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

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# FORM 10-K

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

**For the fiscal year ended December 31, 2018**

**or**

o **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)

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| | |
|---|---|
| **Delaware**<br>(State or other jurisdiction of incorporation or organization) | **26-2574840**<br>(I.R.S. Employer Identification Number) |

**375 Beale Street, Suite 300**
**San Francisco, California 94105**
(Address of principal executive offices) (Zip Code)

**(415) 390-2337**
(Registrant's telephone number, including area code)

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

| Title of each class | (Name of each exchange on which registered) |
|---|---|
| Class A Common Stock, par value $0.001 per share | The New York Stock Exchange |

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

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act: Yes o 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 o

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 o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o

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

| | | | |
|---|---|---|---|
| Large accelerated filer ☒ | Accelerated filer o | Non-accelerated filer o | Smaller reporting company o<br>Emerging growth company o |

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. o

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

The aggregate market value of stock held by non-affiliates as of June 29, 2018 (the last business day of the registrant's most recently completed second quarter) was $4.4 billion based upon $56.02 per share, the closing price on June 29, 2018 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 1, 2019, the registrant had 104,277,870 shares of Class A common stock and 19,303,259 shares of Class B common stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the registrant's definitive Proxy Statement for the 2019 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, 2018.

**Twilio Inc.**
**Annual Report on Form 10-K**
**For the Fiscal Year Ended December 31, 2018**
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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," "will," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "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:

- our future financial performance, including our revenue, cost of revenue, gross margin and operating expenses, ability to generate positive cash flow and ability to achieve and sustain profitability;
- the impact and expected results from changes in our relationship with our larger customers;
- the sufficiency of our cash and cash equivalents to meet our liquidity needs;
- anticipated technology trends, such as the use of and demand for cloud communications;
- our ability to continue to build and maintain credibility with the global software developer community;
- our ability to attract and retain customers to use our products;
- our ability to attract and retain enterprises and international organizations as customers for our products;
- our ability to form and expand partnerships with technology partners and consulting partners;
- the evolution of technology affecting our products and markets;
- our ability to introduce new products and enhance existing products;
- our ability to optimize our network service provider coverage and connectivity;
- our ability to manage changes in network service provider fees that we pay in connection with the delivery of communications on our platform;
- our ability to pass on our savings associated with our platform optimization efforts to our customers;
- our ability to successfully enter into new markets and manage our international expansion;
- the attraction and retention of qualified employees and key personnel;
- our ability to effectively manage our growth and future expenses and maintain our corporate culture;
- our anticipated investments in sales and marketing and research and development;
- 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 convertible notes and repay such notes, to the extent required;

- our ability to comply with modified or new laws and regulations applying to our business, including the General Data Protection Regulation ("GDPR"), the California Consumer Privacy Act of 2018 and other privacy regulations that may be implemented in the future; and
- our ability to successfully integrate and realize the benefits of our past or future strategic acquisitions or investments, including our acquisition of SendGrid, Inc. ("SendGrid").

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, financial condition, results of operations and prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors described in Part I, 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

Software developers are reinventing nearly every aspect of business today. Yet as developers, we repeatedly encountered an area where we could not innovate—communications. Because communication is a fundamental human activity and vital to building great businesses, we wanted to incorporate communications into our software applications, but the barriers to innovation were too high. Twilio was started to solve this problem.

We believe the future of communications will be written in software, by the developers of the world—our customers. By empowering them, our mission is to fuel the future of communications.

Cloud platforms are a new category of software that enable developers to build and manage applications without the complexity of creating and maintaining the underlying infrastructure. These platforms have arisen to enable a fast pace of innovation across a range of categories, such as computing and storage. We are the leader in the Cloud Communications Platform category. We enable developers to build, scale and operate real-time communications within software applications.

Our platform consists of three layers: our Engagement Cloud, Programmable Communications Cloud and Super Network. Our Engagement Cloud software is designed to address specific use cases like account security and contact centers and is a set of Application Programming Interfaces ("APIs") that handles the higher-level communication logic needed for nearly every type of customer engagement. These APIs are focused on the business challenges that a developer is looking to address, allowing our customers to more quickly and easily build better ways to engage with their customers throughout their journey. Our Programmable Communications Cloud software is a set of APIs that enables developers to embed voice, messaging and video capabilities into their applications. The Programmable Communications Cloud is designed to support almost all the fundamental ways humans communicate, unlocking innovators to address just about any communication market. The Super Network is our software layer that allows our customers' software to communicate with connected devices globally. It interconnects with communications networks 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 API's giving our customers access to more foundational components of our platform, like phone numbers.

In February 2019, we completed our acquisition of SendGrid, the leading email API platform. Email is an important channel for businesses to communicate with their customers, and incorporating SendGrid's products into our platform will allow us to enable businesses to engage with their customers via email effectively and at scale. In addition, adding this important channel to our platform will allow us to more strategically address our customer's engagement strategy across voice, messaging, video, and now e-mail.

We had 64,286 Active Customer Accounts as of December 31, 2018, representing organizations big and small, old and young, across nearly every industry, with one thing in common: they are competing by using the power of software to build differentiation through communications. With our platform, our customers are disrupting existing industries and creating new ones. For example, our customers' software applications use our platform to notify a diner when a table is ready, provide enhanced application security through two-factor authentication, connect potential buyers to real estate agents, and power large, omni-channel contact centers. The range of applications that developers build with the Twilio platform has proven to be nearly limitless.

Our goal is for Twilio to be in the toolkit of every software developer in the world. Because big ideas often start small, we encourage developers to experiment and iterate on our platform. We love when developers explore what they can do with Twilio, because one day they may have a business problem that they will use our products to solve.

As our customers succeed, we share in their success through our usage-based revenue model. 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. We believe the most useful indicator of this increased activity from our existing customer accounts is our Dollar-Based Net Expansion Rate, which compares the revenue from a cohort of Active Customer Accounts, other than Variable Customer Accounts, in a quarter to the same quarter in the prior year. Dollar-Based Net Expansion Rate was 140% and 128% for the years ended December 31, 2018 and 2017, respectively. See Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics—Dollar-Based Net Expansion Rate."

**Our Platform Approach**

Twilio's mission is to fuel the future of communications. We enable developers to build, scale and operate real-time communications within software applications.

We believe every application can be enhanced through the power of communication. Over time, we believe that all of our communications that do not occur in person will be integrated into software applications. Our platform approach enables developers to build this future.

Using our software, developers are able to incorporate communications into applications that span a range of industries and functionalities. Our technology partner customers, which embed our products in the solutions they sell to other businesses, are also able to leverage our products to deliver their applications.

*Common Use Cases*

- **Anonymous Communications.** Enabling users to have a trusted means of communications where they prefer not to share private information like their telephone number. Examples include conversations between drivers and riders or texting after meeting through a dating website.

- **Alerts and Notifications.** Alerting a user that an event has occurred, such as when a table is ready, a flight is delayed or a package is shipped.

- **Contact Center.** Improving customer support of powering customer care teams with voice, messaging and video capabilities that integrate with other systems to add context, such as a caller's support ticket history of present location.

- **Call Tracking.** Using phone numbers to provide detailed analytics on phone calls to measure the effectiveness of marketing campaigns or lead generation activities in a manner similar to how web analytics track and measure online activity.

- **Mobile Marketing.** Integrating messaging with marketing automation technology, allowing organizations to deliver targeted and timely contextualized communications to consumers.

- **User Security.** Verifying user identity through two-factor authentication prior to log-in or validating transactions within an application's workflow. This adds an additional layer of security to any application.

- **Twilio For Good.** Partnering with nonprofit organizations through Twilio.org, to use the power of communications to help solve social challenges, such as an SMS hotline to fight human trafficking, an emergency volunteer dispatch system and appointment reminders for medical visits in developing nations.

**Our Platform**

***Engagement Cloud***

Part of our core strategy is to provide a broad set of lower level building blocks (i.e. the products in our Programmable Communications Cloud and Super Network) that can be used to build virtually any use case. By doing this, we allow developers' creativity to flourish across the widest set of use cases—some of which haven't even been invented yet. As we observe what use cases are most common, and the work flows our customers find most challenging, we create the products in our Engagement Cloud to bring these learnings to a broader audience. While developers can build a broad range of applications on our platform, certain use cases are more common. Our Engagement Cloud APIs build upon our Programmable Communications Cloud to offer more fully implemented functionality for a specific purpose, such as two-factor authentication or a contact center, thereby saving developers significant time in building their applications.

The higher level APIs we have created in this layer of our platform are focused on addressing a massive opportunity to recreate and modernize the field of customer engagement. The means by which most companies engage with their customers is archaic and disjointed, made more glaring by the pace of development in other areas of communication. Our products in the Engagement Cloud combine the flexibility provided by our platform model along with the learnings we've gained over the past ten years focused on driving success at tens of thousands of customers.

***Programmable Communications Cloud***

Our Programmable Communications Cloud provides a range of products that enables developers to embed voice, messaging and video capabilities into their applications. Our easy-to-use developer APIs provide a programmatic channel to access our software. Developers can utilize our intuitive programming language, TwiML, to specify application functions such as <Dial>, <Record> and <Play>, leveraging our software to manage the complexity of executing the specified functions.

Our Programmable Communications Cloud consists of software products that can be used individually or in combination to build rich contextual communications within applications. We do not aim to provide complete business solutions, rather our Programmable Communications Cloud offers flexible building blocks that enable our customers to build what they need. Our Programmable Communications Cloud includes:

- **Programmable Voice.** Our Programmable Voice software products allow developers to build solutions to make and receive phone calls globally, and to incorporate advanced voice functionality such as text-to-speech, conferencing, recording and transcription. Programmable Voice, through our advanced call control software, allows developers to build customized applications that address use cases such as contact centers, call tracking and analytics solutions and anonymized communications.

- **Programmable Messaging.** Our Programmable Messaging software products allow developers to build solutions to send and receive messages globally, through channels like SMS, MMS, short codes, WhatsApp, Facebook Messenger, and LINE, and incorporate advanced messaging functionality such as emoji, picture messaging and localized languages. Our customers use Programmable Messaging, through software controls, to power use cases, such as appointment reminders, delivery notifications, order confirmations and customer care.

- **Programmable Video.** Our Programmable Video software products enable developers to build next-generation mobile and web applications with embedded video, including for use cases such as customer care, collaboration and physician consultations.

***Super Network***

Our Programmable Communications Cloud is built on top of our global software layer, which we call our Super Network. Our Super Network interfaces intelligently with communications networks globally. We use software to construct a high performance network that continuously optimizes quality and deliverability for our customers. Our Super Network breaks down the geopolitical boundaries and scale limitations of physical network infrastructure and provides our customers that use our Programmable Communications Cloud and Engagement Cloud offering access to over 180 countries. The Super Network also contains a set of API's giving our customers access to more foundational components of our platform, such as phone numbers.

We have strategically built out our global infrastructure and operate in 27 cloud data centers in nine geographically distinct regions. These data centers serve as interconnection points with network service providers and customers alike, giving us a truly global reach and a redundant means to connect businesses with billions of customers all over the world. Our provider relationships and deployed infrastructure have allowed us to catalogue the many different communications standards that exist today and offer them up to businesses as one consolidated platform with simple, easy-to-use APIs. We are continually adding new network service provider relationships as we scale, and we are not dependent upon any single network service provider to conduct our business.

The strength of Twilio's Super Network comes from the software intelligence we've embedded throughout our communications network. By leveraging our software expertise we eliminate the traditional complexities and uncertainties of telecommunications and deliver a consistent and high quality communications platform for our customers. This allows customers to spend less time focusing on mastering the highly specialized and complex telecommunications industry and more time focusing on building best-in-class customer engagement experiences. Our proprietary technology selects which network service providers to use and routes the communications in order to optimize the quality and cost of the communications across our product offerings.

Our Super Network analyzes massive volumes of data from our traffic, the applications that power it, and the underlying provider networks in order to optimize our customers' communications for quality and cost. As such, with every new message and call, our Super Network becomes more robust, intelligent and efficient, enabling us to provide better performance and deliverability for our customers. Our Super Network's sophistication becomes increasingly difficult for others to replicate over time as it is continually learning, improving and scaling.

***Our Business Model for Innovators***

Our goal is to include Twilio in the toolkit of every developer in the world. Because big ideas often start small, developers need the freedom and tools to experiment and iterate on their ideas.

In order to empower developers to experiment, our developer-first business model is low friction, eliminating the upfront costs, time and complexity that typically hinder innovation. We call this approach our Business Model for Innovators, which empowers developers by reducing friction and upfront costs, encouraging experimentation, and enabling developers to grow as customers as their ideas succeed. Developers can begin building with a free trial. They have access to self-service documentation and free customer support to guide them through the process. Once developers determine that our software meets their needs, they can flexibly increase consumption and pay based on usage. In short, we acquire developers like consumers and enable them to spend like enterprises.

**Our Growth Strategy**

We are the leader in the Cloud Communications Platform category based on revenue, market share and reputation, and intend to continue to set the pace for innovation. We will continue to invest aggressively in our platform approach, which prioritizes increasing our reach and scale. We intend to pursue the following growth strategies:

- **Continue Significant Investment in our Technology Platform.** We will continue to invest in building new software capabilities and extending our platform to bring the power of contextual communications to a broader range of applications, geographies and customers. We have a substantial research and development team, comprising approximately 47% of our headcount as of December 31, 2018.

- **Grow Our Developer Community and Accelerate Adoption.** We will continue to enhance our relationships with developers globally and seek to increase the number of developers on our platform. As of December 31, 2018, we had 64,286 Active Customer Accounts and well over two million registered developer accounts registered on our platform. In addition to adding new developers, we believe there is significant opportunity for revenue growth from developers who have already registered accounts with us but who have not yet built their software applications with us, or whose applications are in their infancy and will grow with Twilio into an Active Customer Account.

- **Increase Our International Presence.** Our platform serves over 180 countries today, making it as simple to communicate from São Paulo as it is from San Francisco. Customers outside the United States are increasingly adopting our platform, and for the years ended December 31, 2018 and 2017, revenue from international customer accounts accounted for 25% and 23% of our total revenue, respectively. We are investing to meet the requirements of a broader range of global developers and enterprises. We plan to grow internationally by continuing to expand our operations outside of the United States and collaborating with international strategic partners.

- **Further Penetrate the Enterprises.** We plan to drive greater awareness and adoption of Twilio from enterprises across industries. We intend to further increase our investment in sales and marketing to meet evolving enterprise needs globally, in addition to extending our enterprise-focused use cases and platform capabilities, like our Twilio Enterprise Plan. Additionally, we believe there is significant opportunity to expand our relationships with existing enterprise customers.

- **Expand Our Partner Channel.** Our Twilio Build partner program is focused on growing our community of technology and consulting partners. Twilio Build's ecosystem of partners offers customers both packaged applications and consulting expertise that make it possible for any customer to innovate with Twilio regardless of region, industry, business model or development resources. To help our partners grow their businesses and innovate for their customers, this program provides go-to-market support, certification and training programs, and a partner success team. We have relationships with a number of technology partner customers that embed our products in the solutions that they sell to other businesses. We intend to expand our relationships with existing technology partner customers and to add new technology partner customers. We plan to invest in a range of initiatives to encourage increased collaboration with, and generation of revenue from, technology partner customers. We have started developing relationships with consulting partners who provide consulting and development services for organizations that have limited software development expertise to build our platform into their software applications. We intend to continue to invest in and develop the ecosystem for our solutions in partnership with consulting partners to accelerate awareness and adoption of our platform.

- **Selectively Pursue Acquisitions and Strategic Investments.** We may selectively pursue acquisitions and strategic investments in businesses and technologies that strengthen our platform. In February 2015, we acquired Authy, a leading provider of authentication-as-a-service for large-scale applications. With the integration of Authy, we now provide a cloud-based API to seamlessly embed two-factor authentication and phone verification into any application. In November 2016, we acquired the proprietary Web Real-Time-Communication ("WebRTC") media processing technologies built by the team behind the Kurento Open Source Project. The Kurento Media Server capabilities, including large group communications, transcoding, recording and advanced media processing, has been integrated into Twilio Programmable Video. In February 2017, we acquired Beepsend, AB, a messaging provider based in Sweden specializing in messaging and SMS solutions. In 2018, we acquired Ytica.com, a contact center analytics tool developer based in Czech Republic; Core Network Dynamics, a software mobile network infrastructure developer based in Germany; and certain assets of VAI Technologies, a language recognition platform. In February 2019, we acquired SendGrid, Inc., the leading e-mail API platform.

**The Twilio Magic**

We believe there's a unique spirit to Twilio, manifested in who we are and how we work together. These are the principles we use to build an impactful, high growth business while staying true to ourselves. Collectively, these principles guide how we act, how we make decisions, and how we win.

*How We Act*

**Be an Owner.** Owners know their business, embracing the good news and the bad. Owners sweat the details and "pick up the trash." Owners think long term, and spend money wisely.

**Empower Others.** We believe that unleashing human potential—both inside and outside our company—is the key to our success. Be humble and realize it's not just about us. Invest in each other.

**No Shenanigans.** Always act in an honest, direct and transparent way.

*How We Make Decisions*

**Wear the Customer's Shoes.** Spend the time to deeply understand customers, and solve problems from their perspective. Earn trust through every interaction.

**Write It Down.** Our business is complex, so take the time to express yourself in prose—for your sake, and for the folks with whom you're collaborating.

**Ruthlessly Prioritize.** Prioritization helps break down complex problems, and provides clarity in the face of uncertainty. Decisions are progress, so make decisions with available information and keep learning.

*How We Win*

**Be Bold.** We're driven by a hunger to build a meaningful and impactful company. Embrace crazy ideas and remember, every big idea starts small.

**Be Inclusive.** To achieve our goals, we need a diverse set of voices in the room. Build diverse teams, and seek out unique points of view.

**Draw the Owl.** There's no instruction book, it's ours to write. Figure it out, ship it, and iterate. Invent the future, but don't wing it.

**Don't Settle.** Expect the best from yourself and others, because there's no feeling greater than being proud of our work. Hire the best people for every role.

**Twilio.org**

We believe we can create greater social good through better communications. Through Twilio.org, which is a part of our company and not a separate legal entity, we donate and discount our products to nonprofits, who use our products to engage their audience, expand their reach and focus on making a meaningful change in the world. Twilio.org's mission is to fuel communications that give hope, power, and freedom with a 10-year goal to help one billion people every year. In 2015, we reserved 1% of our common stock to fund social impact at Twilio. Since then, Twilio.org has made several donations consistent with its philanthropic goals which were treated as charitable contributions in our consolidated statements of operations included elsewhere in this Annual Report on Form 10-K. As of December 31, 2018, the total remaining shares reserved for Twilio.org was 572,676.

**Our Products**

***Engagement Cloud***

While developers can build a broad range of applications on our platform, certain use cases are more common. Our Engagement Cloud APIs build upon our Programmable Communications Cloud to offer more fully implemented functionality for a specific purpose, such as two-factor authentication or a contact center, thereby saving developers significant time in building their applications.

***Flex***

Flex is a fully programmable cloud contact center platform designed to give businesses complete control of their contact center experience. With Flex, customers can quickly deploy an omnichannel contact center platform and also programmatically customize every element of the experience including the interface, communication channels, agent routing, and reporting to meet the unique needs of the business.

***Account Security***

Identity and communications are closely linked, and this is a critical business need for our customers. Using our two-factor authentication APIs, developers can add an extra layer of security to their applications with second-factor passwords sent to a user's phone via SMS, voice or push notifications. Our Account Security products include:

- **Authy.** Provides user authentication codes through a variety of formats based on the developer's needs. Authentication codes can be delivered through the Authy app on registered mobile phones, desktop, or smart devices or via SMS and voice automated phone calls. In addition, authentication can be determined through a push notification on registered smartphones

- **Lookup.** Allows developers to validate number format, device type, and provider prior to sending messages or initiating calls.

- **Verify.** Allows developers to deliver a one-time passcode through SMS or voice to verify that a user is in possession of the device being registered

We charge on a per-seat or per-use basis for our Engagement Cloud APIs.

***Programmable Communications Cloud***

Our Programmable Communications Cloud consists of software for voice, messaging, video and authentication that empowers developers to build applications that can communicate with connected devices globally. We do not aim to provide complete business solutions, rather our Programmable Communications Cloud offers flexible building blocks that enable our customers to build what they need.

***Programmable Voice***

Our Programmable Voice software products allow developers to build solutions to make and receive phone calls globally, and to incorporate advanced voice functionality such as text-to-speech, conferencing, recording and transcription. Programmable Voice, through our advanced call control software, allows developers to build customized applications that address use cases such as contact centers, call tracking and analytics solutions and anonymized communications. Our voice software works over both the traditional public switch telephone network and over Internet Protocol. Programmable Voice includes:

- **Twilio Voice.** Initiate, receive and manage phone calls globally, end to end through traditional voice technology or between web browsers and landlines or mobile phones. Voice calling can also be integrated natively in Apple iOS and Google Android apps.
- **Call Recording.** Securely record, store, transcribe and retrieve voice calls in the cloud.
- **Global Conference.** Integrate audio conferencing that intelligently routes calls through cloud data centers in the closest of nine geographic regions to reduce latency. Scales from Basic, for a limited number of participants, to Epic, for an unlimited number of participants.

We charge on a per-minute basis for most of our Programmable Voice products.

***Programmable Messaging***

Our Programmable Messaging software products allow developers to build solutions to send and receive messages globally, and incorporate advanced messaging functionality such as emoji, picture messaging and localized languages. Our customers use Programmable Messaging, through software controls, to power use cases, such as appointment reminders, delivery notifications, order confirmations and customer care. We offer messaging over long-code numbers, short-code numbers, messaging apps such as WhatsApp, Facebook Messenger and LINE, and over IP through our Android, iOS and JavaScript software development kits. Programmable Messaging includes:

- **Twilio SMS.** Programmatically send, receive and track SMS messages around the world, supporting localized languages in nearly every market.
- **Twilio MMS.** Exchange picture messages and more over U.S. and Canadian phone numbers from customer applications with built-in image transcoding and media storage.
- **Copilot.** Intelligent software layer that handles tasks, such as dynamically sending messages from a phone number that best matches the geographic location of the recipient based on a global pool of numbers.
- **Programmable Chat.** Deploy contextual, in-app messaging at global scale.
- **Channels.** Programmatically send, receive and track messages to messaging apps such as WhatsApp, Facebook Messenger and LINE globally.
- **Toll-Free SMS.** Send and receive text messages with the same toll-free number used for voice calls in the United States and Canada.

We charge on a per-message basis for most of our Programmable Messaging products.

***Programmable Video***

Programmable Video provides developers with the building blocks to add voice and video to web and mobile applications. Developers can address multiple use cases such as remote customer care, multi-party collaboration, video consultations and more by leveraging Programmable Video's global cloud infrastructure and powerful SDKs to build on WebRTC. Programmable Video includes:

- **Twilio Video.** Create rich, multi-party video experiences in web and mobile applications with features such as one-to-one and multi-party video calling, cloud based recordings, screen sharing etc.

- **Network Traversal.** Provide low-latency, cost-effective and reliable Session Traversal Utilities for Network Address Translation (STUN) and Traversal Using Relay for Network Address Translation (TURN) capabilities distributed across five continents. This functionality allows developers to initiate peer-to-peer video sessions across any internet-connected device globally.

We charge on a per-connected-endpoint, per-active-endpoint and per-gigabit basis for our Programmable Video products.

***Super Network***

Our Programmable Communications Cloud is built on top of our global software layer, which we call our Super Network. Our Super Network interfaces intelligently with communications networks globally. We do not own any physical network infrastructure. We use software to build a high performance network that optimizes performance for our customers. The Super Network also contains a set of API's giving our customers access to more foundational components of our platform, like phone numbers and Session Initiation Protocol ("SIP") Trunking.

- **Instant Phone Number Provisioning.** Acquire local, national, mobile and toll-free phone numbers on demand in over 100 countries and connect them into the customers' applications.

- **Short Codes.** A five to seven digit phone number in the United States, Canada and the United Kingdom used to send and receive a high-volume of messages per second.

- **Elastic SIP Trunking.** Connect legacy voice applications to our Super Network over IP infrastructure with globally-available phone numbers and pay-as-you-go pricing.

- **Interconnect.** Connect privately to Twilio to enable enterprise grade security and quality of service for Twilio Voice and Elastic SIP Trunking.

We charge on a per-minute or per-phone-number basis for most of our Super Network products.

**Our Employees**

As of December 31, 2018, we had a total of 1,440 employees, including 351 employees located outside of the United States. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We have not experienced any work stoppages, and we consider our relations with our employees to be good.

**Research and Development**

Our research and development efforts are focused on ensuring that our platform is resilient and available to our customers at any time, and on enhancing our existing products and developing new products.

Our research and development organization is 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, built and continue to expand our Engagement Cloud, Programmable Communications Cloud and Super Network.

As of December 31, 2018, we had 673 employees in our research and development organization. We intend to continue to invest in our research and development capabilities to extend our platform and bring the power of contextual communications to a broader range of applications, geographies and customers.

**Sales and Marketing**

Our sales and marketing teams work together closely to drive awareness and adoption of our platform, accelerate customer acquisition and generate revenue from customers.

Our go-to-market model is primarily focused on reaching and serving the needs of developers. We are a pioneer of developer evangelism and education and have cultivated a large global developer community. We reach developers through community events and conferences, including our SIGNAL developer conference, to demonstrate how every developer can create differentiated applications incorporating communications using our products.

Once developers are introduced to our platform, we provide them with a low-friction trial experience. By accessing our easy-to-configure APIs, extensive self-service documentation and customer support team, developers can build our products into their applications and then test such applications during an initial free trial period that we provide. Once they have decided to use our products beyond the initial free trial period, customers provide their credit card information and only pay for the actual usage of our products. Our self-serve pricing matrix is publicly available and it allows for customers to receive automatic tiered discounts as their usage of our products increases. As customers' use of our products grows larger, 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 customers through this self-service model. As customers expand their usage of our platform, our relationships with them often evolve to include business leaders within their organizations. Once our customers reach a certain spending level with us, we support them with account managers or customer success advocates to ensure their satisfaction and expand their usage of our products.

