

None.

SIGNATURES

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

TWILIO INC.

By: /s/ JEFF LAWSON KHOZEMA Z. SHIPCHANDLER

Jeff Lawson Khozema Z. Shipchandler
Chief Executive Officer

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POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Jeff Lawson, Khozema Z. Shipchandler, Aidan Viggiano and Dana R. Wagner, and each of them, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes, may lawfully do or cause to be done by virtue thereof.

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

February 24, 2023 27, 2024

/s/ JEFF LAWSON KHOZEMA Z. SHIPCHANDLER

Jeff Lawson
Khozema Z. Shipchandler
Director and Chief Executive Officer (Principal Executive Officer)

February 24, 2023 27, 2024

/s/ KHOZEMA Z. SHIPCHANDLER AIDAN VIGGIANO

Khozema Z. Shipchandler
Aidan Viggiano
Chief Operating Financial Officer (Principal Accounting and Financial Officer)

February 24, 2023 27, 2024

/s/ RICHARD L. DALZELL CHARLIE BELL

Richard L. Dalzell
Charlie Bell
Director

February 24, 2023 27, 2024

/s/ BYRON B. DEETER

Byron B. Deeter
Director

February 24, 2023 27, 2024

/s/ DONNA L. DUBINSKY

Donna L. Dubinsky
Director

February 24, 2023 27, 2024

/s/ JEFF EPSTEIN

Jeff Epstein
Director

February 24, 2023 27, 2024

/s/ JEFFREY R. IMMELT

Jeffrey R. Immelt
Director

February 24, 2023 27, 2024

/s/ DEVAL L. PATRICK

Deval L. Patrick
Director

February 24, 2023 27, 2024

/s/ ERIKA ROTTENBERG

Erika Rottenberg
Director

February 24, 2023 27, 2024

/s/ MIYUKI SUZUKI

Miyuki Suzuki
Director

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Exhibit 10.14

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Exhibit 4.6

February 10, 2023

Dear Aidan, DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

On behalf As of December 31, 2023, Twilio Inc., a Delaware corporation ("Twilio," the "Company," "we," "us," and "our") had one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Company" or "Twilio" "Exchange Act"). I am pleased to offer you the position of Chief Financial Officer with the Company. We are very excited to continue working with you and look forward to your continued success. The terms of your new position with the Company are as set forth below. This letter agreement supersedes in its entirety the letter agreement you entered into with the Company dated June 21, 2019 (the "Previous Agreement")

1. **Position.** As Chief Financial Officer, this role is eligible to be fully remote in accordance with Twilio policies, but you will make yourself available to work from the Company's **San Francisco** office on an as-needed basis. This role is classified as exempt from overtime rules. The Company reserves the right to modify your job duties from time to time in its sole discretion.

2. **Start Date.** Subject to the fulfillment of any conditions imposed by this letter agreement, you will be transferring into your new position effective on **March 1, 2023** (the "**Start Date**").

3. **Compensation:** our Class A common stock, par value \$0.001 per share.

DESCRIPTION OF CAPITAL STOCK

General

The following description summarizes certain important terms of the capital stock of Twilio, as they are currently in effect. Because it is only a summary, it does not contain all the information that may be important to you. For a complete description of the matters set forth in this section titled "Description of Capital Stock," you should refer to Twilio's amended and restated certificate of incorporation and amended and restated bylaws and to the applicable provisions of Delaware law. As of December 31, 2023, Twilio's authorized capital stock consists of 1,103,170,181 shares of capital stock, \$0.001 par value per share, of which:

- a. • **Base Salary** 1,000,000,000 shares are designated as Class A common stock;
- You will receive a gross base annual salary rate, subject to applicable deduction 3,170,181 shares are designated as Class B common stock; and
- withholding, • 100,000,000 shares are designated as preferred stock.

On June 28, 2023, all of **\$850,000.00 USD**. Your base annual salary will be payable on a bi-weekly basis the then outstanding shares of our Class B common stock automatically converted into the same number of shares of our Class A common stock pursuant to the Company's regular payroll policy. As an exempt employee, you are not eligible for overtime pay, terms of our amended and your compensation will not fluctuate according restated certificate of incorporation, which date we refer to as the quantity "Final Conversion Date". Our amended and restated certificate of work performed. incorporation prohibits the reissuance of such shares of converted Class B common stock. On June 28, 2023, we filed a certificate of retirement with the Secretary of State of the State of Delaware effecting the retirement of 96,829,819 shares of our Class B common stock that had converted into shares of our Class A common stock. This certificate of retirement had the additional effect of amending our amended and restated certificate of incorporation so as to (i) reduce the total number of authorized shares of our capital stock by 96,829,819, thereby reducing the total number of authorized shares of our capital stock to 1,103,170,181, and (ii) reduce the number of authorized shares of our Class B common stock by 96,829,819, thereby reducing the number of authorized shares of our Class B common stock to 3,170,181.