We also supplement our self-service model with a sales effort aimed at engaging larger potential customers, strategic leads and existing customers through a direct sales approach. To help increase our awareness in the enterprise, we have expanded our marketing efforts through programs like our Twilio Engage roadshow were we seek to bring business leaders and developers together to discuss the future of customer engagement. We have developed products to support this effort as well, like the Twilio Enterprise Plan, which provides capabilities for advanced security, access management and granular administration. Our sales organization targets technical leaders and business leaders who are seeking to leverage software to drive competitive differentiation. As we educate these leaders on the benefits of developing applications incorporating our products to differentiate their business, they often consult with their developers regarding implementation. We believe that developers are often advocates for our products as a result of our developer-focused approach. Our sales organization includes sales development, inside sales, field sales and sales engineering personnel.

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 sales force and marketing automation) or our consulting partners who provide consulting and development services for organizations that have limited software development expertise to build our platform into their software applications.

As of December 31, 2018, we had 549 employees in our sales and marketing organization.

**Customer Support**

We have designed our products and platform to be self-service and require minimal customer support. To enable seamless self-service, we provide all of our users with helper libraries, comprehensive documentation, how-to's and tutorials. We supplement and enhance these tools with the participation of our engaged developer community. In addition, we provide support options to address the individualized needs of our customers. All developers get free email-based support with API status notifications. Our developers also engage with the broader Twilio community to resolve certain issues.

We also offer three paid tiers of email and phone support with increasing levels of availability and guaranteed response times. Our highest tier personalized plan is intended for our largest customers and includes guaranteed response times that vary based on the priority of the request, a dedicated support engineer, a duty manager and quarterly status review. Our support model is global, with 24x7 coverage and support offices located in the United States, the United Kingdom, Estonia and Singapore. We currently derive an insignificant amount of revenue from fees charged for customer support.

**Competition**

The market for Cloud Communications Platform is rapidly evolving and increasingly competitive. We believe that the principal competitive factors in our market are:

- completeness of offering;
- credibility with developers;
- global reach;
- ease of integration and programmability;
- product features;
- platform scalability, reliability, 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. We believe that none of our competitors currently competes directly with us across all of our product offerings.

Our competitors fall into four primary categories:

- legacy on-premise vendors, such as Avaya and Cisco;
- regional network service providers that offer limited developer functionality on top of their own physical infrastructure;
- smaller software companies that compete with portions of our product line; and
- software-as-a-service "SaaS" companies and cloud platform vendors that offer prepackaged applications and platforms.

Some of our competitors have greater financial, technical and other resources, greater name recognition, larger sales and marketing budgets and larger intellectual property portfolios. As a result, certain of our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In addition, some competitors may offer products or services that address one or a limited number of functions at lower prices, with greater depth than our products or geographies where we do not operate. 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.

**Intellectual Property**

We rely on a combination of patent, copyright, trademark and trade secret laws in the United States and other jurisdictions, as well as license agreements and other contractual protections, to protect our proprietary technology. We also rely on a number of registered and unregistered trademarks to protect our brand.

As of December 31, 2018, in the United States, we had been issued 104 patents, which expire between 2029 and 2037. As of such date, we also had 13 issued patents in foreign jurisdictions, all of which are related to U.S. patents and patent applications. We have also filed various applications for protection of certain aspects of our intellectual property in the United States and internationally. In addition, as of December 31, 2018, we had 15 trademarks registered in the United States and 94 trademarks registered in foreign jurisdictions.

We further seek to protect our intellectual property rights by implementing a policy that requires our employees and independent contractors involved in development of intellectual property on our behalf to enter into agreements acknowledging that all works or other intellectual property generated or conceived by them on our behalf are our property, and assigning to us any rights, including intellectual property rights, that they may claim or otherwise have in those works or property, to the extent allowable under applicable law.

Despite our efforts to protect our technology and proprietary rights through intellectual property rights, licenses and other contractual protections, unauthorized parties may still copy or otherwise obtain and use our software and other technology. In addition, we intend to continue to expand our international operations, and effective intellectual property, copyright, trademark and trade secret protection may not be available or may be limited in foreign countries. Any significant impairment of our intellectual property rights could harm our business or our ability to compete. Further, companies in the communications and technology industries may own large numbers of patents, copyrights and trademarks and may frequently threaten litigation, or file suit against us based on allegations of infringement or other violations of intellectual property rights. We currently are subject to, and expect to face in the future, allegations that we have infringed the intellectual property rights of third parties, including our competitors and non-practicing entities.

**Regulatory**

We are subject to a number of U.S. federal and state and foreign laws and regulations that involve matters central to our business. These laws and regulations may involve privacy, data protection, intellectual property, competition, consumer protection, export taxation or other subjects. Many of the laws and regulations to which we are subject are still evolving and being tested in courts and could be interpreted in ways that could harm our business. In addition, 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 global laws and regulations have continued to develop and evolve rapidly, it is possible that we or our products or our platform may not be, or may not have been, compliant with each such applicable law or regulation.

For example, GDPR, which took full effect on May 25, 2018, enhanced data protection obligations for businesses and requires service providers (data processors) processing personal data on behalf of customers to cooperate with European data protection authorities, implement security measures and keep records of personal data processing activities. Noncompliance with the GDPR can trigger fines equal to the greater of € 20 million or 4% of global annual revenue. Given the breadth and depth of changes in data protection obligations, meeting the requirements of GDPR has required significant time and resources, including a review of our technology and systems currently in use against the requirements of GDPR. We have taken steps to prepare for complying with GDPR, including integrating GDPR-compliant privacy protections into our products and platform, commercial agreements and record-keeping practices to help us and our customers meet the compliance obligations of GDPR. However, additional EU laws and regulations (and member states' implementations thereof) further govern the protection of consumers and of electronic communications. If our efforts to comply with GDPR or other applicable EU laws and regulations are not successful, we may be subject to penalties and fines that would adversely impact our business and results of operations, and our ability to conduct business in the EU could be significantly impaired.

In addition, the Telephone Consumer Protection Act of 1991 ("TCPA"), restricts telemarketing and the use of automatic text messages without proper 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 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.

**Corporate Information**

Twilio Inc. was incorporated in Delaware in March 2008. Our principal executive offices are located at 375 Beale Street, Third 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 property of Twilio. Trade names, trademarks and service marks of other companies appearing in this Annual Report on Form 10-K are the property of their respective holders

**Information about Geographic Revenue**

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

**Available Information**

The following filings are available through our investor relations website after we file them with the Securities and Exchange Commission ("SEC"): Annual Report on Form 10-K, Quarterly Reports on Form 10-Q and our Proxy Statement for our annual meeting of stockholders. These filings are also available for download free of charge on our investor relations website. Our investor relations website is located at http://investors.twilio.com. The SEC also maintains an Internet website that contains 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 "Corporate 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*

*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 Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. The risks and uncertainties described below may not be the only ones we face. If any of the risks actually occur, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the market price of our Class A common stock could decline.*

### Risks Related to Our Business and Our Industry

***The market for our products and platform is new and unproven, may decline or experience limited growth and is dependent in part on developers continuing to adopt our platform and use our products.***

We were founded in 2008, and we have been developing and providing a cloud-based platform that enables developers and organizations to integrate voice, messaging and video communications capabilities into their software applications. This market is relatively new and unproven and is subject to a number of risks and uncertainties. We believe that our revenue currently constitutes a significant portion of the total revenue in this market, and therefore, we believe that our future success will depend in large part on the growth, if any, of this market. The utilization of APIs by developers and organizations to build communications functionality into their applications is still relatively new, and developers and organizations may not recognize the need for, or benefits of, our products and platform. Moreover, if they 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 about the benefits of our products and platform, expanding the functionality of our products and bringing new technologies to market to increase market acceptance and use of our platform. Our ability to expand the market that our products and platform address depends upon a number of factors, including the cost, performance and perceived value associated with such products and platform. The market for our products and platform could fail to grow significantly or there could be a reduction in demand for our products as a result of a lack of developer acceptance, technological challenges, competing products and services, decreases in spending by current and prospective customers, weakening economic conditions and other causes. If our market does not experience significant growth or demand for our products decreases, then our business, results of operations and financial condition could be adversely affected.

***We have a history of losses and we are uncertain about our future profitability.***

We have incurred net losses in each year since our inception, including net losses of $121.9 million, $63.7 million and $41.3 million in 2018, 2017 and 2016, respectively. We had an accumulated deficit of $371.7 million as of December 31, 2018. We expect to continue to expend substantial financial and other resources on, among other things:

- investments in our engineering team, 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 and for organizations outside of the United States, and expanding our programs directed at increasing our brand awareness among current and new developers;
- expansion of our operations and infrastructure, both domestically and internationally; and
- general administration, including legal, accounting and other expenses related to being a public company.

These investments may not result in increased revenue or growth of our business. We also expect that our revenue growth rate will decline over time. Accordingly, we may not be able to generate sufficient revenue to offset our expected cost increases and achieve and sustain profitability. If we fail to achieve and sustain profitability, then our business, results of operations and financial condition would be adversely affected.

***We have experienced rapid growth and expect our growth to continue, and if we fail to effectively manage our growth, then our business, results of operations and financial condition could be adversely affected.***

We have experienced substantial growth in our business since inception. For example, our headcount has grown from 996 employees on December 31, 2017 to 1,440 employees on December 31, 2018. In addition, we are rapidly expanding our international operations. Our international headcount grew from 215 employees as of December 31, 2017 to 351 employees as of December 31, 2018. We expect to continue to expand our international operations 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. This growth has placed and may continue to place significant demands on our corporate culture, operational infrastructure and management.

We believe that our corporate culture has been a critical component of our success. We have invested substantial time and resources in building our team and nurturing our culture. As we expand our business and mature as a public company, we may find it difficult to maintain our corporate culture while managing this growth. Any failure to manage our anticipated growth and organizational changes in a manner that preserves the key aspects of our culture could hurt our chance for future success, including our ability to recruit and retain personnel, and effectively focus on and pursue our corporate objectives. This, in turn, could adversely affect our business, results of operations and financial condition.

In addition, in order to successfully manage our rapid growth, our organizational structure has become more complex. In order to manage these increasing complexities, we will need to continue to scale and adapt our operational, financial and management controls, as well as our reporting systems and procedures. The expansion of our systems and infrastructure will require us to commit substantial financial, operational and management resources before our revenue increases and without any assurances that our revenue will increase.

Finally, continued growth could strain our ability to maintain reliable service levels for our customers. If we fail to achieve the necessary level of efficiency in our organization as we grow, then our business, results of operations and financial condition could be adversely affected.

***Our quarterly results may fluctuate, and if we fail to meet securities analysts' and investors' expectations, then the trading price of our Class A common stock and the value of your investment could decline substantially.***

Our results of operations, including the levels of our revenue, cost of revenue, gross margin and operating expenses, have fluctuated from quarter to quarter in the past and may continue to vary significantly in the future. These fluctuations are a result of a variety of factors, many of which are outside of our control, may be difficult to predict and may or may not fully reflect the underlying performance of our business. If our quarterly results of operations fall below the expectations of investors or securities analysts, then the trading price of our Class A common stock could decline substantially. Some of the important factors that may cause our results of operations to fluctuate from quarter to quarter include:

- our ability to retain and increase revenue from existing customers and attract new customers;
- fluctuations in the amount of revenue from our Variable Customer Accounts and our larger Base Customer Accounts;
- our ability to attract and retain enterprises and international organizations as customers;
- our ability to introduce new products and enhance existing products;
- competition and the actions of our competitors, including pricing changes and the introduction of new products, services and geographies;
- the number of new employees;
- changes in network service provider fees that we pay in connection with the delivery of communications on our platform;
- changes in cloud infrastructure fees that we pay in connection with the operation of our platform;
- changes in our pricing as a result of our optimization efforts or otherwise;
- reductions in pricing as a result of negotiations with our larger customers;
- the rate of expansion and productivity of our sales force, including our enterprise sales force, which has been a focus of our recent expansion efforts;
- change in the mix of products that our customers use;
- change in the revenue mix of U.S. and international products;
- changes in laws, regulations or regulatory enforcement, in the United States or internationally, that impact our ability to market, sell or deliver our products;
- the amount and timing of operating costs and capital expenditures related to the operations and expansion of our business, including investments in our international expansion;
- significant security breaches of, technical difficulties with, or interruptions to, the delivery and use of our products on our platform;
- the timing of customer payments and any difficulty in collecting accounts receivable from customers;
- general economic conditions that may adversely affect a prospective customer's ability or willingness to adopt our products, delay a prospective customer's adoption decision, reduce the revenue that we generate from the use of our products or affect customer retention;
- changes in foreign currency exchange rates;
- extraordinary expenses such as litigation or other dispute-related settlement payments;
- sales tax and other tax determinations by authorities in the jurisdictions in which we conduct business;
- the impact of new accounting pronouncements;
- expenses in connection with mergers, acquisitions or other strategic transactions; and
- fluctuations in stock-based compensation expense.

The occurrence of one or more of the foregoing and other factors may cause our results of operations to vary significantly. As such, we believe that quarter-to-quarter comparisons of our results of operations 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 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.

Additionally, certain large scale events, such as major elections and sporting events, can significantly impact usage levels on our platform, which could cause fluctuations in our results of operations. We expect that significantly increased usage of all communications platforms, including ours, during certain seasonal and one-time events could impact delivery and quality of our products during those events. We also tend to experience increased expenses in connection with the hosting of SIGNAL, our developer conference, which we hosted in the fourth quarter of 2018 and plan to host annually. Such annual and one-time events may cause fluctuations in our results of operations and may impact both our revenue and operating expenses.

***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, is critical to achieving widespread acceptance of our platform, to strengthen 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, our ability to be thought leaders in the cloud communications market 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.

From time to time, our customers have complained about our products, such as complaints about our pricing and customer support. If we do not handle customer complaints effectively, then our brand and reputation may suffer, our customers may lose confidence in us and they may reduce or cease their use of our products. In addition, many of our customers post and discuss on social media about Internet-based products and services, including our products and platform. Our success depends, in part, on our ability to generate positive customer feedback and minimize negative feedback on social media channels where existing and potential customers seek and share information. If actions we take or changes we make to our products or platform upset these customers, then their online commentary could negatively affect our brand and reputation. Complaints or negative publicity about us, our products or our platform could materially and adversely impact our ability to attract and retain customers, our business, results of operations and financial condition.

The promotion of our brand also requires us to make substantial expenditures, and we anticipate that these expenditures will increase as our market becomes 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. If we do not successfully maintain and enhance our brand, then our business may not grow, we may see our pricing power reduced relative to competitors and we may lose customers, all of which would adversely affect our business, results of operations and financial condition.

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

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. If our customers do not increase their use of our products, then our revenue may decline and our results of operations may be harmed. Customers are charged based on the usage of our products. Most of our 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. Customers may terminate or reduce their use of our products for any number of reasons, including if they are not satisfied with our products, the value proposition of our products or our ability to meet their needs and expectations. We cannot accurately predict customers' usage levels and 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 and may cause our Dollar-Based Net Expansion Rate to decline in the future if customers are not satisfied with our products, the value proposition of our products or our ability to meet their needs and expectations. If a significant number of customers cease using, or reduce their usage of our products, then we may be required to spend significantly more on sales and marketing than we currently plan to spend 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, then our business, results of operations and financial condition would be adversely affected.***

In order to grow our business, we must continue to attract new customers 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, as well as search engine marketing and optimization. We periodically adjust the mix of our other marketing programs such as regional customer events, email campaigns, billboard advertising and public relations initiatives. If the costs of the marketing channels we use increase dramatically, then we may choose to use alternative and less expensive channels, which may not be as effective as the channels we currently use. As we add to or change the mix of our marketing strategies, we may need to expand into more expensive channels than those we are currently in, which could adversely affect our business, results of operations and financial condition. We will incur marketing expenses before we are able to recognize any revenue that the marketing initiatives may generate, and these expenses may not result in increased revenue or brand awareness. We have made in the past, and may make in the future, significant expenditures and investments in new marketing campaigns, and we cannot guarantee that any such investments will lead to the cost-effective acquisition of additional customers. If we are unable to maintain effective marketing programs, then our ability to attract new customers could be materially and adversely affected, our advertising and marketing expenses could increase substantially and our results of operations may suffer.

***If we do not develop enhancements to our products and introduce new products that achieve market acceptance, our business, results of operations and financial condition could be adversely affected.***

Our ability to attract new customers and increase revenue from existing customers depends in part on our ability to enhance and improve our existing products, increase adoption and usage of our products and introduce new products. 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 may not be introduced in a timely or cost-effective manner, may contain errors or defects, may have interoperability difficulties with our platform or other products or may not achieve the broad market acceptance necessary to generate significant revenue. 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. We also have invested, and may continue to invest, in the acquisition of complementary businesses, technologies, services, products and other assets that expand the products that we can offer our customers. We may make these investments without being certain that they will result in products or enhancements that will be accepted by existing or prospective customers. 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. If we are unable to successfully enhance our existing products to meet evolving customer requirements, increase adoption and usage of our products, develop new products, 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.

***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, we have relied on the adoption of our products by software developers through our self-service model for a significant majority of our revenue, and we currently generate only a small portion of our revenue from enterprise customers. 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 and marketing personnel. We have limited experience selling to enterprises and only recently established an enterprise-focused sales force.

Our ability to convince enterprises to adopt our products will depend, in part, on our ability to attract and retain sales personnel 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. Our ability to achieve significant revenue growth in the future will depend, in part, on our ability to recruit, train and retain a sufficient number of experienced sales professionals, particularly those with experience selling to enterprises. In addition, even if we are successful in hiring qualified sales personnel, 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 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 personnel to become productive.

As we seek to increase the adoption of our products by enterprises, including products like 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 security, compliance, procurement, operations and 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, engage in protracted pricing negotiations and seek to secure readily available development resources. 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. In addition, these complex and resource intensive sales efforts could place additional strain on our product and engineering resources. Further, enterprises, including some of our customers, may choose to develop their own solutions that do not include our products. They also may demand reductions in pricing as their usage of our products increases, which could have an adverse impact on our gross margin. 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.

***If we are unable to expand our relationships with existing technology partner customers and add new technology partner customers, our business, results of operations and financial condition could be adversely affected.***

We believe that the continued growth of our business depends in part upon developing and expanding strategic relationships with technology partner customers. Technology partner customers embed our software products in their solutions, such as software applications for contact centers and sales force and marketing automation, and then sell such solutions to other businesses. 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 sales force and marketing automation) or our consulting partners who provide consulting and development services for organizations that have limited software development expertise to build our platform into their software applications.

As part of our growth strategy, we intend to expand our relationships with existing technology partner customers and add new technology partner customers. If we fail to expand our relationships with existing technology partner customers or establish relationships with new technology partner customers in a timely and cost-effective manner, or at all, then our business, results of operations and financial condition could be adversely affected. Additionally, even if we are successful at building these relationships but there are problems or issues with integrating our products into the solutions of these customers, our reputation and ability to grow our business may be harmed.

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

We outsource substantially all of our cloud infrastructure to Amazon Web Services ("AWS"), which hosts our products and platform. Our customers need to be able to access our platform at any time, without 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 in the future we may experience interruptions, delays and outages in service and availability due to a variety of factors, including infrastructure changes, human or software errors, website hosting disruptions and capacity constraints. Capacity constraints could be due to a number of potential causes, including technical failures, natural disasters, fraud or security attacks. For instance, in September 2015, AWS suffered a significant outage that had a widespread impact on the ability of our customers to use several of our products. In addition, if our security, or that of AWS, is compromised, or our products or platform are unavailable or our users are unable to use our products within a reasonable amount of time or at all, then our business, results of operations and financial condition could be adversely affected. In some instances, we may 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, 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, our business, results of operations and financial condition may be adversely affected. In addition, any changes in service levels from AWS may adversely affect our ability to meet our customers' requirements.

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. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. AWS may terminate the agreement by providing 30 days prior written notice, and it may in some cases terminate the agreement immediately for cause upon notice. Although we expect that we could receive similar services from other third parties, if any of our arrangements with AWS are terminated, we could experience interruptions on our platform and in our ability to make our products available to customers, as well as delays and additional expenses in arranging alternative cloud infrastructure services.

Any of the above circumstances or events may harm our reputation, cause customers to stop using our products, 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.

***To deliver our products, we rely on network service providers for our network service.***

We currently interconnect with network service providers around the world to enable the use by our customers of our products over their networks. We expect that we will continue to rely heavily on network service providers for these services going forward. 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, while we do not typically change our customers' pricing as rapidly.

At times, network service providers have instituted additional fees due to regulatory, competitive or other industry related changes that increase our network costs. For example, starting in 2019, we are expecting one of the major U.S. cellular carriers to introduce a new service offering for A2P, or Application to Person, SMS messages that will add a new fee for A2P SMS messages delivered to its subscribers. 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 to customers, there is no guarantee that we will continue to be able to do so in the future without a material negative impact to our business. In the case of this new A2P SMS fee anticipated in 2019, we plan to pass these fees on to our customers who are sending SMS messages to this carrier's subscribers. This is expected to increase our revenue and cost of goods sold, but is not expected to impact the gross profit dollars received for sending these messages. However, mathematically this would still have 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 terminate their agreements with us without notice or restriction. 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 or poor quality communications with our products, and we could encounter difficulty identifying the source of the problem. The occurrence of errors 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.

***Our future success depends in part on our ability to drive the adoption of our products by international customers.***

In 2018, 2017 and 2016, we derived 25%, 23% and 16% of our revenue, respectively, from customer accounts located outside the United States. The future success of our business will depend, in part, on our ability to expand our customer base worldwide. While we have been rapidly expanding our sales efforts internationally, our experience in selling our products outside of the United States is limited. Furthermore, our developer-first business model may not be successful or have the same traction outside the United States. As a result, our investment in marketing our products to these potential customers may not be successful. If we are unable to increase the revenue that we derive from international customers, then our business, results of operations and financial condition may be adversely affected.

***We are in the process of expanding our international operations, which exposes us to significant risks.***

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. Between December 31, 2017 and December 31, 2018, our international headcount grew from 215 employees to 351 employees. We expect to open additional foreign offices and hire employees to work at these offices in order to reach new customers and gain access to additional technical talent. Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks in addition to those we already face in the United States. Because of our limited experience with international operations or with developing and managing sales in international markets, our international expansion efforts may not be successful.

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

- exposure to political developments in the United Kingdom ("U.K."), including the planned departure of the U.K. from the European Union (EU) in March 2019, which has created an uncertain political and economic environment, instability for businesses and volatility in global financial markets;
- the difficulty of managing and staffing international operations and the increased operations, travel, infrastructure and legal compliance costs associated with numerous international locations;
- our ability to effectively price our products in competitive international markets;
- new and different sources of competition;
- our ability to comply with GDPR, which went into effect on May 25, 2018, and the California Consumer Privacy Act, which will be effective as of January 1, 2020;
- 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 for specific countries;
- the need to offer customer support in various languages;
- difficulties in understanding and complying with local laws, regulations and customs in foreign jurisdictions;
- difficulties with differing technical and environmental standards, data privacy and telecommunications regulations and certification requirements outside the United States, which could prevent customers from deploying our products or limit their usage;

- export controls and economic sanctions administered by the Department of Commerce Bureau of Industry and Security and the Treasury Department's Office of Foreign Assets Control;
- compliance with various anti-bribery and anti-corruption laws such as the Foreign Corrupt Practices Act and United Kingdom Bribery Act of 2010;
- 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; and
- political or social unrest or economic instability in a specific country or region in which we operate, which could have an adverse impact on our operations in that location.

Also, due to costs from our international expansion efforts and network service provider fees outside of the United States, which generally are higher than domestic rates, our gross margin for international customers is typically lower than our gross margin for domestic customers. As a result, our gross margin may be impacted and fluctuate as we expand our operations and customer base worldwide.

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 2018, 2017 and 2016, our 10 largest Active Customer Accounts, which consisted of both Base and Variable Customers, generated an aggregate of 18%, 19% and 30% of our revenue, respectively. A significant portion of our revenue comes from a Variable Customer, WhatsApp.

In 2018, 2017 and 2016, WhatsApp accounted for 7%, 6% and 9% of our revenue, respectively. WhatsApp uses our Programmable Voice products and Programmable Messaging products in its applications to verify new and existing users on its service. Our Variable Customer Accounts, including WhatsApp, do not have long-term contracts with us and may reduce or fully terminate their usage of our products at any time without notice, penalty or termination charges. In addition, the usage of our products by WhatsApp and other Variable Customer Accounts may change significantly between periods.

In the event that any of our large Base or Variable 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.

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

The market for cloud communications is 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 developers, global reach, ease of integration and programmability, product features, platform scalability, reliability, security and performance, brand awareness and reputation, the strength of sales and marketing efforts, customer support, as well as the cost of deploying and using our products. Our competitors fall into four primary categories:

- legacy on-premise vendors, such as Avaya and Cisco;
- regional network service providers that offer limited developer functionality on top of their own physical infrastructure;
- smaller software companies that compete with portions of our product line; and
- software-as-a-service ("SaaS") companies and cloud platform vendors that offer prepackaged applications and platforms.

Some of our competitors and potential competitors are larger and have greater name recognition, longer operating histories, more established customer relationships, larger budgets and significantly greater resources than we do. In addition, they have the operating flexibility to bundle competing products and services at little or no perceived incremental cost, including offering them at a lower price as part of a larger sales transaction. As a result, our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In addition, some competitors may 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. Customers utilize our products in many ways and use varying levels of functionality that our products offer or are capable of supporting or enabling within their applications. Customers that use many of the features of our products or use our products to support or enable core functionality for their applications may have difficulty or find it impractical to replace our products with a competitor's products or services, while customers that use only limited functionality may be able to more easily replace our products with competitive offerings. Our customers also may choose to build some of the functionality our products provide, which may limit or eliminate their demand for our products.

With the introduction of new products and services and new market entrants, we expect competition to intensify in the future. In addition, some of our customers may choose to use our products and our competitors' products at the same time. Further, customers and consumers may choose to adopt other forms of electronic communications or alternative communication platforms.

Moreover, as we expand the scope of our products, we may face additional competition. If one or more of our competitors were to merge or partner with another of our competitors, the change in the competitive landscape could also adversely affect our ability to compete effectively. 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. If we are unable to maintain our current pricing due to competitive pressures, our margins will be reduced and our business, results of operations and financial condition would be adversely affected. In addition, 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.

***We have a limited operating history, which makes it difficult to evaluate our current business and future prospects and increases the risk of your investment.***

We were founded and launched our first product in 2008. As a result of our limited operating history, our ability to forecast our future results of operations is limited and subject to a number of uncertainties, including our ability to plan for future growth. Our historical revenue growth should not be considered indicative of our future performance. We have encountered and will encounter risks and uncertainties frequently experienced by growing companies in rapidly changing industries, such as:

- market acceptance of our products and platform;
- adding new customers, particularly enterprises;
- retention of customers;
- the successful expansion of our business, particularly in markets outside of the United States;
- competition;
- our ability to control costs, particularly our operating expenses;
- network outages or security breaches and any associated expenses;
- foreign currency exchange rate fluctuations;
- executing acquisitions and integrating the acquired businesses, technologies, services, products and other assets; and
- general economic and political conditions.

If we do not address these risks successfully, our business, results of operations and financial condition could be adversely affected.

***We have limited experience with respect to determining the optimal prices for our products.***

We charge our customers based on their use of our products. We expect that we may need to change our pricing from time to time. In the past we have sometimes reduced our prices either for individual customers in connection with long-term agreements or for a particular product. One of the challenges to our pricing is that the fees that we pay to network service providers over whose networks we transmit communications can vary daily or weekly and are affected by volume and other factors that may be outside of our control and 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.

Further, 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 we expand internationally, we also must determine the appropriate price to enable us to compete effectively internationally. Moreover, enterprises, which are a primary focus for our direct sales efforts, 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 required or choose to reduce our prices or change our pricing model, which could adversely affect our business, results of operations and financial condition.

***We typically provide monthly uptime service level commitments of up to 99.95% under our agreements with customers. If we fail to meet these contractual commitments, then our business, results of operations and financial condition could be adversely affected.***

Our agreements with customers typically provide for service level commitments. If we suffer extended periods of downtime for our products or platform and we are unable to meet these commitments, then we are contractually obligated to provide a service credit, which is typically 10% of the customer's amounts due for the month in question. In addition, the performance and availability of AWS, which provides our cloud infrastructures is outside of our control and, therefore, we are not in full control of whether we meet our service level commitments. As a result, our business, results of operations and financial condition could be adversely affected if we suffer unscheduled downtime that exceeds the service level commitments we have made to our customers. Any extended service outages could adversely affect our business and reputation.

***Breaches of our networks or systems, or those of 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 data losses 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. Individuals or entities may attempt to penetrate our network security, or that of our platform, 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. Because the techniques used by such individuals or entities to access, disrupt or sabotage devices, systems and networks change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques, and we may not become aware in a timely manner of such a security breach, 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 the loss of data. Any data security incidents, including internal malfeasance by our employees, unauthorized access or usage, virus or similar breach or disruption of us or our service providers, such as AWS or service providers, could result in loss of confidential information, damage to our reputation, loss of customers, litigation, regulatory investigations, fines, penalties and other liabilities. 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), compromise or the mishandling of data by our employees and contractors, then our reputation, business, results of operations and financial condition could be adversely affected.

***Defects or errors in our products could diminish demand for our products, harm our business and results of operations and subject us to liability.***

Our customers use our products for important aspects of their businesses, and any errors, defects or disruptions to our products and any other performance problems with our products could damage our customers' businesses and, in turn, hurt our brand and reputation. We provide regular updates to our products, which have in the past contained, and may in the future contain, undetected errors, failures, vulnerabilities and bugs when first introduced or released. Real or perceived errors, failures or bugs in our products could result in negative publicity, loss of or delay in market acceptance of our platform, loss of competitive position, lower customer retention or claims by customers for losses sustained by them. In such an event, we may be required, or may choose, for customer relations or other reasons, to expend additional resources in order to help correct the problem. In addition, we may not carry insurance sufficient to compensate us for any losses that may result from claims arising from defects or disruptions in our products. As a result, our reputation and our brand could be harmed, and our business, results of operations and financial condition may be adversely affected.

***If we fail to adapt and respond effectively to rapidly changing technology, evolving industry standards, changing regulations, 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, changing regulations, as well as changing customer needs, requirements and preferences. The success of our business will depend, in part, on our ability to adapt and respond effectively to these changes on a timely basis. If we are unable to develop new products that satisfy our customers and provide enhancements and new features for our existing products that keep pace with rapid technological and industry change, our business, results of operations and financial condition could be adversely affected. If new technologies emerge that are able to deliver competitive products and services at lower prices, more efficiently, more conveniently or more securely, such technologies could adversely impact our ability to compete effectively.

Our platform must integrate with a variety of network, hardware, mobile and software platforms and technologies, 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 may develop new applications or functions intended to filter spam and unwanted phone calls, and such applications or functions may inadvertently filter desired messages or calls to or from our customers. If 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.

***Our reliance on SaaS technologies from third parties may adversely affect our business, results of operations and financial condition.***

We rely heavily on hosted SaaS technologies from third parties in order to operate critical internal functions of our business, including enterprise resource planning, customer support and customer relations management services. If these services become unavailable due to extended outages or interruptions, or because they are no longer available on commercially reasonable terms or prices, our expenses could increase. As a result, our ability to manage our operations could be interrupted and our processes for managing our sales process and supporting our customers could be impaired until equivalent services, if available, are identified, obtained and implemented, all of which could adversely affect our business, results of operations and financial condition.

***If we are unable to develop and maintain successful relationships with consulting partners, our business, results of operations and financial condition could be adversely affected.***

We believe that continued growth of our business depends in part upon identifying, developing and maintaining strategic relationships with consulting partners. As part of our growth strategy, we intend to further develop partnerships and specific solution areas with consulting partners. If we fail to establish these relationships in a timely and cost-effective manner, or at all, then our business, results of operations and financial condition could be adversely affected. Additionally, even if we are successful at developing these relationships but there are problems or issues with the integrations or enterprises are not willing to purchase through consulting partners, our reputation and ability to grow our business may be adversely affected.

***Any failure to offer high quality customer support may adversely affect our relationships with our customers and prospective customers, and adversely affect our business, results of operations and financial condition.***

Many of our customers depend on our customer support team to assist them in deploying our products effectively to help them to resolve post-deployment issues quickly and to provide ongoing support. If we do not devote sufficient resources or are otherwise unsuccessful in assisting our customers effectively, it could adversely affect our ability to retain existing customers and could prevent prospective customers from adopting our products. We may be 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 to compete with changes in the support services provided by our competitors. Increased demand for customer support, without corresponding revenue, could increase costs and adversely affect our business, results of operations and financial condition. Our sales are highly dependent on our business reputation and on positive recommendations from developers. Any failure to maintain high quality customer support, or a market perception that we do not maintain high quality customer support, could adversely affect our reputation, 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 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. Our future success depends, in part, on not infringing the intellectual property rights of others. Our competitors or other third parties have claimed and may, in the future, claim that we are infringing upon their intellectual property rights, and we may be found to be infringing upon such rights. For example, Telesign Corporation ("Telesign") sued Twilio in 2015 and 2016 alleging that we are infringing four U.S. patents that it holds: U.S. Patent No. 7,945,034 ("034"), U.S. Patent No. 8,462,920 ("920"), U.S. Patent No. 8,687,038 ("038"), and U.S. Patent No. 9,300,792 ("792"). The patent infringement allegations in the lawsuit relate to the Company's two-factor authentication use case, *Authy*, and an API tool to find information about a phone number. On October 19, 2018, a United States District Court in the Northern District of California entered judgment in our favor on all asserted claims. Telesign has appealed and the case is now pending before the Court of Appeals for the Federal Circuit. See the section titled "Item 3. Legal Proceedings." We intend to vigorously defend ourselves against such lawsuits and believe we have meritorious defenses to matters in which we are a defendant. However, litigation is inherently uncertain, and any judgment or injunctive relief entered against us or any adverse settlement could negatively affect our business, results of operations and financial condition. In addition, litigation can involve significant management time and attention and be expensive, regardless of outcome. During the course of these lawsuits, there may be announcements of the results of hearings and motions and other interim developments related to the litigation. If securities analysts or investors regard these announcements as negative, the trading price of our Class A common stock may decline.

In the future, we may receive claims from third parties, including our competitors, that our products or platform and underlying technology infringe or violate a third party's intellectual property rights, and we may be found to be infringing upon such rights. We may be unaware of the intellectual property rights of others that may cover some or all of our technology. Any claims or litigation could cause us to incur significant expenses 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. We may also be obligated to indemnify our customers or business partners in connection with any such litigation and to obtain licenses or modify our products or platform, which could further exhaust our resources. Even if we were to prevail in the event of claims or litigation against us, any claim or litigation regarding intellectual property could be costly and time-consuming and divert the attention of our management and other employees from our business. Patent infringement, trademark infringement, trade secret misappropriation and other intellectual property claims and proceedings brought against us, whether successful or not, could harm our brand, business, results of operations and financial condition.

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

Our agreements with customers and other third parties typically include indemnification or other provisions under which we agree to indemnify or otherwise be liable to them for losses suffered or incurred as a result of claims of intellectual property infringement, damages caused by us to property or persons or other liabilities relating to or arising from our products or platform or other acts or omissions. The term of these contractual provisions often survives termination or expiration of the applicable agreement. Large indemnity payments or damage claims from contractual breach could harm our business, results of operations and financial condition. Although typically we contractually limit our liability with respect to such obligations, we may still incur substantial liability related to them. Any dispute with a customer with respect to such obligations could have adverse effects on our relationship with that customer and other current and prospective customers, demand for our products and adversely affect our business, results of operations and financial condition.

***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 of the United States and foreign jurisdictions so that we can prevent others from using our inventions and proprietary information. As of December 31, 2018, in the United States, we had been issued 104 patents, which expire between 2029 and 2037. As of such date, we also had 13 issued patents in foreign jurisdictions, all of which are related to U.S. patents and patent applications. We have also filed various applications for protection of certain aspects of our intellectual property in the United States and internationally. There can be no assurance that additional patents will be issued or that any patents that have been issued or that may be issued in the future will provide significant protection for our intellectual property. As of December 31, 2018, we had 15 registered trademarks in the United States and 94 registered trademarks in foreign jurisdictions. If we fail to protect our intellectual property rights adequately, our competitors might gain access to our technology and our business, results of operations and financial condition may be adversely affected.

There can be no assurance that the particular forms of intellectual property protection that we seek, including business decisions about when to file patent applications and trademark applications, will be adequate to protect our business. We could be required to spend significant resources to monitor and protect our intellectual property rights. Litigation may be necessary in the future to enforce our intellectual property rights, determine the validity and scope of our proprietary rights or those of others, or defend against claims of infringement or invalidity. Such litigation could be costly, time-consuming and distracting to management, result in a diversion of significant resources, the narrowing or invalidation of portions of our intellectual property and have an adverse effect on our business, results of operations and financial condition. Our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights or alleging that we infringe the counterclaimant's own intellectual property. Any of our patents, copyrights, trademarks or other intellectual property rights could be challenged by others or invalidated through administrative process or litigation.

We also rely, in part, on confidentiality agreements with our business partners, employees, consultants, advisors, customers and others in our efforts to protect our proprietary technology, processes and methods. These agreements may not effectively prevent disclosure of our confidential information, and it may be possible for unauthorized parties to copy our software or other proprietary technology or information, or to develop similar software independently without our 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 would not be able to assert any trade secret rights against those parties. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

In addition, the laws of some countries do not protect intellectual property and other proprietary rights to the same extent as the laws of the United States. To the extent we expand our international activities, our exposure to unauthorized copying, transfer and use of our proprietary technology or information may increase.

We cannot be certain that our means of protecting our intellectual property and proprietary rights will be adequate or that our competitors will not independently develop similar technology. If we fail to meaningfully protect our intellectual property and proprietary rights, our business, results of operations and financial condition could be adversely affected.

***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. Moreover, 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 source code for modifications or 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 complied with the conditions of one or more of these licenses, 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, could result in customer dissatisfaction and may adversely affect our business, results of operations and financial condition.

***We may acquire or invest in companies, which may divert our management's attention and result in debt or dilution to our stockholders. We may be unable to integrate acquired businesses and technologies successfully or achieve the expected benefits of such acquisitions.***

We may evaluate and consider potential strategic transactions, including acquisitions of, or investments in, businesses, technologies, services, products and other assets in the future. We also may enter into relationships with other businesses to expand our products and platform, which could involve preferred or exclusive licenses, additional channels of distribution, discount pricing or investments in other companies.

Any acquisition, investment or business relationship may result in unforeseen operating difficulties and expenditures. In particular, we may encounter difficulties assimilating or integrating the businesses, technologies, products, personnel or operations of the acquired companies, particularly if the key personnel of the acquired company choose not to work for us, their products or services are not easily adapted to work with our platform, or we have difficulty retaining the customers of any acquired business due to changes in ownership, management or otherwise. Acquisitions also may disrupt our business, divert our resources or require significant management attention that would otherwise be available for development of our existing business. Moreover, the anticipated benefits of any acquisition, investment or business relationship may not be realized or we may be exposed to unknown risks or liabilities.

Negotiating these transactions can be time consuming, difficult and expensive, and our ability to complete these transactions may often be subject to approvals that are beyond our control. Consequently, these transactions, even if announced, may not be completed. For one or more of those transactions, we may:

- issue additional equity securities that would dilute our existing stockholders;
- use cash that we may need in the future to operate our business;
- incur large charges or substantial liabilities;
- incur debt on terms unfavorable to us or that we are unable to repay;
- encounter difficulties retaining key employees of the acquired company or integrating diverse software codes or business cultures; or
- become subject to adverse tax consequences, substantial depreciation, or deferred compensation charges.

The occurrence of any of these foregoing could adversely affect our business, results of operations and financial condition.

***We depend largely on the continued services of our senior management and other key employees, the loss of any of whom could adversely affect our business, results of operations and financial condition.***

Our future performance depends on the continued services and contributions of 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. The 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 our co-founder and Chief Executive Officer, Jeff Lawson. None of our executive officers or other senior management personnel is bound by a written employment agreement and any of them may terminate employment with us at any time with no advance notice. On November 12, 2018, our Chief Financial Officer, Lee Kirkpatrick, resigned as our Chief Financial Officer and Khozema Shipchandler succeeded him as Chief Financial Officer at that time. Though Mr. Kirkpatrick will remain a consultant for a transition period ending in April 2019, we could experience a delay or disruption in the achievement of our business objectives during the period our new Chief Financial Officer gets up to speed on our business and financial and accounting systems. The replacement of any other of our senior management personnel would likely involve significant time and costs, and such loss could significantly delay or prevent the achievement of our business objectives. The loss of the services of any of our senior management or other key employees for any reason could adversely affect our business, results of operations and financial condition.

***If we are unable to hire, retain and motivate qualified personnel, our business will suffer.***

Our future success depends, in part, on our ability to continue to attract and retain highly skilled personnel. We believe that there is, and will continue to be, intense competition for highly skilled management, technical, sales and other personnel with experience in our industry in the San Francisco Bay Area, where our headquarters are located, and in other locations where we maintain offices. We must provide competitive compensation packages and a high quality work environment to hire, retain and motivate employees. If we are unable to retain and motivate our existing employees and attract qualified personnel 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. To the extent we hire personnel from competitors, we also may be subject to allegations that they have been improperly solicited or divulged proprietary or other confidential information.

Volatility in, or lack of performance of, our stock price may also affect our ability to attract and retain key personnel. Many of our key personnel are, or will soon be, vested in a substantial number of shares of Class A common stock or stock options. Employees may be more likely to terminate their employment with us if the shares they own or the shares underlying their vested options have significantly appreciated in value relative to the original purchase prices of the shares or the exercise prices of the options, or, conversely, if the exercise prices of the options that they hold are significantly above the trading price of our Class A common stock. If we are unable to retain our employees, our business, results of operations and financial condition could be adversely affected.

***Our products and platform and our business are subject to a variety of U.S. and international laws and regulations, including those regarding privacy, data protection and information security, and our customers may be subject to regulations related to the handling and transfer of certain types of sensitive and confidential information. Any failure of our products to comply with or enable our customers and channel partners to comply with applicable laws and regulations would harm our business, results of operations and financial condition.***

We and our customers that use our products may be subject to privacy- and data protection-related laws and regulations that impose obligations in connection with the collection, processing and use of personal data, financial data, health or other similar data. The U.S. federal and various state and foreign governments have adopted or proposed limitations on, or requirements regarding, the collection, distribution, use, security and storage of personally identifiable information of individuals. The U.S. Federal Trade Commission and numerous state attorneys general are applying federal and state consumer protection laws to impose standards on the online collection, use and dissemination of data, and to the security measures applied to such data.

Similarly, many foreign countries and governmental bodies, including the European Union ("EU") member states, have laws and regulations concerning the collection and use of personally identifiable information obtained from individuals located in the EU or by businesses operating within their jurisdiction, which are often more restrictive than those in the United States. Laws and regulations in these jurisdictions apply broadly to the collection, use, storage, disclosure and security of personally identifiable information that identifies or may be used to identify an individual, such as names, telephone numbers, email addresses and, in some jurisdictions, IP addresses and other online identifiers.

For example, in April 2016 the EU adopted the General Data Protection Regulation ("GDPR"), which took full effect on May 25, 2018. The GDPR enhances data protection obligations for businesses and requires service providers (data processors) processing personal data on behalf of customers to cooperate with European data protection authorities, implement security measures and keep records of personal data processing activities. Noncompliance with the GDPR can trigger fines equal to or greater of €20 million or 4% of global annual revenues. Given the breadth and depth of changes in data protection obligations, preparing to meet the requirements of GDPR has required significant time and resources, including a review of our technology and systems currently in use against the requirements of GDPR. There are also additional EU laws and regulations (and member states implementations thereof) which govern the protection of consumers and of electronic communications. If our efforts to comply with GDPR or other applicable EU laws and regulations are not successful, we may be subject to penalties and fines that would adversely impact our business and results of operations, and our ability to conduct business in the EU could be significantly impaired.

We have in the past relied on the EU-U.S and the Swiss-U.S. Privacy Shield frameworks approved by the European Commission in July 2016 and the Swiss Government in January 2017, respectively, which were designed to allow U.S. corporations to self-certify to the U.S. Department of Commerce and publicly commit to comply with the Privacy Shield requirements to freely import personal data from the EU and Switzerland. However, ongoing legal challenges to these frameworks has resulted in some uncertainty as to their validity. While our Binding Corporate Rules, approved in May 2018, now serve as our primary mechanism to legitimize data transfers from the European Economic Area, we may nonetheless experience hesitancy, reluctance, or refusal by European or multinational customers to continue to use our services due to the potential risk exposure to such customers as a result of a European Union Court of Justice ruling negatively impacting the Privacy Shield frameworks. We and our customers are at risk of enforcement actions taken by an EU data protection authority until such point in time that we are able to ensure that all data transfers to us from the European Economic Area are legitimized. In addition, as the United Kingdom transitions out of the EU, we may encounter additional complexity with respect to data privacy and data transfers from the U.K.

Furthermore, outside of the EU, we continue to see increased regulation of data privacy and security, including the adoption of more stringent subject matter specific state laws in the United States. For example, on June 28, 2018, California enacted the California Consumer Privacy Act (CCPA), which takes effect on January 1, 2020. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability. Some observers have noted that the CCPA could mark the beginning of a trend toward more stringent state privacy legislation in the U.S., which could increase our potential liability and adversely affect our business.

As well, we continue to see jurisdictions imposing data localization laws, which require personal information, or certain subcategories of personal information to be stored in the jurisdiction of origin. These regulations may inhibit our ability to expand into those markets or prohibit us from continuing to offer services in those markets without significant additional costs

The uncertainty and changes in the requirements of multiple jurisdictions may increase the cost of compliance, delay or reduce demand for our services, restrict our ability to offer services in certain locations, impact our customers' ability to deploy our solutions in certain jurisdictions, or subject us to sanctions, by national data protection regulators, all of which could harm our business, financial condition and results of operations.

Additionally, although we endeavor to have our products and platform comply with applicable laws and regulations, these and other obligations may be modified, they may be interpreted and applied in an inconsistent manner from one jurisdiction to another, and they may conflict with one another, other regulatory requirements, contractual commitments or our internal practices

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

We expect that there will continue to be new proposed laws, rules of self-regulatory bodies, regulations and industry standards concerning privacy, data protection and information security in the United States, the European Union and other jurisdictions, and we cannot yet determine the impact such future laws, rules, regulations and standards may have on our business. Moreover, existing U.S. federal and various state and foreign privacy- and data protection-related laws and regulations are evolving and subject to potentially differing interpretations, and various legislative and regulatory bodies may expand current or enact new laws and regulations regarding privacy- and data protection-related matters. Because global laws, regulations and industry standards concerning privacy and data security have continued to develop and evolve rapidly, it is possible that we or our products or platform may not be, or may not have been, compliant with each such applicable law, regulation and industry standard and compliance with such new laws or to changes to existing laws may impact our business and practices, require us to expend significant resources to adapt to these changes, or to stop offering our products in certain countries. These developments could adversely affect our business, results of operations and financial condition.

Any failure or perceived failure by us, our products or our platform to comply with new or existing U.S., EU or other foreign privacy or data security laws, regulations, policies, industry standards or legal obligations, or any security incident that results in the unauthorized access to, or acquisition, release or transfer of, personally identifiable information or other customer data may result in governmental investigations, inquiries, enforcement actions and prosecutions, private litigation, fines and penalties, adverse publicity or potential loss of business. For example, on February 18, 2016, a putative class action complaint was filed in the Alameda County Superior Court in California. The complaint alleged that our products permit the interception, recording and disclosure of communications at a customer's request and in violation of the California Invasion of Privacy Act. This litigation, or any other such actions in the future and related penalties could divert management's attention and resources, adversely affect our brand, 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 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.

***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 Federal Communications Commission ("FCC") regulations relating to privacy, Telecommunications Relay Service fund contributions and other requirements. FCC classification of our Internet voice communications products as telecommunications services could result in additional federal and state regulatory obligations. 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. Any enforcement action by the FCC, which may be a public process, would hurt our reputation in the industry, possibly impair our ability to sell our products to customers and could adversely affect our business, results of operations and financial condition.

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, artificial or prerecorded voice messages, SMS text messages and fax machines;
- the Communications Assistance for Law Enforcement Act ("CALEA"), which requires covered entities to assist law enforcement in undertaking electronic surveillance;
- requirements to safeguard the privacy of certain customer information;
- payment of annual FCC regulatory fees based on our interstate and international revenues;
- rules pertaining to access to our services by people with disabilities and contributions to the Telecommunications Relay Services fund; and
- FCC rules regarding the use of customer proprietary network information.

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. Any of the foregoing could adversely affect our business, results of operations and financial condition.

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 over 180 countries.

Our international operations are subject to country-specific governmental regulation and related actions that have increased and may continue to increase our costs or impact our products and platform or prevent us from offering or providing our products in certain countries. Certain of our products may be used by customers located in countries where voice and other forms of 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, and 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 required to discontinue those services if required by law or if we cannot or will not meet those requirements.

***If we are unable to effectively process local number and toll-free number portability provisioning in a timely manner or to obtain or retain direct inward dialing numbers and local or toll-free numbers, our business and results of operations may be adversely affected.***

We support local number and toll-free 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 products. Transferring existing numbers is a manual process that can take up to 15 business days or longer to complete. A new customer of our voice products must maintain both our voice product and the customer's existing phone service during the number transferring process. 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. Local 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.

In addition, our future success depends in part on our ability to procure large quantities of local and toll-free direct inward dialing numbers ("DIDs"), in the United States and foreign countries at a reasonable cost and without restrictions. Our ability to procure, distribute and retain DIDs depends on factors outside of our control, such as applicable regulations, the practices of network service providers that provide DIDs, such as offering DIDs with conditional minimum volume call level requirements, the cost of these DIDs and the level of overall competitive demand for new DIDs.

In addition, in order to procure, distribute and retain telephone numbers from the European Union or certain other regions, we are often required to register with the local telecommunications regulatory authorities, some of which have been increasingly monitoring and regulating the categories of phone numbers that are eligible for provisioning to our customers. We are in the process of registering in various countries in which we do business, but in some countries, the regulatory regime around provisioning of phone numbers 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. If we or our customers use phone numbers in these countries in a manner that violates applicable rules and regulations, we may also be subject to significant penalties or governmental action, including government-initiated audits and, in extreme cases, may be precluded from doing business in that particular country. In the event of such non-compliance, we may be forced to reclaim phone numbers from our customers, which could result in loss of customers, breach of contract claims, loss of revenue and reputational harm, all of which could have a material 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 DIDs for our operations would 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 DIDs. It may become increasingly difficult to source larger quantities of

DIDs as we scale and we may need to pay higher costs for DIDs, and DIDs may become subject to more stringent regulation or conditions of usage such as the registration and on-going compliance requirements discussed above. Any of the foregoing could adversely affect our business, results of operations and financial condition.

***We face a risk of litigation resulting from customer misuse of our software to send unauthorized text messages in violation of the Telephone Consumer Protection Act.***

The actual or perceived improper sending of text messages may subject us to potential risks, including liabilities or claims relating to consumer protection laws. For example, the Telephone Consumer Protection Act of 1991 restricts telemarketing and the use of automatic SMS text messages without proper consent. 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 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.

***We may be subject to governmental export controls and economic sanctions regulations that could impair our ability to compete in international markets due to licensing requirements and could subject us to liability if we are not in compliance with applicable laws.***

Certain of our products and services may be subject to export control and economic sanctions 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 Controls. Exports of our products and the provision of our services must be made in compliance with these laws and regulations. Although we take precautions to prevent our products from being provided in violation of such laws, 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 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. Obtaining the necessary authorizations, including any required license, for a particular deployment may be time-consuming, is not guaranteed and may result in the delay or loss of sales opportunities. In addition, changes in our products or services, or changes in applicable export or economic sanctions regulations may create delays in the introduction and deployment of our products and services in international markets, or, in some cases, prevent the export of our products or provision of our services to certain countries or end users. Any change in export or economic sanctions regulations, 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 limitation 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 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 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 state sales and use tax positions. In determining the adequacy of 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 are currently in discussions with certain states regarding prior state sales taxes that we may owe. We have reserved $22.6 million on our December 31, 2018 balance sheet for these tax payments. The actual exposure could differ materially from our current estimates, and if the actual payments we make to these and other states exceed the accrual in our balance sheet, our results of operations would be harmed.