b. **Restricted Stock Units.** Subject to The Twilio board of directors ("Board") is authorized, without stockholder approval except as required by the Company's Board listing standards of Directors (the "**Board**") or the Compensation New York Stock Exchange, to issue additional shares of our Class A common stock and, Talent Management Committee (the "**Committee**"), on or following your Start Date, you will be granted restricted stock units (the "**RSUs**") with a total value of approximately \$3,000,000. The number of RSUs subject to such grant will be determined limitations prescribed by dividing {(RSUS)} Delaware law, to issue shares of our preferred stock. Following the Final Conversion Date, we are prohibited by the average closing market price our amended and restated certificate of incorporation from issuing additional shares of our Class B common stock.

Our Class A common stock is listed on the New York Stock Exchange under the symbol "TWLO."

Common Stock

The outstanding shares of one share Twilio's common stock are fully paid and non-assessable.

Dividend Rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the Company's time, the holders of Twilio Class A and Class B common stock are entitled to receive dividends equally, identically and ratably out of funds legally available if the Twilio Board, in its discretion, determines to issue dividends and then only at the times and in the amounts that the Twilio Board may determine.

Voting Rights

Holders of Twilio Class A common stock over are entitled to one vote for each share of Twilio Class A common stock held on all matters submitted to a vote of stockholders and holders of Twilio Class B common stock are entitled to 10 votes for each share of Twilio Class B common stock held on all matters submitted to a vote of stockholders. Holders of shares of Twilio Class A common stock and Twilio Class B common stock vote together as a single class on all matters (including the 30-day period ending five business days before election of directors) submitted to a vote of stockholders, unless otherwise required by law. Twilio has not provided for cumulative voting for the effective date election of grant (the "**Grant Date**"). directors in its amended and restated certificate of incorporation. Twilio's amended and restated certificate of incorporation and amended and

restated bylaws provide for a classified board of directors consisting of three classes as nearly equal in size as is practicable, each serving staggered three-year terms.

No Preemptive or Similar Rights

Twilio Class A and Class B common stock are not entitled to preemptive rights, and are not subject to conversion, redemption or sinking fund provisions, except for the conversion provisions with respect to the Class B common stock described below.

Right to Receive Liquidation Distributions

If Twilio becomes subject to a liquidation, dissolution or winding-up, the assets legally available for distribution to Twilio stockholders would be distributable equally, identically and ratably among the holders of Twilio Class A and Class B common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Conversion

Each RSU entitles you to outstanding share of Twilio Class B common stock is convertible at any time at the option of the holder into one share of the Company's Twilio Class A Common Stock if common stock. In addition, each share of Twilio Class B common stock will convert automatically into one share of Twilio Class A common stock upon any transfer, whether or not for value, except for certain permitted transfers described in Twilio's amended and when restated certificate of incorporation, including transfers to family members, certain trusts solely for the RSU vests. Subject to Board or Committee approval, the Grant Date will be on or after the 20th day benefit of the month following stockholder or other persons, and partnerships, corporations, and other entities exclusively controlled by the later stockholder or their family members. Once converted or transferred and converted into Twilio Class A common stock, the Twilio Class B common stock will not be reissued.

On June 28, 2023, the Final Conversion Date, all of the offer acceptance date or Start Date. In general, then outstanding shares of our Class B common stock automatically converted into the RSU will commence vesting on the first to occur same number of February 15, May 15, August 15, or November 15 immediately following your Start Date and will vest in equal quarterly installments thereafter for 16 quarters, subject to your continued employment with the Company through each vesting date. The RSUs will be subject shares of our Class A common stock pursuant to the terms of our amended and conditions restated certificate of incorporation. Our amended and restated certificate of incorporation prohibits the equity incentive plan under which they reissuance of such shares of converted Class B common stock. Following the Final Conversion Date, we are granted the "Plan" prohibited by our amended and the RSU agreement thereunder, which you will be required to sign as a condition to receiving your RSUs, restated certificate of incorporation from issuing additional shares of our Class B common stock.

4. Preferred Stock Benefits. You are eligible to participate in the Company's benefits plans as outlined in Twilio's benefits - Limitations on Rights of Holders of Common Stock summary, which has been previously provided to you. All benefits will be administered pursuant to Company policy and any applicable law. Eligibility and coverage under Company benefit programs will be The Twilio Board is authorized, subject to the terms and conditions of the applicable plans limitations prescribed by Delaware law, to issue preferred stock in one or programs, which may change from time more series, to time. The benefit plans and packages offered by the Company may be modified at any time, with or without advance notice, at the Company's sole discretion.