***We could be subject to liability for historical and future sales, use and similar taxes, which could adversely affect our results of operations.***

We conduct operations in many tax jurisdictions throughout the United States. In many of these jurisdictions, non-income-based taxes, such as sales and use and telecommunications taxes, are assessed on our operations. We are subject to indirect taxes, and may be subject to certain other taxes, in some of these jurisdictions. Historically, we have not billed or collected these taxes and, in accordance with generally accepted accounting principles in the United States ("U.S. 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. 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, 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.

We may be subject to scrutiny from state tax authorities in various jurisdictions and may have additional exposure related to our historical operations. Furthermore, certain jurisdictions in which we do not collect such taxes may assert that such taxes are applicable, which could result in tax assessments, penalties and interest, and we may be required to collect such taxes in the future. Such tax assessments, penalties and interest or future requirements may adversely affect our business, results of operations and financial condition.

Effective March 2017, we began collecting telecommunications-based taxes from our customers in certain jurisdictions. Since then, we have added more jurisdictions where we collect these taxes and we expect to continue expanding the number of jurisdictions in which we will collect these taxes in the future. Some customers may question the incremental tax charges and some may seek to negotiate lower pricing from us, which could adversely affect our business, results of operations and financial condition.

***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.

Certain government agencies in jurisdictions where we and our affiliates do business have had an extended focus on issues related to the taxation of multinational companies. In addition, the Organization for Economic Co-operation and Development is conducting a project focused on base erosion and profit shifting in international structures, which seeks to establish certain international standards for taxing the worldwide income of multinational companies. As a result of these developments, the tax laws of certain countries in which we and our affiliates do business could change on a prospective or retroactive basis, and any such changes could increase our liabilities for taxes, interest and penalties, and therefore could harm our business, cash flows, results of operations and financial position.

***Changes in the U.S. taxation of international business activities or the adoption of other tax reform policies could materially impact our business, results of operations and financial condition.***

Changes to U.S. tax laws that may be enacted in the future could impact the tax treatment of our foreign earnings. Due to the expansion of our international business activities, any changes in the U.S. taxation of such activities may increase our worldwide effective tax rate and adversely affect our business, results of operations and financial condition.

***If we experience excessive credit card or fraudulent activity, we could incur substantial costs.***

Most of our customers authorize us to bill their credit card accounts directly for service fees that we charge. If people pay for our services with stolen credit cards, we could incur substantial third-party vendor costs for which we may not be reimbursed. Further, our customers provide us with credit card billing information online, and we do not review the physical credit cards used in these transactions, which increases our risk of exposure to fraudulent activity. We also incur charges, which we refer to as chargebacks, from the credit card companies from claims that the customer did not authorize the credit card transaction to purchase our services. If the number of unauthorized credit card transactions becomes excessive, we could be assessed substantial fines for excess chargebacks and we could lose the right to accept credit cards for payment.

Our products may also 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.

***Unfavorable conditions in our industry or the global economy or reductions in spending on information technology and communications could adversely affect our business, results of operations and financial condition.***

Our results of operations may vary based on the impact of changes in our industry or the global economy on our customers. Our results of operations depend in part on demand for information technology and cloud communications. In addition, our revenue is dependent on the usage of our products, which in turn is influenced by the scale of business that our customers are conducting. To the extent that weak economic conditions result in a reduced volume of business for, and communications by, our customers and prospective customers, demand for, and use of, our products may decline. Furthermore, weak economic conditions may make it more difficult to collect on outstanding accounts receivable. Additionally, historically, we have generated the substantial majority of our revenue from small and medium-sized businesses, and we expect this to continue for the foreseeable future. Small and medium-sized business may be affected by economic downturns to a greater extent than enterprises, and typically have more limited financial resources, including capital borrowing capacity, than enterprises. If our customers reduce their use of our products, or prospective customers delay adoption or elect not to adopt our products, as a result of a weak economy, this could adversely affect our business, results of operations and financial condition.

***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 and Class B common stock. Any debt financing that we may secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities. We may not be able to obtain additional financing on terms favorable to us, if at all. 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 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. While we have primarily transacted with customers and business partners in U.S. dollars, we have transacted with customers in Japan in Japanese Yen and in Europe in Euros and Swedish Kronas. 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 local currency for such locations. 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 do not currently maintain a program to hedge transactional exposures in foreign currencies. However, in the future, we may use derivative instruments, such as foreign currency forward and option contracts, 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.

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

As of December 31, 2018, we had federal, state and foreign net operating loss carryforwards ("NOLs"), of $452.7 million, $347.1 million and $8.1 million, respectively, due to prior period losses. In general, under Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), 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 to offset post-change taxable income. Our existing NOLs 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.

On December 22, 2017, the U.S. government enacted new tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act makes broad and complex changes to the U.S. tax code including changes to the uses and limitations of net operating losses. For example, while the Tax Act allows for federal net operating losses incurred in tax years beginning after December 31, 2017 to be carried forward indefinitely, the Tax Act also imposes an 80% limitation on the use of net operating losses that are generated in tax years beginning after December 31, 2017. However, net operating losses generated prior to December 31, 2017 will still have a 20-year carryforward period, but are not subject to the 80% limitation. Furthermore, our ability to utilize our net operating losses is conditioned upon our maintaining profitability in the future and generating U.S. federal taxable income. Since we do not know whether or when we will generate the U.S. federal taxable income necessary to utilize our remaining net operating losses, these net operating loss carryforwards generated prior to December 31, 2017 could expire unused.

***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 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 Part II, Item 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, capitalization of our internal-use software development costs and stock-based compensation. Our results of 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 financial 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, a new accounting guidance, Accounting Standards Codification ("ASC") 606, *"Revenue from Contracts with Customers"*, became effective on January 1, 2018. We adopted ASC 606 on January 1, 2018, and it resulted in an adjustment of $0.7 million to our opening retained earnings as of January 1, 2018. Although this accounting guidance did not have a material impact on our consolidated financial statements, there may be other standards that can become effective in the future that may have a material impact on our consolidated financial statements, such as Accounting Standards Update ("ASU") 2016-12, *"Leases"*, which will become effective on January 1, 2019, and will result in a significant gross up of our assets and liabilities. 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 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, or 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.

We reported in our Annual Report on Form 10-K as of December 31, 2017, a material weakness related to the tracking of qualifying internal use software development costs eligible for capitalization. During 2018, we completed the remediation measures related to our previously reported material weakness, and concluded that our internal control over financial reporting was effective as of December 31, 2018. However, completion of remediation does not provide assurance that our remediated controls will continue to operate properly or that our financial statements will be free from error.

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. 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 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.

***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, 2018, we carried a net $63.3 million of goodwill and intangible assets related to acquired businesses. An adverse change in market conditions, particularly if such change has 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. Any such charges may adversely affect our results of operations.

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

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. In addition, natural disasters and acts of terrorism 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 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 users may harm our reputation and our ability to retain existing users and attract new users.

## 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.***

Prior to our initial public offering in June 2016, there was no public market for shares of our Class A common stock. On June 23, 2016, we sold shares of our Class A common stock to the public at $15.00 per share. From June 23, 2016, the date that our Class A common stock started trading on the New York Stock Exchange, through January 31, 2019, the trading price of our Class A common stock has ranged from $22.80 per share to $113.3 per share. The trading price of our Class A common stock may continue to fluctuate significantly in response to numerous factors, many of which are beyond our control, 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 us or our stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts 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;
- 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;
- actual or anticipated changes in our results of operations or fluctuations in our results of operations;
- 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;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;

- any significant change in our management; and
- general economic conditions 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. Certain holders of our Class A common stock have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for our stockholders or ourselves.

***The dual class structure of our common stock has the effect of concentrating voting control 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 or precludes 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.***

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, 2018, our directors, executive officers and their respective affiliates, held in the aggregate 48.8% 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 continue to control a majority of the combined voting power of our common stock and therefore be able to control all matters submitted to our stockholders for approval until the earlier of (i) June 28, 2023, 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. This concentrated control limits or precludes your ability to influence corporate matters for the foreseeable future, 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, this 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, over time, of increasing the relative voting power of those holders of Class B common stock who retain their shares in the long term.

***If securities or industry analysts cease publishing research or reports about us, our business or our market, or if they 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 amended and restated bylaws, as well as provisions of Delaware law, could impair a takeover attempt.***

Our amended and restated certificate of incorporation, 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 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 the ability to control 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 stockholder action by written consent, which requires 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; and
- controlling the procedures for the conduct and scheduling of board of directors and stockholder meetings.

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

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.

Any provision of our amended and restated certificate of incorporation, 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.

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

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.

## Risks Related to the Outstanding Notes

***Servicing our future debt may require a significant amount of cash, and we may not have sufficient cash flow from our business to pay our indebtedness.***

Our ability to make scheduled payments of the principal of, to pay interest on or to refinance our indebtedness, including our 0.25% convertible senior notes due 2023 (the "Notes"), depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional debt financing or equity capital on terms that may be onerous or highly dilutive. Our ability to refinance any future indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations. In addition, any of our future debt agreements may contain restrictive covenants that may prohibit us from adopting any of these alternatives. Our failure to comply with these covenants could result in an event of default which, if not cured or waived, could result in the acceleration of our debt.

***We may not have the ability to raise the funds necessary for cash settlement upon conversion of the Notes or to repurchase the Notes for cash upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion of the Notes or to repurchase the Notes.***

Subject to limited exceptions, holders of the Notes have the right to require us to repurchase their Notes upon the occurrence of a fundamental change at a fundamental change repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest, if any, to, but excluding, the fundamental change repurchase date. In addition, upon conversion of the Notes, unless we elect to deliver solely shares of our Class A common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Notes surrendered therefor or pay any cash amounts due upon conversion. In addition, our ability to repurchase the Notes or to pay cash upon conversions of the Notes may be limited by law, by regulatory authority or by agreements governing our future indebtedness. Our failure to repurchase Notes at a time when the repurchase is required by the indenture governing the Notes or to pay any cash payable on future conversions of the Notes as required by such indenture would constitute a default under such indenture. A default under the indenture or the fundamental change itself could also lead to a default under agreements governing our future indebtedness. If the repayment of the related indebtedness were to be accelerated after any applicable notice or grace periods, we may not have sufficient funds to repay the indebtedness and repurchase the Notes or make cash payments upon conversions thereof.

***The conditional conversion feature of the Notes, if triggered, may adversely affect our financial condition and operating results.***

In the event the conditional conversion feature of the Notes is triggered, holders of Notes will be entitled to convert the Notes at any time during specified periods at their option. If one or more holders elect to convert their Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our Class A common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation through the payment of cash, which could adversely affect our liquidity. In addition, even if holders do not elect to convert their Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

***The accounting method for convertible debt securities that may be settled in cash, such as the Notes, could have a material effect on our reported financial results.***

Under Financial Accounting Standards Board Accounting Standards Codification 470-20, Debt with Conversion and Other Options, which we refer to as ASC 470-20, an entity must separately account for the liability and equity components of convertible debt instruments (such as the Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. ASC 470-20 requires the value of the conversion option of the Notes, representing the equity component, to be recorded as additional paid-in capital within stockholders' equity in our consolidated balance sheet and as a discount to the debt component of the Notes, which reduces their initial debt carrying value reflected as a liability on our balance sheets. The carrying value of the debt component of the Notes, net of the discount recorded, will be accreted up to the principal amount of the Notes from the issuance date until maturity, which will result in non-cash charges to interest expense in our consolidated statement of operations. Accordingly, we will report lower net income or higher net loss in our financial results because ASC 470-20 requires interest to include both the current period's accretion of the debt discount and the instrument's coupon interest, which could adversely affect our reported or future financial results, the trading price of our Class A common stock and the trading price of the Notes.

In addition, under certain circumstances, convertible debt instruments (such as the Notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of Class A common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Notes, then our diluted earnings per share would be adversely affected in periods when we report net income.

***The capped call transactions may affect the value of the Notes and our Class A common stock.***

In connection with the pricing of the Notes, we entered into privately negotiated capped call transactions with the option counterparties. The capped call transactions are expected generally to reduce the potential dilution to our Class A common stock upon any conversion of the Notes and/or offset any potential cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be, with such reduction and/or offset subject to a cap.

In connection with establishing their initial hedges of the capped call transactions, the option counterparties or their respective affiliates entered into various derivative transactions with respect to our Class A common stock and/or purchased shares of our Class A common stock concurrently with or shortly after the pricing of the Notes.

In addition, the option counterparties and/or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our Class A common stock and/or purchasing or selling our Class A common stock or other securities of ours in secondary market transactions at any time prior to the maturity of the Notes (and are likely to do so during any observation period related to a conversion of Notes). This activity could cause or avoid an increase or a decrease in the market price of our Class A common stock.

We do not make any representation or prediction as to the direction or magnitude of any potential effect that the transactions described above may have on the price of the Notes or our Class A common stock. In addition, we do not make any representation that the option counterparties will engage in these transactions or that these transactions, once commenced, will not be discontinued without notice.

***We are subject to counterparty risk with respect to the capped call transactions.***

The option counterparties are financial institutions, and we will be subject to the risk that any or all of them might default under the capped call transactions. Our exposure to the credit risk of the option counterparties will not be secured by any collateral. Past global economic conditions have resulted in the actual or perceived failure or financial difficulties of many financial institutions. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at that time under the capped call transactions with such option counterparty. Our exposure will depend on many factors but, generally, an increase in our exposure will be correlated to an increase in the market price and in the volatility of our Class A common stock. In addition, upon a default by an option counterparty, we may suffer adverse tax consequences and more dilution than we currently anticipate with respect to our Class A common stock. We can provide no assurances as to the financial stability or viability of the option counterparties.

## Risks Related to the Acquisition of SendGrid

***Although we expect that the acquisition of SendGrid will result in synergies and other benefits to us, we may not realize those benefits because of difficulties related to integration, the achievement of synergies, and other challenges.***

We acquired SendGrid on February 1, 2019. Prior to the completion of the acquisition, we and SendGrid operated independently, and there can be no assurances that our businesses can be combined in a manner that allows for the achievement of substantial benefits. The integration process will 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 SendGrid's businesses with ours or pursue our customer and product strategy successfully, the anticipated benefits of the acquisition 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 and/or SendGrid's key employees and customers, disruption of either company's or both companies' ongoing businesses or unexpected issues, higher than expected costs and an overall post-completion process that takes longer than originally anticipated. Specifically, the following issues, among others, must be addressed in combining SendGrid's operations with ours in order to realize the anticipated benefits of the acquisition so the combined company performs as the parties hope:

- combining the companies' corporate functions;

- combining SendGrid's business with our business in a manner that permits us to achieve the synergies anticipated to result from the acquisition, the failure of which would result in the anticipated benefits of the acquisition 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' administrative and information technology infrastructure;
- developing products and technology that allow value to be unlocked in the future;
- evaluating and forecasting the financial impact of the acquisition transaction, including accounting charges; and
- 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 businesses of the two companies and diverted from day-to-day business operations, which may disrupt our ongoing business and the business of the combined company.

We have incurred, and may continue to incur, significant, non-recurring costs in connection with the acquisition of SendGrid and integrating the operations of Twilio and SendGrid, 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.

***Purchase price accounting in connection with our acquisition of SendGrid 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 paid for SendGrid will be allocated to the underlying SendGrid 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. Accordingly, the purchase price allocation as of the acquisition date will be preliminary. We currently anticipate that all the information needed to identify and measure values assigned to the assets acquired and liabilities assumed will be obtained and finalized during the one-year measurement period following the date of completion of the acquisition. 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.

## Item 1B. *Unresolved Staff Comments*

None.

## Item 2. *Properties*

Our headquarters is located in San Francisco, California, where we lease approximately 90,000 square feet of office space under a lease that expires in 2024. The lease payments range from

$0.4 million per month in the first 60 months to $0.5 million per month thereafter. The lease included a tenant improvement allowance to cover construction of certain leasehold improvements for up to $8.3 million. All of this amount had been collected from the landlord as of December 31, 2017. We secured our lease obligation with a $7.4 million letter of credit, which we designated as restricted cash on our balance sheet as of December 31, 2016. This letter of credit is periodically reduced, as stipulated in the lease agreement and upon satisfaction of required conditions. As of December 31, 2018, the restricted cash on our balance sheet related to this lease was $3.3 million.

In September 2018, we entered into a sub-lease agreement ("Sub-lease") for a total of 259,416 rentable square feet of office space at 101 Spear Street in San Francisco, California. The Sub-lease covers several floors for which the terms commence on December 1, 2018 and April 1, 2020, and will be expiring at various dates between March 2025 and June 2028. The lease payments will range from $0.8 million per months to $2.2 million per month. We secured our lease obligation with a $14.7 million letter of credit, which it designated as restricted cash on our balance sheet as of December 31, 2018. We intend for this location to become our headquarters at some time in 2019.

In addition to our headquarters, we lease space in Mountain View, Tallinn, Bogota, Madrid, Malmo, Prague and Berlin as additional research and development offices. We also lease space for additional sales and marketing offices in New York, Atlanta, Dublin, London, Munich, Hong Kong, Singapore, Sydney and Melbourne. Our Dublin office is our international headquarters.

We lease all of our facilities and do not own any real property. We intend to procure additional space in the future as we continue to add employees and expand geographically. We believe our 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***

On April 30, 2015 and March 28, 2016, Telesign Corporation ("Telesign") filed lawsuits (which were subsequently consolidated) against us in the United States District Court, Central District of California ("Telesign I/II"). Telesign alleges in Telesign I/II that we are infringing four U.S. patents that it holds: U.S. Patent No. 7,945,034 ("034"), U.S. Patent No. 8,462,920 ("920"), U.S. Patent No. 8,687,038 ("038") and U.S. Patent No. 9,300,792 ("792"). The consolidated Telesign I/II actions have been transferred to the United States District Court, Northern District. The patent infringement allegations in the lawsuit relate to our two-factor authentication use case, *Authy,* and an API tool to find information about a phone number. Telesign seeks, among other things, to enjoin us from allegedly infringing the patents, along with damages for lost profits.

On March 8, 2017, in response to a petition by us, the U.S. Patent and Trademark Officer ("PTO") issued an order instituting an *inter partes* review for the '792 patent. On March 6, 2018, the PTO found all claims challenged by us in the *inter partes* review unpatentable. On October 19, 2018, the district court granted our motion that all asserted claims of the asserted patents are invalid under 35 U.S.C. § 101 and entered judgment in our favor. On November 8, 2018, Telesign appealed the judgment to the United States Court of Appeals for the Federal Circuit where the case is now pending. Based on, among other things, final judgment being entered by the district court in our favor, we do not believe a loss is reasonably possible or estimable.

On December 1, 2016, we filed a patent infringement lawsuit against Telesign in the United States District Court, Northern District of California ("Telesign III"), alleging indirect infringement of United States Patent No. 8,306,021 ("021"), United States Patent No. 8,837,465 ("465"), United States Patent No. 8,755,376 ("376"), United States Patent No. 8,736,051 ("051"), United States Patent No. 8,737,962 ("962"), United States Patent No. 9,270,833 ("833"), and United States Patent No. 9,226,217 ("217"). Telesign filed a motion to dismiss the complaint on January 25, 2017. In two orders, issued on March 31, 2017 and April 17, 2017, the court granted Telesign's motion to dismiss with respect to the

'962, '833, '051 and '217 patents, but denied Telesign's motion to dismiss as to the '021, '465 and '376 patents. On August 23, 2017, Telesign petitioned the U.S. Patent and Trademark Office ("U.S. PTO") for *inter partes* review of the '021, '465, and '376 patents. On March 9, 2018, the PTO denied Telesign's petition for *inter partes* review of the '021 patent and granted Telesign's petitions for *inter partes* review of the '465 and '376 patents. Telesign III is currently stayed pending resolution of the *inter partes* reviews of the '465 and '376 patents. We are is seeking a judgment of infringement, a judgment of willful infringement, monetary and injunctive relief, enhanced damages, and an award of costs and expenses against Telesign.

On February 18, 2016, a putative class action complaint was filed in the Alameda County Superior Court in California, entitled Angela Flowers v. Twilio Inc. The complaint alleges that our products permit the interception, recording and disclosure of communications at a customer's request and are in violation of the California Invasion of Privacy Act. The complaint seeks injunctive relief as well as monetary damages. On January 2, 2018, the court issued an order granting in part and denying in part the plaintiff's class certification motion. The court certified two classes of individuals who, during specified time periods, allegedly sent or received certain communications involving the accounts of three of our customers that were recorded. Following mediation, on January 7, 2019, the parties signed a long-form settlement agreement, providing for a payment of $10 million into a common fund and injunctive relief involving certain updates to Twilio's Acceptable Use Policy and customer documentation. On January 15, 2019, the court entered an order granting preliminary approval of the settlement, and the parties signed an amended settlement agreement to conform to the court's order. A final approval hearing is scheduled for June 11, 2019. Given insurance coverage, we currently estimate our potential liability in the Flowers matter to be $1.7 million and we reserved this amount in our consolidated balance sheet as of December 31, 2018, presented elsewhere in this Annual Report on Form 10-K.

On September 1, 2015, Twilio was named as a defendant in a First Amended Complaint in a putative class action captioned Jeremy Bauman v. David Saxe, et al. pending in the United States District Court, District of Nevada relating to the alleged sending of unsolicited text messages to the plaintiffs and putative class members. The Company filed a motion to dismiss, which was granted, and on September 20, 2016 the plaintiff filed a Second Amended Complaint with additional allegations that the Company violated the Telephone Consumer Protection Act ("TCPA"), and the Nevada Deceptive Trade Practices Act ("NDTPA"), NRS 41.600(2)(e). On January 10, 2019, the court granted Plaintiffs' motion for class certification under the TCPA and denied plaintiff's request to certify a class under the NDTPA. On February 13, 2019, the court issued an order denying Twilio's motion to dismiss as to Plaintiffs' TCPA claim and granting dismissal as to Plaintiffs' NDTPA claim. The Company intends to vigorously defend itself against and believes it has meritorious defenses to this lawsuit. It is too early in these matters to reasonably predict the probability of the outcomes or to estimate the range of possible loss, if any.

***SendGrid Stockholder Litigation***

On December 5, 2018, purported stockholders of SendGrid filed putative class action complaints in the United States District Court for the District of Delaware, Rosenblatt v. SendGrid, Inc., et al., Case No. 1:18-cv-01931-UNA (the "Rosenblatt Complaint"), and in the United States District Court for the District of Colorado, Chen v. SendGrid, Inc., et al., Case No. 1:18-cv-03131-MEH (the "Chen Complaint"), against SendGrid, the individual members of the SendGrid board of directors (the "Individual Defendants"), Twilio and Topaz Merger Subsidiary, Inc.. Thereafter, on December 19, 2018 and January 3, 2019, purported stockholders of SendGrid filed putative class action complaints against SendGrid and the Individual Defendants in the United States District Court for the District of Colorado, respectively, Bushansky v. SendGrid, Inc., et al., 1:18-cv-03260-SKC (the "Bushansky

Complaint"), and Conner v. SendGrid, Inc., et al., 1:19-cv-00016-PAB-SKC (the "Conner Complaint"). As of February 11, 2019, all four complaints have been voluntarily dismissed.

Among other things, the Rosenblatt Complaint alleges that SendGrid and the Individual Defendants misrepresented and/or omitted material information in a registration statement on Form S-4, rendering it false and misleading and in violation of the Exchange Act and related regulations. In addition, the Rosenblatt Complaint alleges that the Individual Defendants and Twilio acted as controlling persons within the meaning and in violation of Section 20(a) of the Exchange Act to influence and control the dissemination of the allegedly defective registration statement on Form S-4.

The Rosenblatt Complaint seeks, among other things, rescission of the merger or rescissory damages, an order directing the SendGrid board of directors to file a registration statement on Form S-4 that does not contain any untrue statements of material fact and states all material facts, a declaration that the defendants violated Sections 14(a) and/or 20(a) of the Exchange Act and Rule 14a-9 promulgated thereunder and an award of plaintiff costs, including reasonable attorneys' and experts' fees. On February 11, 2019, the Rosenblatt Complaint was voluntarily dismissed.

Among other things, the Chen Complaint alleges that the defendants misrepresented and/or omitted material information in a registration statement on Form S-4, rendering it false and misleading and in violation of the Exchange Act and related regulations. In addition, the Chen Complaint alleges that the Individual Defendants acted as controlling persons within the meaning and in violation of Section 20(a) of the Exchange Act to influence and control the dissemination of the allegedly defective Form S-4. The Chen Complaint also alleges that the Individual Defendants breached their fiduciary duties to SendGrid stockholders, and that the other defendants aided and abetted such breaches, by seeking to sell SendGrid through an allegedly unfair process and for an unfair price and on unfair terms, and by failing to disclose all material information. The Chen Complaint seeks, among other things, rescission of the merger or rescissory damages, an order directing the SendGrid board of directors to commence a new sale process, a declaration that the merger agreement was agreed to in breach of the Individual Defendants' fiduciary duties and is therefore unlawful and unenforceable, an order directing the defendants to account to the putative class for damages allegedly sustained, and an award of plaintiff costs, including reasonable attorneys' and experts' fees. On February 4, 2019, the Chen Complaint was voluntarily dismissed.

Among other things, the Bushansky and Conner Complaints allege that SendGrid and the Individual Defendants misrepresented and/or omitted material information in a Schedule 14A Definitive Proxy Statement, rendering it false and misleading and in violation of the Exchange Act and related regulations. In addition, the Bushansky and Conner Complaints allege that the Individual Defendants acted as controlling persons within the meaning and in violation of Section 20(a) of the Exchange Act to influence and control the dissemination of the allegedly defective Schedule 14A Definitive Proxy Statement. The Bushansky and Conner Complaints seek, among other things, rescission of the merger or rescissory damages, and an award of plaintiff costs, including reasonable attorneys' and experts' fees. On February 4, 2019, the Bushansky Complaint was voluntarily dismissed. On February 11, 2019, the Conner Complaint was voluntarily dismissed.

In addition to the litigation discussed above, from time to time, we may be subject to legal actions and claims in the ordinary course of business. We have 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 ourselves, our partners and our 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 us because of defense and settlement costs, diversion of management resources, and other factors.

**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 Price of Our Class A Common Stock***

As of January 31, 2019, we had 85 holders of record of our Class A and Class B common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

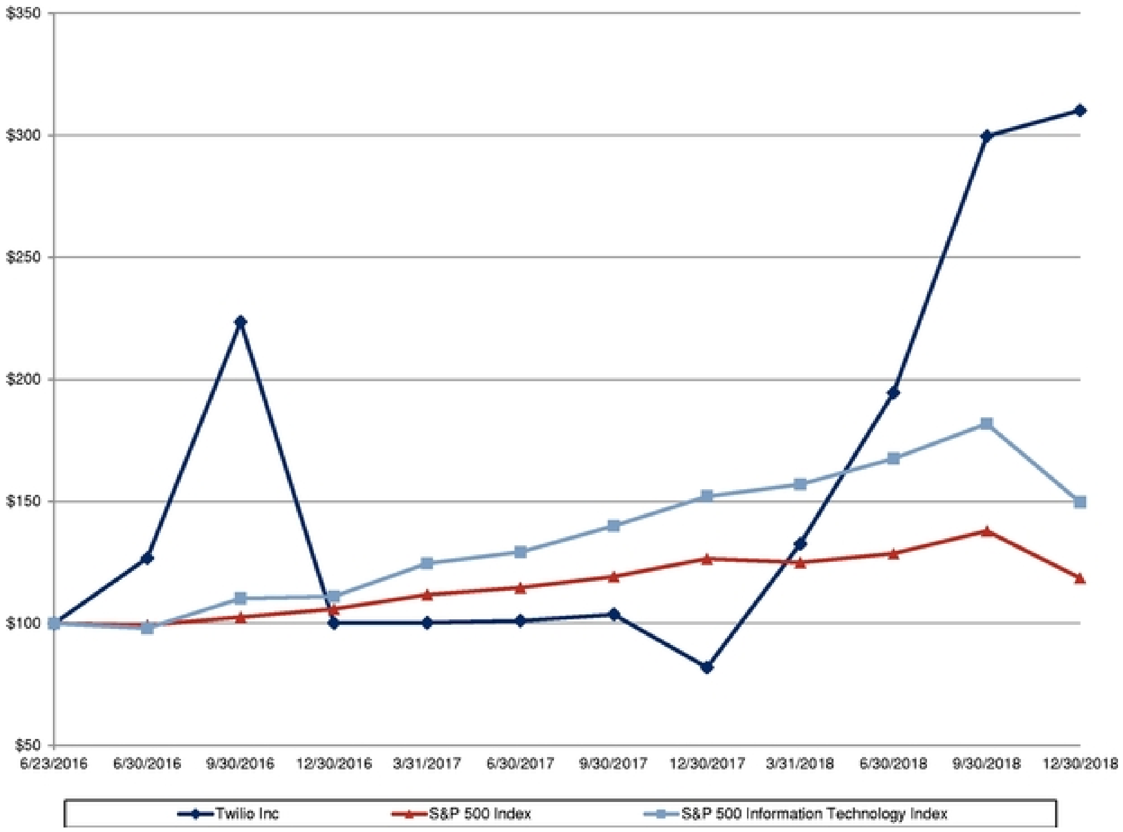
***Dividend Policy***

We have never declared or paid 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 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 or the Exchange Act*

We have presented below the cumulative total return to our stockholders between June 23, 2016 (the date our Class A common stock commenced trading on the NYSE) through December 31, 2018 in comparison to the S&P 500 Index and S&P 500 Information Technology Index. All values assume a $100 initial investment and data for the S&P 500 Index and S&P 500 Information Technology Index assume reinvestment of dividends. 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.




***Recent Sales of Unregistered Securities and Use of Proceeds from Registered Securities***

***(a) Sales of Unregistered Securities***

In May 2018, we issued $550 million in aggregate principal amount of 0.25% Convertible Senior Notes due 2023 (the "Notes"). In connection with the offering of the Notes, we entered into privately-negotiated capped call transactions with certain counterparties (the "capped calls"). The capped calls each have an initial strike price of approximately $70.90 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Notes. The capped calls have initial cap prices of $105.04 per share, subject to certain adjustments. The capped calls cover, subject to anti-dilution adjustments, approximately 7,757,200 shares of Class A Common Stock. See Note 8 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information about the Notes and capped calls.

The Company offered and sold the Notes to the initial purchasers in reliance on the exemption from registration provided by Section 4(a)(2) of the Securities Act, and for resale by the initial purchasers to qualified institutional buyers pursuant to the exemption from registration provided by Rule 144A under the Securities Act. The Company relied on these exemptions from registration based in part on representations made by the initial purchasers in the purchase agreement dated May 14, 2018. The shares of the Class A common stock issuable upon conversion of the Notes, if any, have not been registered under the Securities Act and may not be offered or sold in the United States absent registration or an applicable exemption from registration requirements.

To the extent that any shares of the Class A common stock are issued upon conversion of the Notes, they will be issued in transactions anticipated to be exempt from registration under the Securities Act by virtue of Section 3(a)(9) thereof, because no commission or other remuneration is expected to be paid in connection with conversion of the Notes, and any resulting issuance of shares of the Class A common stock.

In November 2018, Twilio.org donated 62,338 shares of unregistered Class A common stock to an independent DAF to further our philanthropic goals. The shares are "restricted securities" for purposes of Rule 144 under the Securities Act and the fair market value of these shares on the date of the donation was $6.0 million. This amount is recorded as charitable contribution in the consolidated statement of operations included elsewhere in this Annual Report on Form 10-K.

***(b) Use of Proceeds***

In June 2016, we closed our initial public offering ("IPO"), in which we sold 11,500,000 shares of Class A common stock at a price to the public of $15.00 per share, including shares sold in connection with the exercise of the underwriters' option to purchase additional shares. The offer and sale of all of the shares in the IPO were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-211634), which was declared effective by the SEC on June 22, 2016. We raised $155.5 million in net proceeds after deducting underwriting discounts and commissions of $12.1 million and offering expenses of $4.9 million. No payments were made by us to directors, officers or persons owning 10 percent or more of our capital stock or to their associates, or to our affiliates, other than payments in the ordinary course of business to officers for salaries. There has been no material change in the planned use of proceeds from our IPO as described in our final prospectus filed with the SEC on June 23, 2016 pursuant to Rule 424(b). We invested the funds received in accordance with our board-approved investment policy, which provides for investments in obligations of the U.S. government, money market instruments, registered money market funds and corporate bonds. The managing underwriters of our IPO were Goldman, Sachs & Co. and J.P. Morgan Securities LLC.

In October 2016, we closed our follow-on public offering, in which we sold 1,691,222 shares of Class A common stock at a price to the public of $40.00 per share, including shares sold in connection with the exercise of the underwriters' option to purchase additional shares. The offer and sale of all of the shares in the follow-on offering were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-214034), which was declared effective by the SEC on October 20, 2016. We raised $64.4 million in net proceeds after deducting underwriting discounts and commissions and offering expenses paid and payable by us. No payments were made by us to directors, officers or persons owning 10 percent or more of our capital stock or to their associates, or to our affiliates, other than payments in the ordinary course of business to officers for salaries. There has been no material change in the planned use of proceeds from our follow-on offering as described in our final prospectus filed with the SEC on October 21, 2016 pursuant to Rule 424(b). We invested the funds received in accordance with our board-approved investment policy, which provides for investments in obligations of the U.S. government, money market instruments, registered money market funds and corporate bonds. The managing underwriters of our follow-on offering were Goldman, Sachs & Co. and J.P. Morgan Securities LLC.

***(c) Issuer Purchases of Equity Securities***

None.

**Item 6.** ***Selected Financial and Other Data***

We have derived the selected consolidated statements of operations data for the years ended December 31, 2018, 2017 and 2016 and the balance sheet data as of December 31, 2018 and 2017 from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The selected consolidated statements of operations data for the years ended December 31, 2015 and 2014 and the consolidated balance sheet data as of December 31, 2016, 2015 and 2014 are derived from audited consolidated financial statements not included in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results that may be expected in the future. The following selected consolidated financial and other data should be read in conjunction with Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations", and our consolidated financial statements and the related notes appearing in Part II, Item 8, "Financial Statements and Supplementary Data", of this Annual Report on Form 10-K to fully understand factors that may affect the comparability of the information presented below.

| | Year Ended December 31, 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| | (In thousands, except share, per share and customer data) | | | | |
| **Consolidated Statement of Operations Data:** | | | | | |
| Revenue | $ 650,067 | $ 399,020 | $ 277,335 | $ 166,919 | $ 88,846 |
| Cost of revenue(1)(2) | 300,841 | 182,895 | 120,520 | 74,454 | 41,423 |
| Gross profit | 349,226 | 216,125 | 156,815 | 92,465 | 47,423 |
| Operating expenses: | | | | | |
| Research and development(1)(2) | 171,358 | 120,739 | 77,926 | 42,559 | 21,824 |
| Sales and marketing(1)(2) | 175,555 | 100,669 | 65,267 | 49,308 | 33,322 |
| General and administrative(1)(2) | 110,427 | 59,619 | 51,077 | 35,991 | 18,960 |
| Charitable contribution | 7,121 | 1,172 | 3,860 | — | — |
| Total operating expenses | 464,461 | 282,199 | 198,130 | 127,858 | 74,106 |
| Loss from operations | (115,235) | (66,074) | (41,315) | (35,393) | (26,683) |
| Other income (expenses), net | (5,923) | 3,071 | 317 | 11 | (62) |
| Loss before provision for income taxes | (121,158) | (63,003) | (40,998) | (35,382) | (26,745) |
| Provision for income taxes | (791) | (705) | (326) | (122) | (13) |
| Net loss | (121,949) | (63,708) | (41,324) | (35,504) | (26,758) |
| Deemed dividend to investors in relation to tender offer | — | — | — | (3,392) | — |
| Net loss attributable to common stockholders | $ (121,949) | $ (63,708) | $ (41,324) | $ (38,896) | $ (26,758) |
| Net loss per share attributable to common stockholders, basic and diluted | $ (1.26) | $ (0.70) | $ (0.78) | $ (2.19) | $ (1.58) |
| Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted | 97,130,339 | 91,224,607 | 53,116,675 | 17,746,526 | 16,900,124 |
| **Key Business Metrics:** | | | | | |
| Number of Active Customer Accounts(3) (*as of end date of period*) | 64,286 | 48,979 | 36,606 | 25,347 | 16,631 |
| Base Revenue(4) | $ 593,017 | $ 365,490 | $ 245,548 | $ 136,851 | $ 75,697 |
| *Base Revenue Growth Rate* | *62%* | *49%* | *79%* | *81%* | *81%* |
| Dollar-Based Net Expansion Rate(5) | 140% | 128% | 161% | 155% | 153% |

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

| | Year Ended December 31, 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| | (In thousands) | | | | |
| Cost of revenue | $ 1,126 | $ 650 | $ 291 | $ 65 | $ 39 |
| Research and development | 42,277 | 22,808 | 12,946 | 4,046 | 1,577 |
| Sales and marketing | 23,616 | 9,822 | 4,972 | 2,389 | 1,335 |
| General and administrative | 26,254 | 16,339 | 6,016 | 2,377 | 1,027 |
| Total | $ 93,273 | $ 49,619 | $ 24,225 | $ 8,877 | $ 3,978 |

(2) Includes amortization of acquired intangibles as follows:

| | Year Ended December 31, 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| | (In thousands) | | | | |
| Cost of revenue | $ 5,656 | $ 4,644 | $ 619 | $ 239 | $ — |
| Research and development | 22 | 139 | 151 | 130 | — |
| Sales and marketing | 1,117 | 753 | — | — | — |
| General and administrative | 375 | 84 | 110 | 95 | — |
| Total | $ 7,170 | $ 5,620 | $ 880 | $ 464 | $ — |

(3) See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics—Number of Active Customer Accounts."

(4) See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics—Base Revenue."

(5) See Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Business Metrics—Dollar-Based Net Expansion Rate."

| | As of December 31, 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|
| | (In thousands) | | | | |
| **Consolidated Balance Sheet Data:** | | | | | |
| Cash and cash equivalents | $ 487,215 | $ 115,286 | $ 305,665 | $ 108,835 | $ 32,627 |
| Marketable securities | 261,128 | 175,587 | — | — | — |
| Working capital | 735,138 | 274,738 | 279,676 | 96,032 | 23,151 |
| Property and equipment, net | 63,534 | 50,541 | 37,552 | 14,058 | 6,751 |
| Total assets | 1,028,710 | 449,782 | 412,694 | 157,516 | 54,974 |
| Total stockholders' equity | $ 438,235 | $ 359,846 | $ 329,447 | $ 116,625 | $ 31,194 |

***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 GAAP results. Non-GAAP financial information is presented for supplemental informational purposes only, and should not be considered a substitute for financial information presented in accordance with generally accepted accounting principles, 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 generally accepted accounting principles. Investors 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 stock-based compensation and amortization of acquired intangibles.

| | Year Ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| | (In thousands) | | | | |
| **Reconciliation:** | | | | | |
| Gross profit | $ 349,226 | $ 216,125 | $ 156,815 | $ 92,465 | $ 47,423 |
| Non-GAAP adjustments: | | | | | |
| Stock-based compensation | 1,126 | 650 | 291 | 65 | 39 |
| Amortization of acquired intangibles | 5,656 | 4,644 | 619 | 239 | — |
| Non-GAAP gross profit | $ 356,008 | $ 221,419 | $ 157,725 | $ 92,769 | $ 47,462 |
| Non-GAAP gross margin | 55% | 55% | 57% | 56% | 53% |

**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, stock-based compensation, amortization of acquired intangibles, stock repurchases, acquisition-related expenses, release of tax liability upon obligation settlement, charitable contribution, legal settlements/accruals, gain on lease termination and payroll taxes related to stock-based compensation.

| | Year Ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| | (In thousands) | | | | |
| **Reconciliation:** | | | | | |
| Operating expenses | $ 464,461 | $ 282,199 | $ 198,130 | $ 127,858 | $ 74,106 |
| Non-GAAP adjustments: | | | | | |
| Stock-based compensation | (92,147) | (48,969) | (23,934) | (8,812) | (3,939) |
| Amortization of acquired intangibles | (1,514) | (976) | (261) | (225) | — |
| Stock repurchase | — | — | — | (1,965) | — |
| Acquisition-related expenses | (4,481) | (310) | (499) | (1,165) | — |
| Release of tax liability upon obligation settlement | — | 13,365 | 805 | — | — |
| Charitable contribution | (7,121) | (1,172) | (3,860) | — | — |
| Legal settlements/accruals | (1,710) | — | — | — | — |
| Gain on lease termination | — | 295 | — | — | — |
| Payroll taxes related to stock-based compensation | (5,617) | (2,950) | (434) | — | — |
| Non-GAAP operating expenses | $ 351,871 | $ 241,482 | $ 169,947 | $ 115,691 | $ 70,167 |

**Non-GAAP Loss from Operations and Non-GAAP Operating Margin.** For the periods presented, we define non-GAAP loss from operations and non-GAAP operating margin as GAAP loss from operations and GAAP operating margin, respectively, adjusted to exclude, as applicable, stock-based compensation, amortization of acquired intangibles, stock repurchases, acquisition-related expenses, release of tax liability upon obligation settlement, charitable contribution, legal settlements/accruals, gain on lease termination and payroll taxes related to stock-based compensation.

| | Year Ended December 31, | | | | |
|---|---|---|---|---|---|
| | 2018 | 2017 | 2016 | 2015 | 2014 |
| | | | (In thousands) | | |
| **Reconciliation:** | | | | | |
| Loss from operations | $ (115,235) | $ (66,074) | $ (41,315) | $ (35,393) | $ (26,683) |
| Non-GAAP adjustments: | | | | | |
| Stock-based compensation | 93,273 | 49,619 | 24,225 | 8,877 | 3,978 |
| Amortization of acquired intangibles | 7,170 | 5,620 | 880 | 464 | — |
| Stock repurchase | — | — | — | 1,965 | — |
| Acquisition-related expenses | 4,481 | 310 | 499 | 1,165 | — |
| Release of tax liability upon obligation settlement | — | (13,365) | (805) | — | — |
| Charitable contribution | 7,121 | 1,172 | 3,860 | — | — |
| Legal settlements/accruals | 1,710 | — | — | — | — |
| Gain on lease termination | — | (295) | — | — | — |
| Payroll taxes related to stock-based compensation | 5,617 | 2,950 | 434 | — | — |
| Non-GAAP loss from operations | $ 4,137 | $ (20,063) | $ (12,222) | $ (22,922) | $ (22,705) |
| Non-GAAP operating margin | 1% | (5)% | (4)% | (14)% | (26)% |

### 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 I, Item 1A, "Risk Factors" in this Annual Report on Form 10-K. Our fiscal year ends on December 31.*

## Overview

We are the leader in the Cloud Communications Platform category. We enable developers to build, scale and operate real-time communications within their software applications via our simple-to-use Application Programming Interfaces ("APIs"). The power, flexibility, and reliability offered by our software building blocks empowers companies of virtually every shape and size to build world-class engagement into their customer experience.

Our platform consists of three layers: our Engagement Cloud, Programmable Communications Cloud and Super Network. Our Engagement Cloud software is designed to address specific use cases like account security and contact centers and is a set of APIs that handles the higher level communication logic needed for nearly every type of customer engagement. These APIs are focused on the business challenges that a developer is looking to address, allowing our customers to more quickly and easily build better ways to engage with their customers throughout their journey. Our Programmable Communications Cloud software is a set of APIs that enables developers to embed voice, messaging and video capabilities into their applications. The Programmable Communications Cloud is designed to support almost all the fundamental ways humans communicate, unlocking innovators to address just about any communication market. The Super Network is our software layer that allows our customers' software to communicate with connected devices globally. It interconnects with communications networks 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 more foundational components of our platform, like phone numbers.

As of December 31, 2018, our customers' applications that are embedded with our products could reach users via voice, messaging and video in nearly every country in the world, and our platform offered customers local telephone numbers in over 100 countries and text-to-speech functionality in 26 languages. We support our global business through 27 cloud data centers in nine regions around the world and have developed contractual relationships with network service providers globally.

Our business model is primarily focused on reaching and serving the needs of software developers, who we believe are becoming increasingly influential in technology decisions in a wide variety of companies. We call this approach our Business Model for Innovators, which empowers developers by reducing friction and upfront costs, encouraging experimentation, and enabling developers to grow as customers as their ideas succeed. We established and maintain our leadership position by engaging directly with, and cultivating, our developer community, which has led to the rapid adoption of our platform. We reach developers through community events and conferences, including our SIGNAL developer conferences, to demonstrate how every developer can create differentiated applications incorporating communications using our products.

Once developers are introduced to our platform, we provide them with a low friction trial experience. By accessing our easy-to-adopt APIs, extensive self-service documentation and customer support team, developers build our products into their applications and then test such applications through free trials. Once they have decided to use our products beyond the initial free trial period, customers provide their credit card information and only pay for the actual usage of our products. Historically, we have acquired the substantial majority of our customers through this self-service model. As customers expand their usage of our platform, our relationships with them often evolve to include business leaders within their organizations. Once our customers reach a certain spending level with us, we support them with account executives or customer success advocates within our sales organization to ensure their satisfaction and expand their usage of our products.

We also supplement our self-service model with a sales effort aimed at engaging larger potential customers, strategic leads and existing customers through a direct sales approach. To help increase our awareness in the enterprise, we have expanded our marketing efforts through programs like our Twilio Engage roadshow were we seek to bring business leaders and developers together to discuss the future of customer engagement. We have developed products to support this effort as well, like the Twilio Enterprise Plan, which provides capabilities for advanced security, access management and granular administration. Our sales organization targets technical leaders and business leaders who are seeking to leverage software to drive competitive differentiation. As we educate these leaders on the benefits of developing applications incorporating our products to differentiate their business, they often consult with their developers regarding implementation. We believe that developers are often advocates for our products as a result of our developer-focused approach. Our sales organization includes sales development, inside sales, field sales and sales engineering personnel.

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 sales force and marketing automation) or our consulting partners who provide consulting and development services for organizations that have limited software development expertise to build our platform into their software applications.

We generate the substantial majority of our revenue from customers based on their usage of our software products that they have incorporated into their applications. In addition, customers typically purchase one or more telephone numbers from us, for which we charge a monthly flat fee per number. Some customers also choose to purchase various levels of premium customer support for a monthly fee. Customers that register in our self-service model typically pay upfront via credit card and draw down their balance as they purchase or use our products. Most of our customers draw down their balance in the same month they pay up front and, as a result, our deferred revenue and customer deposits liability at any particular time is not a meaningful indicator of future revenue. As our customers' usage grows, some of our customers enter into contracts and are invoiced monthly in arrears. Many of these customer contracts have terms of 12 months and typically include some level of minimum revenue commitment. Most customers with minimum revenue commitment contracts generate a significant amount of revenue in excess of their minimum revenue commitment in any period. Historically, the aggregate minimum commitment revenue from customers with whom we have contracts has constituted a minority of our revenue in any period, and we expect this to continue in the future.

Our developer-focused products are delivered to customers and users through our Super Network, which uses software to optimize communications on our platform. We interconnect with communications networks globally to deliver our products, and therefore we have arrangements with network service providers in many regions in the world. Historically, a substantial majority of our cost of revenue has been network service provider fees. We continue to optimize our network service provider coverage and connectivity through continuous improvements in routing and sourcing in order to lower the usage expenses we incur for network service provider fees. As we benefit from our platform optimization efforts, we sometimes pass these savings on to customers in the form of lower usage prices on our products in an effort to drive increased usage and expand the reach and scale of our platform. In the near term, we intend to operate our business to expand the reach and scale of our platform and to grow our revenue, rather than to maximize our gross margins.

We have achieved significant growth in recent periods. In the years ended December 31, 2018, 2017 and 2016, our revenue was $650.1 million, $399.0 million and $277.3 million, respectively. In the years ended December 31, 2018, 2017 and 2016, our 10 largest Active Customer Accounts generated an aggregate of 18%, 19% and 30%, respectively, of our total revenue. For each of the years ended December 31, 2018, 2017 and 2016, among our 10 largest Active Customer Accounts we had three Variable Customer Accounts, respectively, representing 8%, 8% and 11% of our total revenue, respectively. In the years ended December 31, 2018, 2017 and 2016, our Base Revenue was $593.0 million, $365.5 million and $245.5 million, respectively, and our net loss was $121.9 million, $63.7 million and $41.3 million, respectively. See the section titled "—Key Business Metrics—Base Revenue" for a discussion of Base Revenue.

***Acquisition of SendGrid***

In February 2019, we acquired all outstanding shares of capital stock of SendGrid, Inc.("SendGrid"), the leading email API platform, by issuing 23.4 million shares of our Class A common stock with total value of $2.6 billion. Pursuant to the Agreement and Plan of Merger and Reorganization, as amended, each outstanding share of SendGrid common stock converted into a 0.485 of a share of our Class A common stock. In the year ended December 31, 2018, we incurred $3.6 million in expenses related to this acquisition.

Unless otherwise noted, the following discussion and analysis of our results of operations and our liquidity and capital resources focuses on our existing operations exclusive of the impact of the acquisition of SendGrid. Any forward-looking statements contained herein do not take into account the impact of this acquisition.

## Key Business Metrics

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Number of Active Customer Accounts (*as of end date of period*) | 64,286 | 48,979 | 36,606 |
| Base Revenue (*in thousands*) | $ 593,017 | $ 365,490 | $ 245,548 |
| *Base Revenue Growth Rate* | 62% | 49% | 79% |
| Dollar-Based Net Expansion Rate | 140% | 128% | 161% |

***Number of Active Customer Accounts.*** We believe that the number of our Active Customer Accounts is an important indicator of the growth of our business, the market acceptance of our platform and future revenue trends. 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. We believe that the use of our platform by our 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. 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.

In the years ended December 31, 2018, 2017 and 2016, revenue from Active Customer Accounts represented over 99% of total revenue in each period.

***Base Revenue.*** We monitor Base Revenue as one of the more reliable indicators of future revenue trends. Base Revenue consists of all revenue other than revenue from large Active Customer Accounts that have never entered into 12-month minimum revenue commitment contracts with us, which we refer to as Variable Customer Accounts. While almost all of our customer accounts exhibit some level of variability in the usage of our products, based on our experience, we believe that Variable Customer Accounts are more likely to have significant fluctuations in usage of our products from period to period, and therefore that revenue from Variable Customer Accounts may also fluctuate significantly from period to period. This behavior is best evidenced by the decision of such customers not to enter into contracts with us that contain minimum revenue commitments, even though they may spend significant amounts on the use of our products and they may be foregoing more favorable terms often available to customers that enter into committed contracts with us. This variability adversely affects our ability to rely upon revenue from Variable Customer Accounts when analyzing expected trends in future revenue.

For historical periods through March 31, 2016, we defined a Variable Customer Account as an Active Customer Account that (i) had never signed a minimum revenue commitment contract with us for a term of at least 12 months and (ii) had met or exceeded 1% of our revenue in any quarter in the periods presented through March 31, 2016. To allow for consistent period-to-period comparisons, in the event a customer account qualified as a Variable Customer Account as of March 31, 2016, or a previously Variable Customer Account ceased to be an Active Customer Account as of such date, we included such customer account as a Variable Customer Account in all periods presented. For reporting periods starting with the three months ended June 30, 2016, we define a Variable Customer Account as a customer account that (a) has been categorized as a Variable Customer Account in any prior quarter, as well as (b) any new customer account that (i) is with a customer that has never signed a minimum revenue commitment contract with us for a term of at least 12 months and (ii) meets or exceeds 1% of our revenue in a quarter. Once a customer account is deemed to be a Variable Customer Account in any period, it remains a Variable Customer Account in subsequent periods unless such customer enters into a minimum revenue commitment contract with us for a term of at least 12 months.

In the years ended December 31, 2018, 2017 and 2016, we had six, six and eight Variable Customer Accounts, which represented 9%, 8% and 11%, respectively, of our total revenue.

***Dollar-Based Net Expansion Rate.*** 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 the platform. An important way in which we track our performance in this area is by measuring the Dollar-Based Net Expansion Rate for our Active Customer Accounts, other than our Variable Customer Accounts. Our Dollar-Based Net Expansion Rate increases when such Active Customer Accounts increase usage of a product, extend 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 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, for reporting periods starting with the three months ended December 31, 2016, when we identify a significant customer organization (defined as a single customer organization generating more than 1% of our 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. We believe measuring our Dollar-Based Net Expansion Rate on revenue generated from our Active Customer Accounts, other than our Variable Customer Accounts, provides a more meaningful indication of the performance of our efforts to increase revenue from existing customers.