5. At-Will Employment. Your employment with the Company will continue be on an "at will" basis, meaning that either you or the Company may terminate your employment at any time with or without cause or advance notice. This is the full and complete agreement between you and the Company on this term and nothing in this letter agreement or in any document or statement, and nothing implied from any course of conduct will limit the Company's or your right to terminate at-will employment. Although your job duties, title, reporting relationship, compensation and benefits, as well as the Company's personnel policies and procedures, may change establish from time to time the "at will" nature number of your employment shares to be included in each series and to fix the designation, powers, preferences and rights of the shares of each series and any of its qualifications, limitations or restrictions, in each case without further vote or action by Twilio stockholders. The Twilio Board can also increase or decrease the number of shares of any such series of preferred stock, but not below the number of shares of that series then outstanding, without any further vote or action by Twilio stockholders. The Twilio Board may only be changed authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of Twilio Class A or Class B common stock.

Listing Agent

The transfer agent and registrar for Twilio Class A common stock is Computershare Trust Company, N.A.

Anti-Takeover Provisions

The provisions of Delaware law, Twilio's amended and restated certificate of incorporation and Twilio's amended and restated bylaws, which are summarized below, may have the effect of delaying, deferring or discouraging another person from acquiring control of the company. They are also designed, in part, to encourage persons seeking to acquire control of Twilio to negotiate first with the Twilio Board. Twilio believes that the benefits of increased protection of its potential ability to negotiate with an unfriendly or unsolicited acquiror outweigh the disadvantages of discouraging a proposal to acquire it because negotiation of these proposals could result in an express written agreement signed improvement of their terms.

Delaware Law

Twilio is governed by you and a duly authorized officer the provisions of Section 203 of the Company, Delaware General Corporation Law. In general, Section 203 prohibits a public Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:



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• prior to such time the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

• upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock of the corporation outstanding (but not the outstanding voting stock owned by the interested stockholder) shares owned by directors who are also officers of the corporation and shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

• at or subsequent to the time the stockholder became an interested stockholder, the business combination was approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines a "business combination" to include mergers, asset sales and other transactions resulting in financial benefit to a stockholder and an "interested stockholder" as a person who, together with affiliates and associates, owns, or within three years did own, 15% or more of the corporation's outstanding voting stock. These provisions may have the effect of delaying, deferring or preventing changes in control of Twilio.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaw Provisions

Twilio's amended and restated certificate of incorporation and amended and restated bylaws include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of the company, as well as changes in the Twilio Board or management team, including the following:

6. Board of Directors Vacancies. **Standards** Twilio's amended and restated certificate of **Conduct**, incorporation and amended and restated bylaws authorize only the Twilio Board to fill vacant directorships, including newly created seats resulting from an increase in the authorized number of directors. In addition, subject to the rights of holders of any series of our preferred stock with respect to the election of directors, the number of directors constituting the Twilio Board is permitted to be set only by a resolution adopted by the Twilio Board. These provisions prevent a stockholder from increasing the size of the Twilio Board and then gaining control of the Twilio Board by filling the resulting vacancies with its own nominees. This makes it more difficult to change the composition of the Twilio Board and will promote continuity of management.

Dual Class Common Stock. As described above in the section titled "-Common Stock-Voting Rights," Twilio's amended and restated certificate of incorporation provides for a dual class common stock structure. On June 28, 2023, the Final Conversion Date, all of the then outstanding shares of our Class B common stock automatically converted into the same number of shares of our Class A common stock pursuant to the terms of our amended and restated certificate of incorporation. Our amended and restated certificate of incorporation prohibits the reissuance of such shares of converted Class B common stock. On June 28, 2023, we filed a certificate of retirement with the Secretary of State of the State of Delaware effecting the retirement of 96,829,819 shares of our Class B common stock that had converted into shares of our Class A common stock. Following such conversion and as a result of such retirement, 3,170,181 shares of our Class B common stock remain authorized but unissued. However, following the Final Conversion Date, we are prohibited by our amended and restated certificate of incorporation from issuing additional shares of our Class B common stock.

Classified Board. Twilio's amended and restated certificate of incorporation and amended and restated bylaws provide that the Twilio Board be classified into three classes of directors, each of which hold office for a three-year term. In addition, directors may only be removed from the Twilio Board for cause. The existence of a classified board could delay a potential acquiror from obtaining majority control of the Twilio Board, and the prospect of that delay might deter a potential acquiror.