Our Dollar-Based Net Expansion Rate compares the revenue from Active Customer Accounts, other than Variable Customer Accounts, 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, other than Variable Customer Accounts, that were Active Customer Accounts 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.

***Net Loss Carryforwards***

At December 31, 2018, we had federal, state and foreign net operating loss carryforwards of approximately $452.7 million, $347.1 million and $8.1 million respectively, and federal and state tax credits of approximately $26.7 million and $19.9 million, respectively. If not utilized, the federal and state loss carryforwards will expire at various dates beginning in 2026 and 2029, respectively, and the federal tax credits will expire at various dates beginning in 2029. The state tax credits can be carried forward indefinitely. At present, we believe that it is more likely than not that the federal and state net operating loss and credit carryforwards will not be realized. Accordingly, a full valuation allowance has been established for these tax attributes, as well as the rest of the federal and state deferred tax assets.

## Key Components of Statements of Operations

***Revenue.*** We derive our revenue primarily from usage-based fees earned from customers using the software products within our Engagement Cloud and Programmable Communications Cloud. These usage-based software products include offerings, such as Programmable Voice, Programmable Messaging and Programmable Video. Some examples of the usage-based fees for which we charge include minutes of call duration activity for our Programmable Voice products, number of text messages sent or received using our Programmable Messaging products and number of authentications for our Account Security products. In the years ended December 31, 2018, 2017 and 2016, we generated 84%, 83% and 83% of our revenue, respectively, from usage-based fees. We also earn monthly flat fees from certain fee-based products, such as telephone numbers, short codes and customer support.

Customers typically pay upfront via credit card in monthly prepaid amounts and draw down their balances as they purchase or use our products. As customers grow their usage of our products they automatically receive tiered usage discounts. Our larger customers often enter into contracts, for at least 12 months that contain minimum revenue commitments, which may contain more favorable pricing. Customers on such contracts typically are invoiced monthly in arrears for products used.

Amounts that have been charged via credit card or invoiced are recorded in accounts receivable and in revenue, deferred revenue or customer deposits, depending on whether the revenue recognition criteria have been met. Given that our credit card prepayment amounts tend to be approximately equal to our credit card consumption amounts in each period, and that we do not have many invoiced customers on pre-payment contract terms, our deferred revenue and customer deposits liability at any particular time is not a meaningful indicator of future revenue.

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

***Cost of Revenue and Gross Margin.*** Cost of revenue consists primarily of fees paid to network service providers. Cost of revenue also includes cloud infrastructure fees, personnel costs, such as salaries and stock-based compensation for our customer support employees, and non-personnel costs, such as amortization of capitalized internal use software development costs and amortization of acquired intangibles. 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 require us to pay fees based on our server capacity consumption.

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 ability to manage our network service provider and cloud infrastructure-related fees, the mix of U.S. revenue compared to international revenue, the timing of amortization of capitalized software development costs and acquired intangibles and the extent to which we periodically choose to pass on our cost savings from platform optimization efforts to our customers in the form of lower usage prices.

***Operating Expenses.*** The most significant components of operating expenses are personnel costs, which consist of salaries, benefits, bonuses and stock-based compensation. We also incur other non-personnel costs related to our general overhead expenses. We expect that our operating costs will increase in absolute dollars as we add additional employees and invest in our infrastructure to grow our business.

*Research and Development.* Research and development expenses consist primarily of personnel costs, outsourced engineering services, cloud infrastructure fees for staging and development, 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.

We continue to focus our research and development efforts on adding new features and products, including new use cases, improving our platform and increasing the functionality of our existing products.

*Sales and Marketing.* Sales and marketing expenses consist primarily of personnel costs, including commissions for our sales employees. Sales and marketing expenses also include expenditures related to advertising, marketing, our brand awareness activities and developer evangelism, costs related to our

SIGNAL developer conferences, credit card processing fees, professional services fees and an allocation of our general overhead expenses.

We focus our sales and marketing efforts on generating awareness of our company, platform and products through our developer evangelist team and self-service model, creating sales leads and establishing and promoting our brand, both domestically and internationally. We plan to continue investing in sales and marketing by increasing our sales and marketing headcount, supplementing our self-service model with an enterprise sales approach, expanding our sales channels, driving our go-to-market strategies, building our brand awareness and sponsoring additional marketing events.

*General and Administrative.* General and administrative expenses consist primarily of personnel costs for our accounting, finance, legal, human resources and administrative support personnel and executives. General and administrative expenses also include costs related to business acquisitions, legal and other professional services fees, sales and other taxes, depreciation and amortization and an allocation of our general overhead expenses. We expect that we will incur costs associated with supporting the growth of our business and to meet the increased compliance requirements associated with both our international expansion and our operation as, a public company.

Our general and administrative expenses include a certain amount of sales and other taxes to which we are subject based on the manner we sell and deliver our products. Prior to March 2017, we did not collect such taxes from our customers and recorded such taxes as general and administrative expenses. Effective March 2017, we began collecting these taxes from customers in certain jurisdictions and added more jurisdictions throughout 2018 where we are now collecting these taxes. We continue expanding the number of jurisdictions where we will be collecting these taxes in the future. We expect that these expenses will decline in future years as we continue collecting these taxes from our customers in more jurisdictions, which would reduce our rate of ongoing accrual.

***Provision for Income Taxes.*** Our income tax provision or benefit for interim periods is determined using an estimate of our annual effective tax rate, adjusted for discrete items occurring in the quarter. The primary difference between our effective tax rate and the federal statutory rate relates to the net operating losses in jurisdictions with a valuation allowance or a zero tax rate.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (Tax Act). The Tax Act reduces the U.S. statutory corporate tax rate to 21%, effective January 1, 2018. Consequently, we recorded a decrease to the Company's federal deferred tax assets of $28.0 million, which was fully offset by a reduction of our valuation allowance for the year ended December 31, 2017. The other provisions of the Tax Act, including the one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings, did not have a material impact on our financial statements as of December 31, 2018.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (SAB 118), which allowed companies to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. Our accounting for the Tax Act is complete and we did not have any signification adjustments to provisional amounts recorded as of December 31, 2017.

The Tax Act creates a new requirement that certain income (i.e., GILTI) earned by controlled foreign corporations (CFCs) must be included currently in the gross income of the CFCs' U.S. shareholder. Under U.S. GAAP, we are allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the "period cost method") or (2) factoring such amounts into the measurement of our deferred taxes (the "deferred method"). We selected the period cost method.

## Results of Operations

The following tables set forth our results of operations for the periods presented and as a percentage of our total revenue for those periods. The period-to-period comparison of our historical results are not necessarily indicative of the results that may be expected in the future.

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| | (In thousands, except share and per share data) | | |
| **Consolidated Statements of Operations Data:** | | | |
| Revenue | $ 650,067 | $ 399,020 | $ 277,335 |
| Cost of revenue[1][2] | 300,841 | 182,895 | 120,520 |
| Gross profit | 349,226 | 216,125 | 156,815 |
| Operating expenses: | | | |
| Research and development[1][2] | 171,358 | 120,739 | 77,926 |
| Sales and marketing[1][2] | 175,555 | 100,669 | 65,267 |
| General and administrative[1][2] | 110,427 | 59,619 | 51,077 |
| Charitable contribution | 7,121 | 1,172 | 3,860 |
| Total operating expenses | 464,461 | 282,199 | 198,130 |
| Loss from operations | (115,235) | (66,074) | (41,315) |
| Other income (expenses), net | (5,923) | 3,071 | 317 |
| Loss before provision for income taxes | (121,158) | (63,003) | (40,998) |
| Provision for income taxes | (791) | (705) | (326) |
| Net loss attributable to common stockholders | $ (121,949) | $ (63,708) | $ (41,324) |
| Net loss per share attributable to common stockholders, basic and diluted | $ (1.26) | $ (0.70) | $ (0.78) |
| Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted | 97,130,339 | 91,224,607 | 53,116,675 |

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

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| | (In thousands) | | |
| Cost of revenue | $ 1,126 | $ 650 | $ 291 |
| Research and development | 42,277 | 22,808 | 12,946 |
| Sales and marketing | 23,616 | 9,822 | 4,972 |
| General and administrative | 26,254 | 16,339 | 6,016 |
| Total | $ 93,273 | $ 49,619 | $ 24,225 |

(2) Includes amortization of acquired intangibles as follows:

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| | (In thousands) | | |
| Cost of revenue | $ 5,656 | $ 4,644 | $ 619 |
| Research and development | 22 | 139 | 151 |
| Sales and marketing | 1,117 | 753 | — |
| General and administrative | 375 | 84 | 110 |
| Total | $ 7,170 | $ 5,620 | $ 880 |

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| **Consolidated Statements of Operations, as a percentage of revenue:**** | | | |
| Revenue | 100% | 100% | 100% |
| Cost of revenue | 46 | 46 | 43 |
| Gross profit | 54 | 54 | 57 |
| Operating expenses: | | | |
| Research and development | 26 | 30 | 28 |
| Sales and marketing | 27 | 25 | 24 |
| General and administrative | 17 | 15 | 18 |
| Charitable contribution | 1 | * | 1 |
| Total operating expenses | 71 | 71 | 71 |
| Loss from operations | (18) | (17) | (15) |
| Other income (expenses), net | (1) | 1 | * |
| Loss before provision for income taxes | (19) | (16) | (15) |
| Provision for income taxes | * | * | * |
| Net loss attributable to common stockholders | (19)% | (16)% | (15)% |

* Less than 0.5% of revenue.

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

## Comparison of the Fiscal Years Ended December 31, 2018, 2017 and 2016

***Revenue***

| | Year Ended December 31, 2018 | 2017 | 2016 | 2017 to 2018 Change | | 2016 to 2017 Change | |
|---|---|---|---|---|---|---|---|
| | (Dollars in thousands) | | | | | | |
| Base revenue | $ 593,017 | $ 365,490 | $ 245,548 | $ 227,527 | 62% | $ 119,942 | 49% |
| Variable revenue | 57,050 | 33,530 | 31,787 | 23,520 | 70% | 1,743 | 5% |
| Total revenue | $ 650,067 | $ 399,020 | $ 277,335 | $ 251,047 | 63% | $ 121,685 | 44% |

*2018 Compared to 2017*

In 2018, Base Revenue increased by $227.5 million, or 62%, compared to the same period last year, and represented 91% and 92% of total revenue in 2018 and 2017, respectively. This increase was primarily attributable to an increase in the usage of our products, particularly our Programmable Messaging products and Programmable Voice products, and the adoption of additional products by our existing customers. This increase was partially offset by pricing decreases that we have implemented over time in the form of lower usage prices, in an effort to increase the reach and scale of our platform. The changes in usage and price in the year ended December 31, 2018 were reflected in our Dollar-Based Net Expansion Rate of 140%. The increase in usage was also attributable to a 31% increase in the number of Active Customer Accounts, from 48,979 as of December 31, 2017, to 64,286 as of December 31, 2018.

In the year ended December 31, 2018, Variable Revenue increased by $23.5 million, or 70%, compared to the same period last year, and represented 9% and 8% of total revenue in the year ended December 31, 2018 and 2017, respectively. This increase was primarily attributable to the increase in the usage of products by our existing Variable Customer Accounts.

U.S. revenue and international revenue represented $484.8 million, or 75%, and $165.3 million, or 25%, respectively, of total revenue in 2018, compared to $308.6 million, or 77%, and $90.4 million, or 23%, respectively, of total revenue in 2017. The increase in international revenue was attributable to the growth in usage of our products, particularly our Programmable Messaging products and Programmable Voice products, by our existing international Active Customer Accounts, and a 57% 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.

*2017 Compared to 2016*

In 2017, Base Revenue increased by $120.0 million, or 49%, compared to 2016, and represented 92% and 89% of total revenue in 2017 and 2016, respectively. This increase was primarily attributable to an increase in the usage of all our products, particularly our Programmable Messaging products and Programmable Voice products, and the adoption of additional products by our existing customers. This increase was partially offset by pricing decreases that we have implemented over time in the form of lower usage prices, in an effort to increase the reach and scale of our platform. The changes in usage and price in 2017 were reflected in our Dollar-Based Net Expansion Rate of 128%. The increase in usage was also attributable to a 34% increase in the number of Active Customer Accounts, from 36,606 as of December 31, 2016 to 48,979 as of December 31, 2017. Revenue from Uber, our largest Base Customer, decreased in 2017, due to a combination of product usage decreases and certain price adjustments that were made by us as a result of Uber's high volume growth.

In 2017, Variable Revenue increased by $1.7 million, or 5%, compared to 2016, and represented 8% and 11% of total revenue in 2017 and 2016, respectively. This increase was primarily attributable to the increase in the usage of products by our existing Variable Customer Accounts, partially offset by the decrease in number of Variable Customer Accounts from eight to six.

U.S. revenue and international revenue represented $308.6 million, or 77%, and $90.4 million, or 23%, respectively, of total revenue in 2017, compared to $233.9 million, or 84%, and $43.4 million, or 16%, respectively, of total revenue in 2016. The increase in international revenue was attributable to the growth in usage of our products, particularly our Programmable Messaging products and Programmable Voice products, by our existing international Active Customer Accounts; a 39% increase in the number of international Active Customer Accounts, excluding the impact from our Beepsend acquisition, driven in part by our focus on expanding our sales to customers outside of the United States; and our recent acquisition. We opened one new office outside of the United States in 2017.

***Cost of Revenue and Gross Margin***

| | Year Ended December 31, 2018 | 2017 | 2016 | 2017 to 2018 Change | | 2016 to 2017 Change | |
|---|---|---|---|---|---|---|---|
| | (Dollars in thousands) | | | | | | |
| Cost of revenue | $ 300,841 | $ 182,895 | $ 120,520 | $ 117,946 | 64% | $ 62,375 | 52% |
| Gross margin | 54% | 54% | 57% | | | | |

*2018 Compared to 2017*

In 2018, cost of revenue increased by $117.9 million, or 64%, compared to the same period last year. The increase in cost of revenue was primarily attributable to a $104.4 million increase in network service providers' costs and a $7.6 million increase in cloud infrastructure fees, both to support the growth in usage of our products.

In 2018, gross margin percentage remained stable compared to 2017. Higher network service provider costs related to foreign currency fluctuations, certain price adjustments that were made by us in 2017 as a result of the high volume growth of a large customer, an increasing mix of international product usage, and an increase in network service provider fees in certain geographies, were largely offset by operational improvements and product mix.

*2017 Compared to 2016*

In 2017, cost of revenue increased by $62.4 million, or 52%, compared to 2016. The increase in cost of revenue was primarily attributable to a $51.3 million increase in network service providers' costs, a $4.8 million increase in cloud infrastructure fees to support the growth in usage of our products and a $5.5 million increase in amortization expense for internal use software.

In 2017, gross margin declined primarily as a result of an increasing mix of international product usage and certain price adjustments that were made by us as a result of Uber's high volume growth.

***Operating Expenses***

| | Year Ended December 31, 2018 | 2017 | 2016 | 2017 to 2018 Change | | 2016 to 2017 Change | |
|---|---|---|---|---|---|---|---|
| | (Dollars in thousands) | | | | | | |
| Research and development | $ 171,358 | $ 120,739 | $ 77,926 | $ 50,619 | 42% | $ 42,813 | 55% |
| Sales and marketing | 175,555 | 100,669 | 65,267 | 74,886 | 74% | 35,402 | 54% |
| General and administrative | 110,427 | 59,619 | 51,077 | 50,808 | 85% | 8,542 | 17% |
| Charitable contribution | 7,121 | 1,172 | 3,860 | 5,949 | 508% | (2,688) | (70)% |
| Total operating expenses | $ 464,461 | $ 282,199 | $ 198,130 | $ 182,262 | 65% | $ 84,069 | 42% |

*2018 Compared to 2017*

In 2018, research and development expenses increased by $50.6 million, or 42%, compared to the same period last year. The increase was primarily attributable to a $37.0 million increase in personnel costs, net of a $3.3 million increase in capitalized software development costs, largely as a result of an 32% average increase in our research and development headcount, as we continued to focus on enhancing our existing products and introducing new products, as well as enhancing product management and other technical functions. The increase was also due to a $2.9 million increase in cloud infrastructure fees to support the staging and development of our products, a $2.1 million increase in professional services fees, a $1.3 million increase in outsourced engineering services and a $1.8 million increase in amortization expense.

In 2018, sales and marketing expenses increased by $74.9 million, or 74%, compared to the same period last year. The increase was primarily attributable to a $48.6 million increase in personnel costs, largely as a result of a 52% average increase in sales and marketing headcount as we continued to expand our sales efforts in the United States and internationally, a $5.7 million increase in advertising expenses, $4.7 million increase related to our annual developer conference SIGNAL, a $3.5 million increase in the expenses related to brand awareness programs and $2.3 million increase in credit card fees due to increased transaction volumes.

In 2018, general and administrative expenses increased by $50.8 million, or 85%, compared to the same period last year. The increase was partially attributable to the non-recurrence of $13.4 million release of previously accrued tax liability upon certain obligation settlements and estimate revisions. The remaining increase was primarily attributable to a $18.8 million increase in personnel costs, largely as a result of a 49% average increase in general and administrative headcount to support the growth of our business domestically and internationally and a $8.4 million increase in professional services fees primarily related to our operations as a public company and our on-going litigation matters, including legal settlements/accruals, and a $4.7 million increase in professional expenses specifically related to our business acquisitions as described in Note 5 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In 2018, charitable contributions expenses increased by $5.9 million, or 508%, compared to the same period last year, due to several donations that Twilio.org made to independent organizations consistent with its philanthropic goals.

*2017 Compared to 2016*

In 2017, research and development expenses increased by $42.8 million, or 55%, compared to 2016. The increase was primarily attributable to a $30.3 million increase in personnel costs, net of a $7.7 million increase in capitalized software development costs, largely as a result of a 37% average increase of our research and development headcount, as we continued to focus on enhancing our existing products and introducing new products, as well as enhancing product management and other technical functions. The increase was also due in part to a $3.0 million increase in software subscription expense, a $2.7 million increase in cloud infrastructure fees to support the staging and development of our products, a $1.5 million increase in outsourced engineering services, a $1.4 million increase in amortization expense related to our internal-use software and the intangible assets acquired through business combinations, a $0.7 million increase related to employee travel and a $0.7 million increase in professional fees.

In 2017, sales and marketing expenses increased by $35.4 million, or 54%, compared to 2016. The increase was primarily attributable to a $25.5 million increase in personnel costs, largely as a result of a 42% average increase in sales and marketing headcount as we continued to expand our sales efforts in the United States and internationally, a $1.9 million increase in credit card processing fees due to increased volumes, a $1.4 million increase in advertising expenses, a $1.2 million increase in professional services fees, a $1.2 million increase in employee travel expenses, a $1.1 million increase in software subscription expense, a $1.2 million increase in depreciation and amortization and a $0.4 million increase related to our SIGNAL developer conferences.

In 2017, general and administrative expenses increased by $8.5 million, or 17%, compared to 2016. The increase was primarily attributable to a $16.1 million increase in personnel costs, largely as a result of a 33% average increase in general and administrative headcount to support the growth of our business domestically and internationally, a $4.3 million increase in professional services fees primarily related to our operations as a public company and our on-going litigation matters, a $2.6 million increase in facilities and insurance costs, a $0.5 million increase related to software licenses. These increases were partially offset by the release of $13.4 million tax liability upon certain obligation settlements and estimate revisions, discussed in detail in Note 11 (d) of the consolidated financial statements included elsewhere in this Annual Report on Form 10-K, and a $3.4 million decrease in the state and other taxes expense as we began collecting those taxes in certain jurisdictions starting in March 2017, which allowed us to reduce the ongoing rate of accrual.

In 2017, charitable contributions expenses decreased by $2.7 million, or 70%, compared to the same period last year. During 2017, Twilio.org donated 45,383 shares of Class A common stock with a value of $1.2 million to an independent organizations consistent with its philanthropic goals.

### Quarterly Results of Operations

The following tables set forth our unaudited quarterly statements of operations data for each of the eight quarters ended December 31, 2018, as well as the percentage that each line item represents of our revenue for each quarter presented. The information for each quarter has been prepared on a basis consistent with our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K, and reflect, in the opinion of management, all adjustments of a normal, recurring nature that are necessary for a fair presentation of the financial information contained in those statements. Our historical results are not necessarily indicative of the results that may be expected in the future. The following quarterly financial data should be read in conjunction with our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

| | Three Months Ended | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | March 31, 2017 | June 30, 2017 | Sept. 30, 2017 | Dec. 31, 2017 | March 31, 2018 | June 30, 2018 | Sept. 30, 2018 | Dec. 31, 2018 |
| | (Unaudited, in thousands) | | | | | | | |
| **Consolidated Statements of Operations:** | | | | | | | | |
| Revenue | $ 87,372 | $ 95,870 | $ 100,542 | $ 115,236 | $ 129,116 | $ 147,754 | $ 168,895 | $ 204,302 |
| Cost of revenue(1)(2) | 37,286 | 42,333 | 48,254 | 55,022 | 59,582 | 67,940 | 77,031 | 96,288 |
| Gross profit | 50,086 | 53,537 | 52,288 | 60,214 | 69,534 | 79,814 | 91,864 | 108,014 |
| Operating expenses: | | | | | | | | |
| Research and development(1)(2) | 26,522 | 29,714 | 31,674 | 32,829 | 37,576 | 39,811 | 42,340 | 51,631 |
| Sales and marketing(1)(2) | 21,116 | 26,153 | 25,778 | 27,622 | 32,822 | 37,749 | 45,949 | 59,035 |
| General and administrative(1)(2) | 17,203 | 4,740 | 18,867 | 18,809 | 23,393 | 24,212 | 28,433 | 34,389 |
| Charitable contribution | — | — | — | 1,172 | — | — | 175 | 6,946 |
| Total operating expenses | 64,841 | 60,607 | 76,319 | 80,432 | 93,791 | 101,772 | 116,897 | 152,001 |
| Loss from operations | (14,755) | (7,070) | (24,031) | (20,218) | (24,257) | (21,958) | (25,033) | (43,987) |
| Other income (expense), net | 498 | 471 | 1,000 | 1,102 | 665 | (1,898) | (1,939) | (2,751) |
| Loss before (provision) benefit for income taxes | (14,257) | (6,599) | (23,031) | (19,116) | (23,592 | (23,856) | (26,972) | (46,738) |
| (Provision) benefit for income taxes | 30 | (510) | (422) | 197 | (137) | (150) | (84) | (420) |
| Net loss attributable to common stockholders | (14,227) | $ (7,109) | $ (23,453) | $ (18,919) | $ (23,729) | $ (24,006) | $ (27,056) | $ (47,158) |

(1) Includes stock-based compensation expense as follows

| | Three Months Ended | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | March 31, 2017 | June 30, 2017 | Sept. 30, 2017 | Dec. 31, 2017 | March 31, 2018 | June 30, 2018 | Sept. 30, 2018 | Dec. 31, 2018 |
| | (Unaudited, in thousands) | | | | | | | |
| Cost of revenue | $ 138 | $ 142 | $ 180 | $ 190 | $ 222 | $ 266 | $ 284 | $ 354 |
| Research and development | 4,484 | 5,710 | 6,493 | 6,121 | 7,872 | 9,749 | 10,879 | 13,777 |
| Sales and marketing | 1,995 | 2,363 | 2,603 | 2,861 | 3.859 | 5,049 | 5,246 | 9,462 |
| General and administrative | 2,768 | 4,185 | 4,912 | 4,474 | 5,587 | 5,942 | 6.332 | 8,393 |
| Total | $ 9,385 | $ 12,400 | $ 14,188 | $ 13,646 | $ 17,540 | $ 21,006 | $ 22,741 | $ 31,986 |

(2) Includes amortization of acquired intangibles as follows:

| | Three Months Ended | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | March 31, 2017 | June 30, 2017 | Sept. 30, 2017 | Dec. 31, 2017 | March 31, 2018 | June 30, 2018 | Sept. 30, 2018 | Dec. 31, 2018 |
| | (Unaudited, in thousands) | | | | | | | |
| Cost of revenue | $ 997 | $ 1,182 | $ 1,250 | $ 1,215 | $ 1,198 | $ 1,125 | $ 1,396 | $ 1,937 |
| Research and development | 38 | 38 | 25 | 38 | 22 | — | — | — |
| Sales and marketing | 117 | 202 | 220 | 214 | 220 | 206 | 390 | 301 |
| General and administrative | 24 | 20 | 20 | 20 | 20 | 20 | 20 | 315 |
| Total | $ 1,176 | $ 1,442 | $ 1,515 | $ 1,487 | $ 1,460 | $ 1,351 | $ 1,806 | $ 2,553 |

| | Three Months Ended | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | March 31, 2017 | June 30, 2017 | Sept. 30, 2017 | Dec. 31, 2017 | March 31, 2018 | June 30, 2018 | Sept. 30, 2018 | Dec. 31, 2018 |
| | (Unaudited) | | | | | | | |
| **Consolidated Statements of Operations, as a percentage of revenue:**** | | | | | | | | |
| Revenue | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Cost of revenue | 43 | 44 | 48 | 48 | 46 | 46 | 46 | 47 |
| Gross margin | 57 | 56 | 52 | 52 | 54 | 54 | 54 | 53 |
| Operating expenses: | | | | | | | | |
| Research and development | 30 | 31 | 32 | 28 | 29 | 27 | 25 | 25 |
| Sales and marketing | 24 | 27 | 26 | 24 | 25 | 26 | 27 | 29 |
| General and administrative | 20 | 5 | 19 | 16 | 18 | 16 | 17 | 17 |
| Charitable contribution | — | — | — | 1 | — | — | — | 3 |
| Total operating expenses | 74 | 63 | 76 | 70 | 73 | 69 | 69 | 74 |
| Loss from operations | (17) | (7) | (24) | (18) | (19) | (15) | (15) | (22) |
| Other income (expense), net | 1 | * | 1 | 1 | 1 | (1) | (1) | (1) |
| Loss before (provision) benefit for income taxes | (16) | (7) | (23) | (17) | (18) | (16) | (16) | (23) |
| (Provision) benefit for income taxes | * | (1) | * | * | * | * | * | * |
| Net loss attributable to common stockholders | (16)% | (8)% | (23)% | (17)% | (18)% | (16)% | (16)% | (23)% |

* Less than 0.5% of revenue.

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

| | Three Months Ended | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | March 31, 2017 | June 30, 2017 | Sept. 30, 2017 | Dec. 31, 2017 | March 31, 2018 | June 30, 2018 | Sept. 30, 2018 | Dec. 31, 2018 |
| | (Unaudited, dollars in thousands) | | | | | | | |
| Number of Active Customer Accounts (*as of end date of period*)(1) | 40,696 | 43,431 | 46,489 | 48,979 | 53,985 | 57,350 | 61,153 | 64,286 |
| Base Revenue (*in thousands*) (2) | $ 80,643 | $ 87,583 | $ 91,965 | $ 105,299 | $ 117,507 | $ 135,004 | $ 154,348 | $ 186,158 |
| *Base Revenue Growth Rate* | *62%* | *55%* | *43%* | *40%* | *46%* | *54%* | *68%* | *77%* |
| Dollar-Based Net Expansion Rate(3) | 141% | 131% | 122% | 118% | 132% | 137% | 145% | 147% |

(1) See the section titled "—Key Business Metrics—Number of Active Customer Accounts."

(2) See the section titled "—Key Business Metrics—Base Revenue."

(3) See the section titled "—Key Business Metrics—Dollar-Based Net Expansion Rate."

### Quarterly Trends in Revenue and Gross Margin

Our quarterly revenue increased in each period presented primarily due to an increase in the usage of products as well as the adoption of additional products by our existing customers as evidenced by our Dollar-Based Net Expansion Rates, and an increase in our new customers. In the first half of 2017, an increasing mix of international product usage offset the continued platform optimization and drove a modest decline in gross margin percentage. The trends continued in the second half of 2017, and further gross margin declines were driven by certain price adjustments that were made by us as a result of Uber's high volume growth. In the first three quarters of 2018 the gross margin improved due to continued platform optimization, along with changes in our product and geographic mix. In the fourth quarter of 2018, an increasing mix of international product usage offset the continued platform optimization and drove a modest decline in gross margin percentage.

### Quarterly Trends in Operating Expenses

Our operating expenses have generally increased sequentially as a result of our growth, primarily related to increased personnel costs to support our expanded operations, our continued investment in our products, our operations as a public company and ongoing litigation.

Our sales and marketing expenses included $1.5 million, $6.8 million and $3.2 million of expenses related to our SIGNAL developer conference, in the third and fourth quarters of 2018 and the second quarter of 2017, respectively.

In the first quarter of 2017, our general and administrative expenses included a significant amount of sales and other taxes to which we are subject. Prior to March 2017, we had not billed nor collected these taxes from our customers, and, accordingly, recorded a provision for these taxes, based on several key assumptions, when our liability was probable and the amount could be reasonably estimated. Starting in March 2017, we began collecting these taxes in certain jurisdictions and have been increasing the number of jurisdictions where these taxes are now being collected by us. In the second quarter of 2017, we revised certain key assumptions driving prior estimates based on settlements reached with various states indicating that certain revisions to these assumptions were appropriate in that period. These revisions resulted in a reversal of $12.2 million of previously accrued liability, which caused a significant decrease in our general and administrative expenses in the second quarter of 2017 and resulted in a reduced rate of ongoing accrual for the third and fourth quarters of 2017 and all of 2018.

In the third quarter 2018, our general and administrative expenses increased by $1.5 million due to a preliminary settlement reached in an outstanding class action case, as further described in Note 11(b) of our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

In the fourth quarters of 2018, our general and administrative expenses further increased by $2.8 million due to the expenses related to our acquisition of SendGrid.

## Liquidity and Capital Resources

To date, our principal sources of liquidity have been (i) the net proceeds of $155.5 million and $64.4 million, net of underwriting discounts and offering expenses, from our initial public offering in June 2016 and our follow-on public offering in October 2016, respectively; (ii) the net proceeds we received through private sales of equity securities; (iii) the net proceeds of approximately $537.0 million, after deducting initial purchaser discounts and debt issuance costs paid by us, from issuance of the Notes, as described in Note 8 to our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K; and (iv) the payments received from customers using our products. From our inception through March 31, 2016, we completed several rounds of equity financing through the sale of our convertible preferred stock for total net proceeds of $237.1 million.

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 expenditures for at least the next 12 months. 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 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.

### *Cash Flows*

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

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| | | As Adjusted | |
| Cash provided by (used in) operating activities | $ 7,983 | $ (3,255) | $ 10,097 |
| Cash used in investing activities | (139,419) | (226,748) | (34,986) |
| Cash provided by financing activities | 515,819 | 36,437 | 229,164 |
| Effect of exchange rate changes on cash and cash equivalents | 163 | 74 | — |
| Net increase (decrease) in cash and cash equivalents | $ 384,546 | $ (193,492) | $ 204,275 |

*Cash Flows from Operating Activities*

In 2018, cash provided by operating activities consisted primarily of our net loss of $121.9 million adjusted for non-cash items, including $93.3 million of stock-based compensation expense, $26.1 million of depreciation and amortization expense, $14.1 million amortization of the debt discount and issuance costs related to our Notes, $6.0 million of charitable donations and $14.8 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts payable and other current liabilities increased $52.1 million and deferred revenue and customer deposits increased $6.0 million primarily due to increases in transaction volumes. Accounts receivable and prepaid expenses increased $67.0 million, which resulted primarily from the timing of cash receipts from certain of our larger customers, pre-payments for cloud infrastructure fees and certain operating expenses.

In 2017, cash used in operating activities consisted primarily of our net loss of $63.7 million adjusted for non-cash items, including $49.6 million of stock-based compensation expense, $18.8 million of depreciation and amortization expense, $1.2 million of charitable donations and $10.2 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts payable and other current liabilities increased $2.1 million and deferred revenue increased $3.6 million due to increases in transaction volumes, which were partially offset by the $13.4 million release of tax liability upon certain obligation settlements and estimate revisions, discussed in detail in Note 11 (d) of the consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Accounts receivable and prepaid expenses increased $13.2 million, which resulted primarily from the timing of cash receipts from certain of our larger customers, pre-payments for cloud infrastructure fees and certain operating expenses.

In 2016, cash provided by operating activities consisted primarily of our net loss of $41.3 million adjusted for non-cash items, including $24.2 million of stock-based compensation expense, $8.3 million of depreciation and amortization expense and $16.9 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts payable and other liabilities increased $25.9 million and deferred revenue increased $4.1 million, which were primarily due to increases in transaction volumes and additional accruals of sales and other taxes. Other long-term liabilities increased $9.1 million, primarily due to the increase in the deferred rent balance related to our new office lease in San Francisco, California. This was partially offset by an increase in accounts receivable and prepaid expenses of $22.0 million, which primarily resulted from the growth of our business and the timing of cash receipts from certain of our larger customers, pre-payments for cloud infrastructure fees and certain operating expenses, and a $5.7 million net increase related to the tenant improvement allowance under our new San Francisco, California office lease, after collecting $2.6 million from the landlord in the fourth quarter of 2016.

*Cash Flows from Investing Activities*

In 2018, cash used in investing activities was $139.4 million, primarily consisting of $84.2 million of purchases of marketable securities, net of maturities, $30.6 million of cash paid to acquire other businesses as described in Note 5 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K and $19.5 million related to capitalized software development costs.

In 2017, cash used in investing activities, as adjusted pursuant to the adoption of the new accounting guidance described in Note 2(p) of our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, was $226.7 million, primarily consisting of $177.3 million of purchases of marketable securities, net of maturities, a $22.6 million payment to acquire other businesses, $17.3 million related to capitalized software development costs and $9.2 million purchases of property and equipment primarily related to the leasehold improvements under our new office lease.

In 2016, cash used in investing activities, as adjusted pursuant to the adoption of the new accounting guidance described in Note 2(p) of our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, was $35.0 million, primarily consisting of $14.2 million of payments related to purchases of property and equipment as we continued to expand our offices and grow our headcount to support the growth of our business, $11.5 million of payments for capitalized software development as we continued to build new products and enhance our existing products and an $8.5 million payment to acquire certain assets of other businesses.

*Cash Flows from Financing Activities*

In 2018, cash provided by financing activities was $515.8 million, primarily consisting of $537.1 million net proceeds from our Notes, net of initial purchaser discounts and issuance costs paid in the period, $29.8 million proceeds from stock options exercised by our employees and $10.1 million proceeds from shares issued under our employee stock purchase plan. This was partially offset by a $58.5 million payment for capped call transactions.

In 2017, cash provided by financing activities was $36.4 million, primarily consisting of $25.7 million proceeds from stock options exercises by our employees and $11.9 million proceeds from shares issued under our employee stock purchase plan.

In 2016, cash provided by financing activities was $229.2 million, primarily consisting of $225.7 million of aggregate proceeds raised in our initial public offering and follow-on public offering, net of underwriting discounts, and $9.1 million of proceeds from stock options exercises by our employees. These cash inflows were partially offset by $4.6 million of costs paid in connection with our public offerings.

## Off-Balance Sheet Arrangements

We have not entered into any off-balance sheet arrangements and do not have any holdings in variable interest entities.

## Contractual Obligations and Other Commitments

The following table summarizes our non-cancelable contractual obligations as of December 31, 2018:

| | Less Than 1 Year | 1 to 3 Years | 3 to 5 Years | 5 Years or More | Total |
|---|---|---|---|---|---|
| | | | (In thousands) | | |
| As of December 31, 2018: | | | | | |
| Operating leases[1] | $ 24,128 | $ 60,425 | $ 60,614 | $ 81,316 | $ 226,483 |
| Capital lease[2] | 306 | 1,085 | 1,198 | 1,939 | 4,528 |
| Non-cancellable purchase obligations[3] | 37,623 | 3,360 | 7,000 | — | 47,983 |
| Total | $ 62,057 | $ 64,870 | $ 68,812 | $ 83,255 | $ 278,994 |

(1) Operating leases represent total future minimum rent payments under non-cancelable operating lease agreements.

(2) Capital lease represent total future minimum payments under a non-cancelable capital lease agreements.

(3) Non-cancellable purchase obligations represent total future minimum payments under contracts with our cloud infrastructure provider, network service providers and other vendors. Purchase obligations exclude agreements that are cancelable without penalty. Unrecognized tax benefits are not included in the table above because any amounts expected to be settled in cash are not material.

## Segment Information

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

## Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in U.S. GAAP. Preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs and expenses and related disclosures. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable. In many instances, we could have reasonably used different accounting estimates and in other instances changes in the accounting estimates are reasonably likely to occur from period to period. Actual results could differ significantly from our estimates. To the extent that there are material differences between these estimates and actual results, our future financial statement presentation, financial condition, results of operations and cash flows will be affected. We believe that the accounting policies discussed below are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving our judgments and estimates.

### *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.

Our revenue is primarily derived from usage-based fees earned from customers accessing our enterprise cloud computing services. Platform access 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 fees are derived from certain term-based contracts, such as with the sales of short codes and customer support. Term-based contracts revenue is recognized on a ratable basis over the contractual term of the arrangement beginning on the date that the service is made available to the customer.

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.

### *Stock-Based Compensation*

We account for stock-based compensation in accordance with the authoritative guidance on stock compensation. Under the fair value recognition provisions of this guidance, stock-based compensation is measured at the grant date based on the fair value of the award and is recognized as expense, over the requisite service period, which is generally the vesting period of the respective award.

Determining the fair value of stock-based awards at the grant date requires judgment. We use the Black-Scholes option-pricing model to determine the fair value of stock options and purchase rights under our 2016 Employee Stock Purchase Plan (the "2016 ESPP") granted to our employees and directors. The grant date fair value of restricted stock units is determined using the fair value of our common stock on the date of grant. Prior to our initial public offering, the fair value of our Class A common stock was determined by the estimated fair value at the time of grant. After our initial public offering, we use the market closing price of our Class A common stock as reported on the New York Stock Exchange for the fair value.

The determination of the grant date fair value of options using an option-pricing model is affected by our estimated Class A common stock fair value as well as assumptions regarding a number of other variables. These variables include our expected stock price volatility over the expected term of the options, stock option exercise and cancellation behaviors, risk-free interest rates, and expected dividends, which are estimated as follows:

- *Expected term.* The expected term represents the period that the stock-based awards are expected to be outstanding. We use the simplified calculation of expected term, as we do not have sufficient historical data to use any other method to estimate expected term.

- *Expected volatility.* The expected volatility is derived from an average of the historical volatilities of the common stock of several entities with characteristics similar to ours, such as the size, and operational and economic similarities to our principle business operations. We use this method because we have limited information on the volatility of our Class A common stock because of our short trading history.

- *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.

- *Expected dividend.* The expected dividend is assumed to be zero as we have never paid dividends and have no current plans to pay any dividends on our common stock.

In February 2017, we granted performance-based stock options that vest upon satisfaction of certain performance conditions. These stock options were valued using the Monte-Carlo simulation model.

The following table summarizes the assumptions used in the Black Scholes option-pricing model to determine the fair value of our stock options, as follows:

| | Year Ended December 31, | | |
|---|---|---|---|
| | **2018** | **2017** | **2016** |
| ***Employee Stock Options*** | | | |
| Fair value of common stock | $33.01 - $76.63 | $23.60 - $31.96 | $10.09 - $15.00 |
| Expected term (in years) | 1 - 6.08 | 6.08 | 6.08 |
| Expected volatility | 38.6% - 44.2% | 44.3% - 47.6% | 51.4% - 53.0% |
| Risk-free interest rate | 2.9% - 3.0% | 1.9% - 2.3% | 1.3% - 1.5% |
| Dividend rate | 0% | 0% | 0% |
| ***Employee Stock Purchase Plan*** | | | |
| Expected term (in years) | 0.5 | 0.5 | 0.90 |
| Expected volatility | 39.8% - 47.5% | 33.2% - 33.9% | 52% |
| Risk-free interest rate | 2.1% - 2.5% | 1.1% - 1.4% | 0.6% |
| Dividend rate | 0% | 0% | 0% |

The following assumptions were used in the Monte Carlo simulation model to estimate the fair value and the derived service period of the performance options:

| | |
|---|---|
| Asset volatility | 40% |
| Equity volatility | 45% |
| Discount rate | 14% |
| Stock price at grant date | $ 31.72 |

***Internal-Use Software Development Costs***

We capitalize certain costs related to the development of our platform and other software applications for internal use. In accordance with authoritative guidance, we begin to capitalize our costs to develop software when preliminary development efforts are successfully completed, management has authorized and committed project funding, and it is probable that the project will be completed and the software will be used as intended. We stop capitalizing these costs when the software is substantially complete and ready for its intended use, including the completion of all significant testing. These costs are amortized on a straight-line basis over the estimated useful life of the related asset, generally estimated to be three years. We also capitalize costs related to specific upgrades and enhancements when it is probable the expenditure will result in additional functionality and expense costs incurred for maintenance and minor upgrades and enhancements. Costs incurred prior to meeting these criteria together with costs incurred for training and maintenance are expensed as incurred and recorded within product development expenses in our consolidated statements of operations.

We exercise judgment in determining the point at which various projects may be capitalized, in assessing the ongoing value of the capitalized costs and in determining the estimated useful lives over which the costs are amortized. To the extent that we change the manner in which we develop and test new features and functionalities related to our platform, assess the ongoing value of capitalized assets or determine the estimated useful lives over which the costs are amortized, the amount of internal-use software development costs we capitalize and amortize could change in future periods.

**Recent Accounting Pronouncements Not Yet Adopted**

See Note 2(ab) 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.

## Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to certain market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities as follows:

***Interest Rate Risk***

We had cash and cash equivalents of $487.2 million and marketable securities of $261.1 million as of December 31, 2018. Cash and cash equivalents consist of bank deposits and money market funds. Marketable securities consist of U.S. treasury securities and high credit quality corporate debt securities. The cash and cash equivalents and 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. Due to the short-term nature of our investments, 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.

***Currency Exchange Risks***

The functional currency of our foreign subsidiaries is the U.S. dollar and the Euro. Therefore, we are exposed to foreign exchange rate fluctuations as we convert the financial statements of our foreign subsidiaries into U.S. dollars. The local currencies of our foreign subsidiaries are the British pound, the Euro, the Colombian peso, the Singapore dollar, the Hong Kong dollar, the Swedish Krona and the Czech Koruna. 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 year. 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. We do not currently engage in any hedging activity to reduce our potential exposure to currency fluctuations, although we may choose to do so in the future. 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.

**Item 8.** ***Financial Statements and Supplementary Data***

## INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

## 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, 2018 and December 31, 2017, 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, 2018, 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, 2018, 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, 2018 and December 31, 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018 based on criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

*Basis for Opinions*

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management Report on Internal Control over Financial Reporting, appearing under Item 9A(b). Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

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

*Definition and Limitations of Internal Control Over Financial Reporting*

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

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

/s/ KPMG LLP

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

San Francisco, California
February 28, 2019

**TWILIO INC.**

**Consolidated Balance Sheets**

**(In thousands, except share and per share amounts)**

| | As of December 31, 2018 | As of December 31, 2017 |
|---|---|---|
| **ASSETS** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 487,215 | $ 115,286 |
| Short-term marketable securities | 261,128 | 175,587 |
| Accounts receivable, net | 97,712 | 43,113 |
| Prepaid expenses and other current assets | 26,893 | 19,279 |
| Total current assets | 872,948 | 353,265 |
| Restricted cash | 18,119 | 5,502 |
| Property and equipment, net | 63,534 | 50,541 |
| Intangible assets, net | 27,558 | 20,064 |
| Goodwill | 38,165 | 17,851 |
| Other long-term assets | 8,386 | 2,559 |
| Total assets | $ 1,028,710 | $ 449,782 |
| **LIABILITIES AND STOCKHOLDERS' EQUITY** | | |
| Current liabilities: | | |
| Accounts payable | $ 18,495 | $ 11,116 |
| Accrued expenses and other current liabilities | 99,758 | 53,614 |
| Deferred revenue and customer deposits | 19,557 | 13,797 |
| Total current liabilities | 137,810 | 78,527 |
| Convertible senior notes, net | 434,496 | — |
| Other long-term liabilities | 18,169 | 11,409 |
| Total liabilities | 590,475 | 89,936 |
| Commitments and contingencies (Note 11) | | |
| Stockholders' equity: | | |
| Preferred stock, $0.001 par value, 100,000,000 shares authorized, none issued | — | — |
| Common stock, $0.001 par value per share: | | |
| Authorized shares 1,100,000,000 as of December 31, 2018 and 2017; Issued and outstanding shares 100,080,228 and 93,969,796 as of December 31, 2018 and 2017 | 100 | 94 |
| Additional paid-in capital | 808,527 | 608,165 |
| Accumulated other comprehensive income | 1,282 | 2,025 |
| Accumulated deficit | (371,674) | (250,438) |
| Total stockholders' equity | 438,235 | 359,846 |
| Total liabilities and stockholders' equity | $ 1,028,710 | $ 449,782 |

See accompanying notes to consolidated financial statements.

**TWILIO INC.**

**Consolidated Statements of Operations**

**(In thousands, except share and per share amounts)**

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| Revenue | $ 650,067 | $ 399,020 | $ 277,335 |
| Cost of revenue | 300,841 | 182,895 | 120,520 |
| Gross profit | 349,226 | 216,125 | 156,815 |
| Operating expenses: | | | |
| Research and development | 171,358 | 120,739 | 77,926 |
| Sales and marketing | 175,555 | 100,669 | 65,267 |
| General and administrative | 110,427 | 59,619 | 51,077 |
| Charitable contribution | 7,121 | 1,172 | 3,860 |
| Total operating expenses | 464,461 | 282,199 | 198,130 |
| Loss from operations | (115,235) | (66,074) | (41,315) |
| Other (expenses) income, net | (5,923) | 3,071 | 317 |
| Loss before provision for income taxes | (121,158) | (63,003) | (40,998) |
| Provision for income taxes | (791) | (705) | (326) |
| Net loss attributable to common stockholders | $ (121,949) | $ (63,708) | $ (41,324) |
| Net loss per share attributable to common stockholders, basic and diluted | $ (1.26) | $ (0.70) | $ (0.78) |
| Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted | 97,130,339 | 91,224,607 | 53,116,675 |

See accompanying notes to consolidated financial statements.

**TWILIO INC.**

**Consolidated Statements of Comprehensive Loss**

**(In thousands)**

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Net loss | $ (121,949) | $ (63,708) | $ (41,324) |
| Other comprehensive (loss) income: | | | |
| Unrealized gain (loss) on marketable securities | 258 | (598) | — |
| Foreign currency translation | (1,001) | 2,623 | — |
| Total other comprehensive (loss) income | (743) | 2,025 | — |
| Comprehensive loss attributable to common stockholders | $ (122,692) | $ (61,683) | $ (41,324) |

See accompanying notes to consolidated financial statements.

# TWILIO INC.
## Consolidated Statements of Stockholders' Equity
## (In thousands, except share amounts)

| | Convertible preferred stock | | Common Stock—Class A | | Common Stock—Class B | | Additional paid-in capital | Accumulated Other Comprehensive Income | Accumulated deficit | Total stockholders' equity |
|---|---|---|---|---|---|---|---|---|---|---|
| | Shares | Amount | Shares | Amount | Shares | Amount | | | | |
| Balance as of December 31, 2015 | 54,508,441 | $ 239,911 | — | $ — | 17,324,003 | $ 17 | $ 22,103 | $ — | $ (145,406) | $ 116,625 |
| Net loss | — | — | — | — | — | — | — | — | (41,324) | (41,324) |
| Issuance of common stock in connection with Initial Public Offering, net of underwriting discounts | — | — | 11,500,000 | 12 | — | — | 160,414 | — | — | 160,426 |
| Issuance of common stock in connection with Follow-On Public Offering, net of underwriting discounts | — | — | 1,691,222 | 2 | — | — | 65,279 | — | — | 65,281 |
| Costs related to public offerings | — | — | — | — | — | — | (5,730) | — | — | (5,730) |
| Conversion of convertible preferred stock to common stock in connection with the initial public offering | (54,508,441) | (239,911) | — | — | 54,508,441 | 54 | 239,857 | — | — | — |
| Exercises of vested stock options | — | — | — | — | 2,168,287 | 2 | 8,390 | — | — | 8,392 |
| Vesting of early exercised stock options | — | — | — | — | — | — | 636 | — | — | 636 |
| Vesting of restricted stock units | — | — | 19,178 | — | 68,345 | — | — | — | — | — |
| Value of equity awards withheld for tax liability | — | — | (1,578) | — | (27,036) | — | (1,037) | — | — | (1,037) |
| Exercises of unvested stock options | — | — | — | — | 126,365 | — | — | — | — | — |
| Conversion of shares of Class B common stock into shares of Class A common stock | — | — | 36,787,588 | 37 | (36,787,588) | (37) | — | — | — | — |
| Repurchases of unvested stock options | — | — | — | — | (1,625) | — | — | — | — | — |
| Stock-based compensation | — | — | — | — | — | — | 26,178 | — | — | 26,178 |
| Escrow shares returned to the issuer | — | — | — | — | (127,054) | — | — | — | — | — |
| Balance as of December 31, 2016 | — | — | 49,996,410 | 51 | 37,252,138 | 36 | 516,090 | — | (186,730) | 329,447 |
| Net loss | — | — | — | — | — | — | — | — | (63,708) | (63,708) |
| Exercises of vested stock options | — | — | — | — | 5,186,539 | 6 | 25,591 | — | — | 25,597 |
| Vesting of early exercised stock options | — | — | — | — | — | — | 378 | — | — | 378 |
| Vesting of restricted stock units | — | — | 360,116 | — | 351,255 | — | — | — | — | — |
| Value of equity awards withheld for tax liability | — | — | | — | (22,538) | — | (678) | — | — | (678) |
| Exercises of unvested stock options | — | — | — | — | 22,510 | — | — | — | — | — |
| Conversion of shares of Class B common stock into shares of Class A common stock | — | — | 18,710,499 | 18 | (18,710,499) | (18) | — | — | — | — |
| Shares issued under ESPP | — | — | 794,142 | 1 | — | — | 11,917 | — | — | 11,918 |
| Donated common stock | — | — | 45,383 | — | — | — | 1,172 | — | — | 1,172 |
| Repurchases of unvested stock options | — | — | — | — | (16,159) | — | (100) | — | — | (100) |
| Unrealized loss on marketable securities | — | — | — | — | — | — | — | (598) | — | (598) |
| Foreign currency translation | — | — | — | — | — | — | — | 2,623 | — | 2,623 |
| Stock-based compensation | — | — | — | — | — | — | 53,795 | — | — | 53,795 |
| Balance as of December 31, 2017 | — | — | 69,906,550 | 70 | 24,063,246 | 24 | 608,165 | 2,025 | (250,438) | 359,846 |
| Net loss | — | — | — | — | — | — | — | — | (121,949) | (121,949) |
| Adjustment to opening retained earnings due to adoption of ASC 606 | — | — | — | — | — | — | — | — | 713 | 713 |
| Exercises of vested stock options | — | — | — | — | 3,625,991 | 4 | 29,732 | — | — | 29,736 |
| Vesting of early exercised stock options | — | — | — | — | | — | 36 | — | — | 36 |
| Vesting of restricted stock units | — | — | 1,970,565 | 2 | 172,211 | — | — | — | — | 2 |
| Value of equity awards withheld for tax liability | — | — | (25,932) | — | (22,044) | — | (2,654) | — | — | (2,654) |
| Exercises of unvested stock options | — | — | — | — | 2,041 | — | — | — | — | — |
| Conversion of shares of Class B common stock into shares of Class A common stock | — | — | 8,530,980 | 8 | (8,530,980) | (8) | — | — | — | — |
| Shares issued under ESPP | — | — | 325,262 | — | — | — | 10,122 | — | — | 10,122 |
| Issuance of debt conversion option | — | — | — | — | — | — | 119,435 | — | — | 119,435 |
| Debt conversion option issuance costs | — | — | — | — | — | — | (2,819) | — | — | (2,819) |
| Capped call option issuance costs | — | — | — | — | — | — | (58,465) | — | — | (58,465) |
| Donated common stock | — | — | 62,338 | — | — | — | 5,996 | — | — | 5,996 |
| Unrealized loss on marketable securities | — | — | — | — | — | — | — | 258 | — | 258 |
| Foreign currency translation | — | — | — | — | — | — | — | (1,001) | — | (1,001) |
| Stock-based compensation | — | — | — | — | — | — | 98,979 | — | — | 98,979 |
| Balance as of December 31, 2018 | — | $ — | 80,769,763 | $ 80 | 19,310,465 | $ 20 | $ 808,527 | $ 1,282 | $ (371,674) | $ 438,235 |

See accompanying notes to consolidated financial statements.