Stockholder Action; Special Meeting of Stockholders. Twilio's amended and restated certificate of incorporation provides that, subject to the rights of the holders of any series of our preferred stock, our stockholders may not take action by written consent, but may only take action at annual or special meetings of stockholders. As a **Company employee**, **you must abide** result, a holder controlling a majority of Twilio's capital stock would not be able to amend Twilio's amended and restated bylaws or remove directors without holding a meeting of stockholders called in accordance with Twilio's amended and restated bylaws. Twilio's amended and restated certificate of incorporation and amended and restated bylaws further provide that special meetings of stockholders may be called only by **Company rules** a majority of the Twilio Board, the chairman of the Twilio Board, Twilio's Chief Executive Officer or its President (in the absence of a Chief Executive Officer), thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of Twilio stockholders to force consideration of a proposal or for stockholders controlling a majority of Twilio's capital stock to take any action, including the removal of directors.

Advance Notice Requirements for Stockholder Proposals and standards of Director Nominations. Twilio's amended and restated bylaws provide advance notice procedures for stockholders seeking to bring business before its annual **conduct now existing**

meeting of stockholders or **established** to nominate candidates for election as directors at its annual meeting of stockholders or any special meeting of stockholders at which directors are to be elected. Twilio's amended and restated bylaws also specify certain requirements regarding the form and content of a stockholder's notice. These provisions might preclude Twilio stockholders from bringing matters before its annual meeting of stockholders or from making nominations for directors at a meeting of stockholders if the proper

procedures are not followed. These provisions may also discourage or deter a potential acquiror from conducting a solicitation of proxies to elect the acquiror's own slate of directors or otherwise attempting to obtain control of Twilio.

No Cumulative Voting. The Delaware General Corporation Law provides that stockholders are not entitled to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Twilio's amended and restated certificate of incorporation does not provide for cumulative voting.

Directors Removed Only for Cause. Twilio's amended and restated certificate of incorporation provides that stockholders may remove directors only for cause.

Amendment of Charter Provisions. Any amendment of certain provisions in Twilio's amended and restated certificate of incorporation requires approval by holders of at least two-thirds of the voting power of the then-outstanding capital stock.

Amendment of Bylaws. Our amended and restated bylaws may be adopted, amended or repealed by the stockholders entitled to vote; provided, however, that any adoption, amendment, repeal or alteration by the stockholders requires approval by holders of at least eighty percent (80%) of the voting power of outstanding voting securities, voting together as a single class. The Twilio Board also has the power to adopt, amend or repeal the amended and restated bylaws.

Issuance of Undesignated Preferred Stock. The Twilio Board has the authority, without further action by the Twilio stockholders, to issue up to 100,000,000 shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by the Company, including Twilio Board. The existence of authorized but unissued shares of preferred stock would enable the Twilio Board to render more difficult or to discourage an attempt to obtain control of Twilio by means of a merger, tender offer, proxy contest or other means.

Choice of Forum. Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware is the sole and exclusive forum to bring any policies relating to insider trading state law claims for: (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a breach of fiduciary duty owed by our directors, officers, employees or our stockholders; (iii) any action asserting a claim against us, or our directors, officers, employees or stockholders, arising under the DGCL, our amended and the clawback restated certificate of compensation as may be in effect from time to time. You agree incorporation or our amended and acknowledge restated bylaws; or (iv) any action asserting a claim against us, or our directors, officers, employees or stockholders, that you have read and will continue to abide is governed by the policies contained in internal affairs doctrine. This provision would not apply to suits brought to enforce a duty or liability created by the Company's Employee Handbook and Code of Conduct.

Miscellaneous. This letter agreement, and the Arbitration Agreement and the Proprietary Information and Inventions Agreement, both of which you previously signed, along with Exchange Act or any other similar proprietary information agreements you entered into with the Company, constitute the entire agreement between you and the Company regarding the terms and conditions of your employment on and following the Start Date. You agree that no agreements or representations, verbal or written, with respect to the subject matter of this offer have been made to you other than those set forth in this letter agreement. To the extent any such agreements or representations were made, this letter agreement supersedes any and all previous offers, statements, agreements and representations that you made with the company in the course of discussions and negotiations claim for this letter agreement, including the Previous Agreement. Changes to the terms of this letter agreement, other than the changes to employment terms reserved to the Company's discretion, require a written modification signed by an authorized officer of the Company. If any provision of this letter agreement is determined to be invalid or unenforceable, in whole or in part, this determination will not affect any other provision of this letter agreement and the provision in question will be modified so as to be rendered enforceable in a manner consistent with the intent of the parties insofar as possible under applicable law. This letter agreement may be delivered and executed via facsimile, electronic mail (including pdf or any electronic signature complying with which the U.S. federal ESIGN courts have exclusive jurisdiction).

Our amended and restated bylaws further provide that the United States District Court for the Northern District of California is the sole and exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act of 2000, Uniform Electronic Transactions Act 1933, as amended.

Our amended and restated bylaws provide that any person or other applicable law) entity purchasing or other transmission method and otherwise acquiring any interest in shares of our capital stock will be deemed to have been duly notice of and validly delivered and executed and be valid and effective for all purposes.

[signature page follows]

Exhibit 10.14

0001447669-23-000049image1.jpg

We are all delighted to be able to extend you this offer and we look forward to working with you. To indicate your acceptance of the Company's offer as set forth above, please sign and date this letter in the space provided below.

Very truly yours,

TWILIO INC.

/s/ Christy Lake

Christy Lake
Chief People Officer

ACCEPTED AND AGREED:

I agree to and accept employment with the Company on the terms and conditions set forth in this letter agreement. I understand and agree that my employment with the Company is "at will."

/s/ Aidan Viggiano

AIDAN VIGGIANO

Exhibit 10.15

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February 2, 2023

This bonus agreement (the "**Agreement**") updates and confirms the bonus letter between you and Twilio Inc. (the "**Company**") that was provided to you in December 2022.

As you made extraordinary contributions **consented** to the Company throughout the year and have continued to provide exemplary value to the Company, the Compensation and Talent Management Committee has determined to provide you with a one-time discretionary incentive for these contributions and to further incent you to continue your services with us, **foregoing choice of forum provisions of our bylaws**.

Bonus. Subject to the terms of this Agreement, you are eligible to receive \$2,500,000, less applicable tax withholdings and other required deductions, (the "**Bonus**"). Payment of the Bonus is expressly contingent upon you remaining actively employed by the Company on a continuous, full-time basis through the close of business on February 24, 2023. If you resign for any reason or your employment is terminated by the Company for "Cause" (as defined in the Company's Key Executive Severance Plan) prior to February 24, 2023, then you would not be eligible to earn or receive the Bonus. Please note that in that event, there would be no interim earnings or prorated payment of the Bonus. Further, the Bonus will not be considered compensation for purposes of any Company compensation or benefit program and there will be no duplication between any payment provided for by this Agreement and any other incentive program that provides for a cash bonus for extraordinary performance.

Payment Timing. Once earned, the Bonus will be paid through Twilio's standard payroll process on the payroll date no more than two (2) pay periods following February 24, 2023. The Bonus is intended to be exempt from Section 409A of the Code under the "short-term deferral" exception, to the maximum extent applicable.

At-Will Status / Business Discretion of the Company. Neither this Agreement nor any of the provisions herein will be construed so as to grant you any right to remain in the employ of the Company and it is expressly understood and agreed that employment is terminable at the will of either you or the Company. Nothing in this Agreement is intended to limit the Company's discretion to take any action that the Company may consider appropriate.

Governing Law. This Agreement will be interpreted and enforced in accordance with the laws of the State of California without regard to its principles of conflict of laws.

Entire Agreement / Prior Agreements. You acknowledge and agree that this Agreement constitutes the entire understanding between us with respect to the Bonus and supersedes all prior agreements, including the bonus letter provided to you in December 2022, promises, covenants, arrangements, communications, representations or warranties, whether oral or written, by any officer, employee or representative of any party hereto.

This Agreement will not be modified except by written agreement duly executed by you and the Company.

[SIGNATURE PAGE FOLLOWS]

Exhibit 10.15

0001447669-23-000049imageb.jpg

AGREED AND ACCEPTED AS OF THE RESTATEMENT DATE:

/s/ Christy Lake /s/ Eyal Manor

Christy Lake, Chief People Officer Eyal Manor

February 2, 2023 February 2, 2023

DateDate

Exhibit 21.1

List of Significant Subsidiaries of Twilio Inc.

Subsidiary	Country
Ionic Security Inc.	United States
Zipwhip, LLC	United States
Twilio Australia Pty Ltd	Australia
Teravoz Telecom Telecomunicacoes Ltda.	Brazil
Twilio Canada Corp.	Canada
Zipwhip Canada, Inc.	Canada
Twilio Colombia S.A.S.	Colombia
Twilio Czechia	Czechia
Twilio Estonia OÜ	Estonia
Twilio France SARL	France
Twilio Berlin GmbH	Germany
Twilio Germany GmbH	Germany
Twilio Hong Kong Limited	Hong Kong
Twilio Technology India Private Limited	India
ValueFirst Digital Media Private Limited	India
Twilio Ireland Limited	Ireland
Twilio Japan GK	Japan
CISA Telecomunicaciones, S.C.	Mexico
Twilio Netherlands B.V.	The Netherlands
Twilio Poland sp. z o.o.	Poland
Quiubas Mobile Ltd.	Serbia
Twilio Singapore Pte. Ltd.	Singapore
Twilio Spain, S.L.	Spain
Twilio Sweden AB	Sweden
Twilio UK Limited	England and Wales

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (No. 333-212191, 333-224812, 333-229580, 333-236819, 333-250032, 333-258368, 333-266593 and 333-266593) 333-270025) on Form S-8 and (No. 333-231794, 333-249889 and 333-258364) on Form S-3 of Twilio Inc. of our report dated February 24, 2023 February 27, 2024, with respect to the consolidated financial statements of Twilio Inc. and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Santa Clara, San Francisco, California

February 24, 2023 27, 2024

Exhibit 31.1

CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF THE SECURITIES EXCHANGE ACT OF 1934, AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jeff Lawson, certify that:

1. I have reviewed this Annual Report on Form 10-K of Twilio Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2023

/s/ JEFF LAWSON

Jeff Lawson

Chief Executive Officer (Principal Executive Officer)

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF
THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Khozema Z. Shipchandler, certify that:

1. I have reviewed this Annual Report on Form 10-K of Twilio Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2023 February 27, 2024

/s/ KHOZEMA Z. SHIPCHANDLER

Khozema Z. Shipchandler

Chief Operating Executive Officer (Principal Executive Officer)

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF
THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Aidan Viggiano, certify that:

1. I have reviewed this Annual Report on Form 10-K of Twilio Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 27, 2024

/s/ AIDAN VIGGIANO

Aidan Viggiano

Chief Financial Officer (Principal Accounting and Financial Officer)

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), as adopted pursuant to §906 of the Sarbanes-Oxley Act of 2002, Jeff Lawson, Khozema Z. Shipchandler, Chief Executive Officer of Twilio Inc. (the "Company"), and Khozema Z. Shipchandler, Aidan Viggiano, Chief Operating Financial Officer of the Company, each hereby certifies that, to the best of his their knowledge:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2022 December 31, 2023, to which this Certification is attached as Exhibit 32.1 (the "Periodic Report"), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and

2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 24, 2023 February 27, 2024

/s/ JEFF LAWSON

Jeff Lawson

Chief Executive Officer (Principal Executive Officer)

/s/ KHOZEMA Z. SHIPCHANDLER

Khozema Z. Shipchandler

Chief Operating Executive Officer (Principal Executive Officer)

/s/ AIDAN VIGGIANO

Aidan Viggiano

Chief Financial Officer (Principal Accounting and Financial Officer)

TWILIO INC.

COMPENSATION RECOVERY POLICY

Approved November 30, 2023

Twilio Inc. (the “**Company**”) is committed to strong corporate governance. As part of this commitment, the Company's Board of Directors (the “**Board**”) has adopted this Compensation Recovery Policy (the “**Policy**”). The Policy is intended to further the Company's pay-for-performance philosophy and to comply with applicable law by providing rules relating to the reasonably prompt recovery of certain incentive-based compensation received by Covered Executives in the event of an Accounting Restatement.

The application of the Policy to Covered Executives is not discretionary, except to the limited extent provided below, and applies without regard to whether a Covered Executive was at fault. Capitalized terms used in the Policy are defined below.

The Policy is intended to comply with, and will be interpreted in a manner consistent with, Section 10D of the Securities Exchange Act of 1934 (the “**Exchange Act**”), with Exchange Act Rule 10D-1 and with the listing standards of the national securities exchange (the “**Exchange**”) on which the securities of the Company are listed, including any official interpretive guidance.

Persons Covered by the Policy

The Policy is binding and enforceable against all Covered Executives. A “**Covered Executive**” is (a) each individual who is (or was) designated as an “officer” by the Board in accordance with Exchange Act Rule 16a-1(f) (a “**Section 16 Officer**”) and (b) any other individual or position designated as a Covered Executive by the Committee from time to time as set forth on Exhibit A (a “**Designated Executive**”). See “Compensation Covered by the Policy” below for incentive compensation received by a Covered Executive that may be subject to recovery under the Policy. The Committee may (but will not be obligated to) request or require a Covered Executive to sign and return to the Company an acknowledgement that such Covered Executive will be bound by the terms and comply with the Policy. The Policy is binding on each Covered Executive whether or not the Covered Executive signs or returns any acknowledgment.

Administration of the Policy

The Compensation and Talent Management Committee of the Board (the “**Committee**”) has full delegated authority to administer the Policy. The Committee is authorized to interpret and construe the Policy and to make all determinations necessary, appropriate, or advisable for the administration of the Policy. In addition, if determined in the discretion of the Board, the independent members of the Board or another committee of the Board made up of independent members of the Board may administer the Policy, in which case all references to the Committee will be deemed to refer to the independent members of the Board or the other Board committee. All determinations of the Committee will be final and binding and given the maximum deference permitted by law.

Accounting Restatements Requiring Application of the Policy

If the Company is required to prepare an accounting restatement due to the material noncompliance of the Company with any financial reporting requirement under the securities laws, including any required accounting restatement to correct an error in previously issued financial statements that is material to the previously issued financial statements, or that would result in a material misstatement if the error were corrected in the current period or left uncorrected in the current period (an “**Accounting Restatement**”), then the Committee must determine the Excess Compensation, if any, that must be recovered. The Company's obligation to recover Excess Compensation is not dependent on if or when the restated financial statements are filed.

Compensation Covered by the Policy

The Policy applies to certain Incentive-Based Compensation that is Received on or after October 2, 2023 (the “**Effective Date**”), during the Covered Period while the Company has a class of securities listed on a national securities exchange. The Incentive-Based Compensation is considered “**Clawback Eligible**”

Incentive-Based Compensation” if the Incentive-Based Compensation is Received by a person after such person became a Section 16 Officer or a Designated Executive and the person served as a Section 16 Officer or a Designated Executive at any time during the performance period to which the Incentive-Based Compensation applies. **“Excess Compensation”** means the amount of Clawback Eligible Incentive-Based Compensation that exceeds the amount of Clawback Eligible Incentive-Based Compensation that otherwise would have been Received had such Clawback Eligible Incentive-Based Compensation been determined based on the restated amounts. Excess Compensation must be computed without regard to any taxes paid and is referred to in the listings standards as “erroneously awarded compensation.”

To determine the amount of Excess Compensation for Incentive-Based Compensation based on stock price or total shareholder return, where it is not subject to mathematical recalculation directly from the information in an Accounting Restatement, the amount must be based on a reasonable estimate of the effect of the Accounting Restatement on the stock price or total shareholder return upon which the Incentive-Based Compensation was Received and the Company must maintain documentation of the determination of that reasonable estimate and provide that documentation to the Exchange.

“Incentive-Based Compensation” means any compensation that is granted, earned, or vested based wholly or in part upon the attainment of a Financial Reporting Measure. For the avoidance of doubt, no compensation that is potentially subject to recovery under the Policy will be earned until the Company’s right to recover under the Policy has lapsed.

The following items of compensation are not Incentive-Based Compensation under the Policy: salaries, bonuses paid solely at the discretion of the Committee or Board that are not paid from a bonus pool that is determined by satisfying a Financial Reporting Measure, bonuses paid solely upon satisfying one or more subjective standards and/or completion of a specified employment period, non-equity incentive plan awards earned solely upon satisfying one or more strategic measures or operational measures, and equity awards for which the grant is not contingent upon achieving any Financial Reporting Measure performance goal and vesting is contingent solely upon completion of a specified employment period (e.g., time-based vesting equity awards) and/or attaining one or more non-Financial Reporting Measures.

“Financial Reporting Measures” are measures that are determined and presented in accordance with the accounting principles used in preparing the Company’s financial statements, and any measures that are derived wholly or in part from such measures. Stock price and total shareholder return are also Financial Reporting Measures. A Financial Reporting Measure need not be presented within the financial statements or included in a filing with the Securities and Exchange Commission.

Incentive-Based Compensation is **“Received”** under the Policy in the Company’s fiscal period during which the Financial Reporting Measure specified in the Incentive-Based Compensation award is attained, even if the payment, vesting, settlement or grant of the Incentive-Based Compensation occurs after the end of that period. For the avoidance of doubt, the Policy does not apply to Incentive-Based Compensation for which the Financial Reporting Measure is attained prior to the Effective Date.

“Covered Period” means the three completed fiscal years immediately preceding the Accounting Restatement Determination Date. In addition, Covered Period can include certain transition periods resulting from a change in the Company’s fiscal year.

“Accounting Restatement Determination Date” means the earliest to occur of: (a) the date the Board, a committee of the Board, or one or more of the officers of the Company authorized to take such action if Board action is not required, concludes, or reasonably should have concluded, that the Company is required to prepare an Accounting Restatement; and (b) the date a court, regulator, or other legally authorized body directs the Company to prepare an Accounting Restatement.

Repayment of Excess Compensation

The Company must recover Excess Compensation reasonably promptly and Covered Executives are required to repay Excess Compensation to the Company. Subject to applicable law, the Company may recover Excess Compensation by requiring the Covered Executive to repay such amount to the Company by direct payment to the Company or such other means or combination of means as the Committee determines to be appropriate (these determinations do not need to be identical as to each Covered Executive). These means include (but are not limited to one or more of the following):

- (a) requiring reimbursement of cash Incentive-Based Compensation previously paid;
- (b) seeking recovery of any gain realized on the vesting, exercise, settlement, sale, transfer, or other disposition of any equity-based awards (including, but not limited to, time-based vesting awards), without regard to whether such awards are Incentive-Based Compensation or vest based on the

achievement of performance goals;

- (c) offsetting the amount to be recovered from any unpaid or future compensation to be paid by the Company or any affiliate of the Company to the Covered Executive, including (but not limited to) payments of severance that might otherwise be due in connection with a Covered Executive's termination of employment and without regard to whether such amounts are Incentive-Based Compensation;
- (d) cancelling outstanding vested or unvested equity awards (including, but not limited to, time-based vesting awards), without regard to whether such awards are Incentive-Based Compensation; and
- (e) taking any other remedial and recovery action permitted by law, as determined by the Committee.

The repayment of Excess Compensation must be made by a Covered Executive notwithstanding any Covered Executive's belief (whether or not legitimate) that the Excess Compensation had been previously earned under applicable law and therefore is not subject to clawback.

In addition to its rights to recovery under the Policy, the Company or any affiliate of the Company may take any legal actions it determines appropriate to enforce a Covered Executive's obligations to the Company or to discipline a Covered Executive. Failure of a Covered Executive to comply with their obligations under the Policy may result in (without limitation) termination of that Covered Executive's employment, institution of civil proceedings, reporting of misconduct to appropriate governmental authorities, reduction of future compensation opportunities or change in role. The decision to take any actions described in the preceding sentence will not be subject to the approval of the Committee and can be made by the Board, any committee of the Board, or any duly authorized officer of the Company or of any applicable affiliate of the Company. For avoidance of doubt, any decisions of the Company or the Covered Executive's employer to discipline a Covered Executive or terminate the employment of a Covered Executive are independent of determinations under this Policy. For example, if a Covered Executive was involved in activities that led to an Accounting Restatement, the Company's decision as to whether or not to terminate such Covered Executive's employment would be made under its employment arrangements with such Covered Executive and the requirement to apply this no-fault and non-discretionary clawback policy will not be determinative of whether any such termination is for cause, although failure to comply with the Policy might be something that could result in a termination for cause depending on the terms of such arrangements.

Limited Exceptions to the Policy

The Company must recover Excess Compensation in accordance with the Policy except to the limited extent that any of the conditions set forth below is met, and the Committee determines that recovery of the Excess Compensation would be impracticable:

- (a) The direct expense paid to a third party to assist in enforcing the Policy would exceed the amount to be recovered. Before reaching this conclusion, the Company must make a reasonable attempt to recover the Excess Compensation, document the reasonable attempt(s) taken to so recover, and provide that documentation to the Exchange; or
-
- (b) Recovery would likely cause an otherwise tax-qualified retirement plan, under which benefits are broadly available to employees of the Company, to fail to meet the legal requirements as such.

Other Important Information in the Policy

The Policy is in addition to the requirements of Section 304 of the Sarbanes-Oxley Act of 2002 that are applicable to the Company's Chief Executive Officer and Chief Financial Officer, as well as any other applicable laws, regulatory requirements, or rules.

Notwithstanding the terms of any of the Company's organizational documents (including, but not limited to, the Company's bylaws), any corporate policy or any contract (including, but not limited to, any indemnification agreement), neither the Company nor any affiliate of the Company will indemnify or provide advancement for any Covered Executive against any loss of Excess Compensation. Neither the Company nor any affiliate of the Company will pay for or reimburse insurance premiums for an insurance policy that covers potential recovery obligations. In the event that pursuant to the Policy the Company is required to recover Excess Compensation from a Covered Executive who is no longer an employee, the Company will be entitled to seek recovery in order to comply with applicable law, regardless of the terms of any release of claims or separation agreement such individual may have signed.

The Committee or Board may review and modify the Policy from time to time.

If any provision of the Policy or the application of any such provision to any Covered Executive is adjudicated to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provisions of the Policy or the application of such provision to another Covered

Executive, and the invalid, illegal or unenforceable provisions will be deemed amended to the minimum extent necessary to render any such provision or application enforceable.

The Policy will terminate and no longer be enforceable when the Company ceases to be a listed issuer within the meaning of Section 10D of the Exchange Act.

DISCLAIMER

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