# TWILIO INC.

## Consolidated Statements of Cash Flows

## (In thousands)

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| CASH FLOWS FROM OPERATING ACTIVITIES: | | | |
| Net loss | $ (121,949) | $ (63,708) | $ (41,324) |
| Adjustments to reconcile net loss to net cash provided by (used in) operating activities: | | | |
| Depreciation and amortization | 26,095 | 18,764 | 8,315 |
| Net amortization of investment premium or discount | (1,496) | 262 | — |
| Amortization of debt issuance costs | 1,102 | — | — |
| Accretion of debt discount on convertible senior notes | 12,951 | — | — |
| Amortization of deferred commissions | 1,349 | — | — |
| Stock-based compensation | 93,273 | 49,619 | 24,225 |
| Value of donated common stock | 5,996 | 1,172 | — |
| Provision for doubtful accounts | 3,650 | 580 | 1,145 |
| Write-off of internally developed software and intangible assets | 1,874 | 561 | 711 |
| (Gain) loss on lease termination and asset disposals | (45) | (295) | 94 |
| Changes in operating assets and liabilities: | | | |
| Accounts receivable | (58,234) | (15,280) | (8,254) |
| Prepaid expenses and other current assets | (8,739) | 2,214 | (13,755) |
| Other long-term assets | (5,305) | (1,984) | (129) |
| Accounts payable | 6,980 | 5,433 | 1,714 |
| Accrued expenses and other current liabilities | 45,120 | (3,312) | 24,182 |
| Deferred revenue and customer deposits | 5,958 | 3,560 | 4,076 |
| Other long-term liabilities | (597) | (841) | 9,097 |
| Net cash provided by (used in) operating activities | 7,983 | (3,255) | 10,097 |
| CASH FLOWS FROM INVESTING ACTIVITIES: | | | |
| Purchases of marketable securities | (279,687) | (293,186) | — |
| Maturities of marketable securities | 195,497 | 115,877 | — |
| Capitalized software development costs | (19,546) | (17,280) | (11,527) |
| Purchases of property and equipment | (4,668) | (9,248) | (14,174) |
| Purchases of intangible assets | (441) | (290) | (785) |
| Acquisition(s), net of cash acquired | (30,574) | (22,621) | (8,500) |
| Net cash used in investing activities | (139,419) | (226,748) | (34,986) |
| CASH FLOWS FROM FINANCING ACTIVITIES: | | | |
| Proceeds from Initial Public Offering, net of underwriting discounts | — | — | 160,426 |
| Proceeds from Follow-On Public Offering, net of underwriting discounts | — | — | 65,281 |
| Payments of costs related to public offerings | — | (430) | (4,606) |
| Proceeds from issuance of convertible senior notes | 550,000 | — | — |
| Payments of debt issuance costs | (12,941) | — | — |
| Purchase of capped call | (58,465) | — | — |
| Proceeds from exercises of stock options | 29,757 | 25,727 | 9,102 |
| Proceeds from shares issued in ESPP | 10,122 | 11,918 | — |
| Value of equity awards withheld for tax liabilities | (2,654) | (678) | (1,037) |
| Repurchases of common stock | — | (100) | (2) |
| Net cash provided by financing activities | 515,819 | 36,437 | 229,164 |
| Effect of exchange rate changes on cash and cash equivalents | 163 | 74 | — |
| NET INCREASE (DECREASE) IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH | 384,546 | (193,492) | 204,275 |
| CASH, CASH EQUIVALENTS AND RESTRICTED CASH—Beginning of year | 120,788 | 314,280 | 110,005 |
| CASH, CASH EQUIVALENTS AND RESTRICTED CASH—End of year | $ 505,334 | $ 120,788 | $ 314,280 |
| Cash paid for income taxes | $ 564 | $ 605 | $ 225 |
| NON-CASH INVESTING AND FINANCING ACTIVITIES: | | | |
| Purchases of property and equipment and intangible assets, accrued but not paid | $ 1,418 | $ 235 | $ 4,201 |
| Purchases of property, equipment through capital lease | $ 2,478 | $ — | $ — |
| Stock-based compensation capitalized in software development costs | $ 5,706 | $ 4,176 | $ 1,953 |
| Business combination measurement period adjustments | $ 571 | $ (149) | $ — |
| Acquisition holdback | $ 2,290 | $ — | $ — |
| Costs related to public offerings, accrued but not paid | $ — | $ — | $ 430 |

See accompanying notes to consolidated financial statements.

**TWILIO INC.**

**Notes to Consolidated Financial Statements**

**1. Organization and Description of Business**

Twilio Inc. (the "Company") was incorporated in the state of Delaware on March 13, 2008. The Company is the leader in the Cloud Communications Platform category and enables developers to build, scale and operate real-time communications within their software applications via simple-to-use Application Programming Interfaces ("API"). The power, flexibility, and reliability offered by the Company's software building blocks empower entities of virtually every shape and size to build world-class engagement into their customer experience.

The Company's headquarters are located in San Francisco, California, and the Company has subsidiaries in the United States, the United Kingdom, Estonia, Ireland, Colombia, Germany, Hong Kong, Singapore, Bermuda, Spain, Sweden, Australia, Czech Republic, Japan and the Netherlands.

**2. Summary of Significant Accounting Policies**

***(a) Basis of Presentation***

The Company's consolidated financial statements have been prepared in conformity with accounting principles generally accepted 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 and 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, recoverability of long-lived and intangible assets; capitalization and useful life of the Company's capitalized internal-use software development costs; fair value 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, marketable securities, restricted cash and accounts receivable. The Company maintains cash, cash equivalents, restricted cash and marketable securities with financial institutions that management believes are financially sound and have minimal credit risk exposure although the balances will 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 customers deteriorate substantially, operating results could be adversely affected. To reduce credit risk, management performs ongoing credit evaluations of the financial

**2. Summary of Significant Accounting Policies (Continued)**

condition of significant 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, 2018 and 2017, there was no customer organization that accounted for more than 10% of the Company's total revenue. During the year ended December 31, 2016, one customer organization represented approximately 14% of the Company's total revenue.

As of December 31, 2018 and 2017, there was no customer organization that represented more than 10% of the Company's gross accounts receivable.

***(e) Revenue Recognition***

*Adoption of Accounting Standards Codification ("ASC") 606, "Revenue from Contracts with Customers"*

Effective January 1, 2018, the Company adopted Accounting Standards Codification ("ASC") 606, "*Revenue from Contracts with Customers"*, which replaced the existing revenue recognition guidance, ASC 605, and outlines a single set of comprehensive principles for recognizing revenue under U.S. GAAP. Among other things, ASC 606 requires entities to assess the products or services promised in contracts with customers at contract inception to determine the appropriate unit at which to record revenue, which is referred to as a performance obligation. Revenue is recognized when control of the promised products or services is transferred to customers at an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those products or services.

The Company adopted ASC 606 using the modified retrospective method with a cumulative catch-up adjustment to the opening retained earnings as of January 1, 2018. Results for reporting periods beginning after December 31, 2017 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with the Company's historical accounting policies prior to adoption. In adopting the standard, the Company elected to apply the new guidance only to those contracts which were not completed as of the date of the adoption.

The impact of adopting the new standard on the Company's consolidated financial statements was insignificant. The Company recorded a net cumulative catch-up adjustment to the beginning retained earnings as of January 1, 2018, of $0.7 million.

The primary impact relates to the deferral of incremental commission costs of obtaining new contracts. Under ASC 605, the Company deferred only direct and incremental commission costs to obtain a contract and amortized those costs on a straight-line basis over the term of the related subscription contract. Under the new standard, the Company defers all incremental commission costs to obtain the contract and amortizes these costs on a straight-line basis over the expected term of benefit of the underlying asset, which was determined to be five years.

The impact on the Company's revenue recognition policies was insignificant. Prior to the adoption of ASC 606, the Company recognized the majority of its revenue according to the usage by its customers in the period in which that usage occurred. ASC 606 continues to support the recognition of revenue over time, and on a usage basis, for the majority of the Company's contracts due to continuous transfer of control to the customer.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

There was not a significant tax impact to the Company's consolidated statements of operations and consolidated balance sheet relating to the adoption of the new standard as there is a full valuation allowance due to the Company's history of continued losses.

*Revenue Recognition Policy*

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's revenue is primarily derived from usage-based fees earned from customers accessing the Company's enterprise cloud computing services. Platform access is considered a monthly series comprising of one performance obligation and usage-based fees are recognized as revenue in the period in which the usage occurs. In the years ended December 31, 2018, 2017 and 2016, the revenue from usage-based fees represented 84%, 83% and 83% of total revenue, respectively.

Subscription-based fees are derived from certain term-based contracts, such as with the sales of short codes and customer support. Term-based contracts revenue is recognized on a ratable basis over the contractual term of the arrangement beginning on the date that the service is made available to the customer. In the years ended December 31, 2018 and 2017, the revenue from term-based fees represented 16% and 17% of total revenue, respectively.

The Company applied 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 one year or less. The majority of the Company's contracts have a duration of one year or less.

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 ("SSP").

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.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

The reserve for sales credits is included in accounts receivable and is calculated based on historical trends and any specific risks identified in processing transactions. Changes in the reserve are recorded against revenue.

*Deferred Revenue and Customer Deposits*

Deferred revenue is recorded when cash payments are received in advance of future usage on non-cancellable contracts. Customer refundable prepayments are recorded as customer deposits. As of December 31, 2018, the Company recorded $10.3 million and $9.3 million as its deferred revenue and customer deposits, respectively. In the year ended December 31, 2018, the Company recognized $10.5 million of revenue, that was included in the deferred revenue and customer deposits balance as of January 1, 2018.

*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 determined to be 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. Total net capitalized costs as of December 31, 2018 were $9.4 million and are included in prepaid expenses and other current and long-term assets in the accompanying consolidated balance sheet. Amortization of these assets was $1.4 million in the year ended December 31, 2018, and is included in sales and marketing expense in the accompanying consolidated statement of operations.

***(f) Cost of Revenue***

Cost of revenue consists primarily of costs of communications services purchased from network service providers. Cost of revenue also includes fees to support the Company's cloud infrastructure, personnel costs, such as salaries and stock-based compensation for the customer care and support services employees, and non-personnel costs, such as amortization of capitalized internal-use software development costs and amortization of acquired intangibles.

***(g) Research and Development Expenses***

Research and development expenses consist primarily of personnel costs, cloud infrastructure fees for staging and development, outsourced engineering services, 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.

***(h) 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

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

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 and expenses costs incurred for maintenance and minor upgrades and enhancements. 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.

***(i) Advertising Costs***

Advertising costs are expensed as incurred and were $10.6 million, $4.9 million and $3.5 million in the years ended December 31, 2018, 2017 and 2016, respectively. Advertising costs are included in sales and marketing expenses in the accompanying consolidated statements of operations.

***(j) Stock-Based Compensation***

All stock-based compensation to employees, including the purchase rights issued under the Company's 2016 Employee Stock Purchase Plan (the "ESPP"), is measured on the grant date based on the fair value of the awards on the date of grant. This cost is 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. The fair value of the restricted stock units is determined using the 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. Prior to adoption of ASU 2016-09, the stock-based compensation was recorded net of estimated forfeitures.

In June 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2018-07, "*Improvements to Nonemployee Share-Based Payment Accounting"*, which aligns the measurement and classification for share-based payments to non-employees with the accounting guidance for share-based payments to employees. Among other requirements, the measurement of non-employee awards will now be fixed at the grant date, rather than remeasured at every reporting date. This guidance is effective for interim and annual reporting periods beginning after December 15, 2018, with early application permitted. The Company early-adopted this guidance in the quarter ended December 31, 2018 which did not have a material impact to its financial statements.

In May 2017, the FASB issued ASU 2017-09, *"Compensation—Stock Compensation (Topic 718), Scope of Modification Accounting"*, ASU 2017-09 clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as modifications. ASU 2017-09 allows companies to make certain changes to awards, such as vesting conditions, without accounting for them as modifications. It does not change the accounting for modifications. ASU 2017-09 should be applied prospectively to awards modified on or after the adoption date. The Company adopted ASU 2017-09 in

**2. Summary of Significant Accounting Policies (Continued)**

the first quarter of 2018. The adoption of this guidance did not have an impact on the Company's financial position, results of operations or cash flows.

In March 2016, FASB issued ASU No. 2016-09, "*Compensation—Stock Compensation (Topic 718): Improvements to Employee Share -Based Payment Accounting*." This new guidance was intended to simplify several areas of accounting for stock-based compensation arrangements, including the income tax impact, classification on the statement of cash flows and forfeitures. This guidance is effective for fiscal years, and interim periods within those years, beginning after December 15, 2016, and early adoption is permitted. The Company early adopted this guidance in the quarter ended December 31, 2016. The new guidance allows entities to account for forfeitures as they occur. The Company elected to account for forfeitures as they occur and adopted this provision on a modified retrospective basis. The $0.1 million of cumulative prior years' impact as well as the impact on the first three quarters of 2016 of $75,000 was recognized as an increase to stock-based compensation during the quarter ended December 31, 2016, as the impact on prior periods was insignificant. Adoption of all other changes in the new guidance did not have a significant impact on the Company's consolidated financial statements.

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-based awards. These assumptions include:

- *Fair value of the common stock.* Prior to the Company's IPO, the board of directors considered numerous objective and subjective factors to determine the fair value of the Company's common stock at each meeting at which awards are approved. The factors included, but were not limited to: (i) contemporaneous valuations of the Company's common stock by an unrelated third party; (ii) the prices at which the Company sold shares of its convertible preferred stock to outside investors in arms-length transactions; (iii) the rights, preferences and privileges of the Company's convertible preferred stock relative to those of its common stock; (iv) the Company's results of operations, financial position and capital resources; (v) current business conditions and projections; (vi) the lack of marketability of the Company's common stock; (vii) the hiring of key personnel and the experience of management; (viii) the introduction of new products; (ix) the risk inherent in the development and expansion of the Company's products; (x) the Company's stage of development and material risks related to its business; (xi) the fact that the option grants involve illiquid securities in a private company; and (xii) the likelihood of achieving a liquidity event, such as an initial public offering or sale of the Company, in light of prevailing market conditions;

  After the IPO, 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-based awards are expected to be outstanding. The Company uses the simplified calculation of expected term, as the Company does not have sufficient historical data to use any other method to estimate expected term;

- *Expected volatility.* The expected volatility is derived from an average of the historical volatilities of the common stock of several entities with characteristics similar to those of the Company,

**2. Summary of Significant Accounting Policies (Continued)**

such as the size and operational and economic similarities to the Company's principal business operations;

- *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.

***(k) 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 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.

***(l) Foreign Currency Translation***

The functional currency of the Company's foreign subsidiaries is generally 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 year. Remeasurement adjustments are recognized in the consolidated statements of operations as other income or expense in the year of occurrence. Foreign currency transaction gains and losses were insignificant for all periods presented.

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) in stockholders' equity. Monetary assets and liabilities denominated in a foreign currency are translated into US dollars at the exchange rate on the balance sheet date. Revenue and expenses are translated at the weighted average exchange rates during the period. Equity transactions are translated using historical exchange rates. Foreign currency transaction gains and losses are included in other income (expense), net in the consolidated statements of operations.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

***(m) Comprehensive Income (Loss)***

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

For the year ended December 31, 2016, the Company's operations did not give rise to any material items includable in comprehensive income (loss), which were not already in net income (loss). Accordingly, for that period, the Company's comprehensive income (loss) is the same as its net income (loss).

***(n) 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. All series of convertible preferred stock are considered to be participating securities as the holders of the preferred stock are entitled to receive a non-cumulative dividend on a pro rata *pari passu* basis in the event that a dividend is declared or paid on common stock. Shares of common stock issued upon early exercise of stock options that are subject to repurchase are also considered to be participating securities, because holders of such shares have non-forfeitable dividend rights in the event a dividend is declared or paid on common stock. Under the two-class method, in periods when the Company has net income, net income attributable to common stockholders is determined by allocating undistributed earnings, calculated as net income less current period convertible preferred stock non-cumulative dividends, between common stock and the convertible preferred stock. In computing diluted net income attributable to common stockholders, undistributed earnings are re-allocated to reflect the potential impact of dilutive securities. The Company's basic net loss per share attributable to common stockholders is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period. The diluted net loss per share attributable to common stockholders is computed by giving effect to all potential dilutive common stock equivalents outstanding for the period. The dilutive effect of these potential common shares is reflected in diluted earnings per share by application of the treasury stock method. For purposes of this calculation, convertible preferred stock, options to purchase common stock, unvested restricted stock units, common stock issued subject to future vesting, any shares of stock committed under the ESPP, any shares of stock held in escrow and any shares of stock reserved for future donations are considered common stock equivalents but have been excluded from the calculation of diluted net loss per share attributable to common stockholders as their effect is antidilutive.

Since the Company's IPO in 2016, Class A and Class B common stock are the only outstanding equity of the Company. The rights of the holders of Class A and Class B common stock are identical, except with respect to voting and conversion. Each share of Class A common stock is entitled to one vote per share and each share of Class B common stock is entitled to 10 votes per share. Shares of Class B common stock may be converted into Class A common stock at any time at 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. Shares of Class A common stock are not convertible.

TWILIO INC.

Notes to Consolidated Financial Statements (Continued)

**2. Summary of Significant Accounting Policies (Continued)**

***(o) 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 consist of funds deposited into money market funds and reverse repurchase agreements. 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.

***(p) Restricted Cash***

Restricted cash consists of cash deposited into a savings account with a financial institution as collateral for the Company's obligations under its facility leases of premises located in San Francisco, California. The facility lease for the Company's old office space expired in January 2017 and the facility leases for the Company's current offices expire at various dates between October 2024 and June 2028.

In November 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-18, "*Statement of Cash Flows (Topic 230)—Restricted Cash"*. This standard provides guidance on the presentation of restricted cash and restricted cash equivalents in the statement of cash flows. Restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period amounts shown on the statements of cash flows. The amendments of this ASU should be applied using a retrospective transition method and are effective for reporting periods beginning after December 15, 2017. The Company adopted ASU 2016-18 in the first quarter of 2018 and applied the guidance retrospectively to the prior period's consolidated statement of cash flows with the following impact (in thousands):

| | Year Ended December 31, 2017 | | Year Ended December 31, 2016 | |
|---|---|---|---|---|
| | As Originally Reported | As Adjusted | As Originally Reported | As Adjusted |
| Cash provided by (used in) operating activities | $ (3,260) | $ (3,255) | $ 10,091 | $ 10,097 |
| Cash used in investing activities | $ (223,630) | $ (226,748) | $ (42,425) | (34,986) |
| Cash, cash equivalents and restricted cash—beginning of period | 305,665 | 314,280 | 108,835 | 110,005 |
| Cash, cash equivalents and restricted cash—end of period | $ 115,286 | $ 120,788 | $ 305,665 | $ 314,280 |

Other than the revised statement of cash flows presentation of restricted cash, the adoption of ASU 2016-18 did not have an impact on the Company's financial position and results of operations.

The restricted cash balances as of December 31, 2018 and December 31, 2017 were $18.1 million and $5.5 million, respectively.

***(q) Accounts Receivable and Allowance for Doubtful Accounts***

Accounts receivable are recorded net of the allowance for doubtful accounts and the reserve for sales credits. 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

**2. Summary of Significant Accounting Policies (Continued)**

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 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. The allowance for doubtful accounts was $4.9 million and $1.0 million as of December 31, 2018 and 2017, respectively.

***(r) Costs Related to the Public Offerings***

Costs related to the 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. In the year ended December 31, 2016, the Company recorded in its consolidated statement of stockholders' equity $5.7 million in total offering costs.

***(s) Property and Equipment***

Property and equipment, both owned and under capital lease, 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 charged to expenses as incurred.

The useful lives of property and equipment are as follows:

| | |
|---|---|
| Capitalized software development costs | 3 years |
| Office equipment | 3 years |
| Furniture and fixtures | 5 years |
| Software | 3 years |
| Assets under capital lease | 5 years or remaining lease term |
| Leasehold improvements | 5 years or remaining lease term |

***(t) Intangible Assets***

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

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.

TWILIO INC.

Notes to Consolidated Financial Statements (Continued)

**2. Summary of Significant Accounting Policies (Continued)**

The useful lives of the intangible assets are as follows:

| | |
|---|---|
| Developed technology | 3 - 4 years |
| Customer relationships | 2 - 8 years |
| Supplier relationships | 5 years |
| Trade names | 2 years |
| Patents | 20 years |
| Trademarks | Indefinite |
| Domain names | Indefinite |

***(u) Goodwill***

Goodwill represents 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. The Company has determined that it operates as one reporting unit and has selected November 30 as the date to perform its annual impairment test. In the valuation of goodwill, management must make assumptions regarding estimated future cash flows to be derived from the Company's business. If these estimates or their related assumptions change in the future, the Company may be required to record impairment for these assets. Management may first evaluate qualitative factors to assess if it is more likely than not that the fair value of a reporting unit is less than its carrying amount and to determine if a two-step impairment test is necessary. Management may choose to proceed directly to the two-step evaluation, bypassing the initial qualitative assessment. The first step of the impairment test involves comparing the fair value of the reporting unit to its net book value, including goodwill. If the net book value exceeds its fair value, then the Company would perform the second step of the goodwill impairment test to determine the amount of the impairment loss. The impairment loss would be calculated by comparing the implied fair value of the goodwill to its net book value. In calculating the implied fair value of goodwill, the fair value of the entity would be allocated to all of the other assets and liabilities based on their fair values. The excess of the fair value of the entity over the amount assigned to other assets and liabilities is the implied fair value of goodwill. An impairment loss would be recognized when the carrying amount of goodwill exceeds its implied fair value. No goodwill impairment charges have been recorded for any period presented.

***(v) Impairment of Long-Lived Assets***

The Company evaluates long-lived assets, including property and 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 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. There was no impairment during the years ended December 31, 2018, 2017 and 2016. The Company wrote off $1.7 million, $0.6 million and $0.7 million of internally developed software in the years ended December 31, 2018, 2017 and 2016, respectively, due to abandonment.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

***(w) Business Combinations***

The Company recognizes 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 assets acquired and liabilities assumed 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 to make adjustments to the preliminary allocation 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 of the measurement period or final determination of the values of the assets acquired and liabilities assumed, whichever comes first, any subsequent adjustments will be recorded to the consolidated statement of operations.

***(x) 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 for purposes of allocating resources and evaluating the Company's financial performance. Accordingly, the Company has determined that it operates in a single reporting segment.

***(y) Fair Value of Financial Instruments***

The Company applies fair value accounting for all financial instruments on a recurring basis. The Company's financial instruments, which include 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. Restricted cash is long-term in nature and consists of cash in a savings account, hence its carrying amount approximates its fair value. Marketable securities consist of U.S. treasury securities, high credit quality corporate debt securities and reverse repurchase agreements. All marketable securities are considered to be available-for-sale and recorded at their estimated fair values. Unrealized gains and losses for available-for-sale securities are recorded in other comprehensive income (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 value of the convertible senior notes due 2023 (the "Notes") is determined based on the closing price for the Notes on the last trading day of the reporting period and is considered as Level 2 in the fair value hierarchy.

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 income (expense), net.

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

**2. Summary of Significant Accounting Policies (Continued)**

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.

***(z) Recent Accounting Pronouncements Not Yet Adopted***

In August 2018, the FASB issued ASU 2018-15, "*Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract". This standard aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The standard is effective for interim and annual periods beginning after December 15, 2019, with early adoption permitted. The Company is currently evaluating the impact of the adoption of this standard on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, "*Fair Value Measurement (Topic 820) Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement*". The amendments under ASU 2018-13 remove, add and modify certain disclosure requirements on fair value measurements in ASC 820. The amendments are effective for interim and annual reporting periods beginning after December 15, 2019. The Company is currently evaluating the impact the new standard will have on its consolidated financial statements.

In July 2018, the FASB issued ASU 2018-09, "*Codification Improvements*", which does not prescribe any new accounting guidance, but instead makes minor improvements and clarifications of several different FASB ASC areas based on comments and suggestions made by various stakeholders. Certain updates are applicable immediately while others provide for a transition period to adopt as part of the next fiscal year beginning after December 15, 2018. The Company does not expect the adoption of this guidance to have a material impact on the Company's consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, "*Simplifying the Test for Goodwill Impairment*", which removes the second step of the goodwill impairment test that requires a hypothetical purchase price allocation. A goodwill impairment will now be the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill. This guidance is effective prospectively for interim and annual reporting periods beginning after December 15, 2019. The Company will adopt this guidance upon its effective date. The Company does not expect the adoption of this guidance to have a material impact on the Company's consolidated financial statements .

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**2. Summary of Significant Accounting Policies (Continued)**

In June 2016, the FASB issued ASU 2016-13, *"Financial Instruments—Credit Losses: Measurement of Credit Losses on Financial Instruments"*, which changes the impairment model for most financial assets. The new model uses a forward-looking expected loss method, which will generally result in earlier recognition of allowances for losses. In November 2018, the FASB issued ASU 2018-19, "*Codification Improvements to Topic 326, Financial Instruments—Credit Losses*", which clarifies that receivables arising from operating leases are not within the scope of *Topic 326, Financial Instruments—Credit Losses*. Instead, impairment of receivables arising from operating leases should be accounted for in accordance with *Topic 842, Leases*. These ASUs are effective for annual and interim periods beginning after December 15, 2019 and early adoption is permitted for annual and interim periods beginning after December 15, 2018. The Company is evaluating the impact of this guidance on its consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, "*Leases*", which was further clarified by ASU 2018-10, "*Codification Improvements to Topic 842, Leases"*, and ASU 2018-11, "*Leases—Targeted Improvements"*, both issued in July 2018. ASU 2016-02 affects all entities that lease assets and will require lessees to recognize a lease liability and a right-of-use asset for all leases (except for short-term leases that have a duration of less than one year) as of the date on which the lessor makes the underlying asset available to the lessee. For lessors, accounting for leases is substantially the same as in prior periods. ASU 2018-10 clarifies or corrects unintended application of guidance related to ASU 2016-02. The amendment affects narrow aspects of ASU 2016-02 related to the implicit rate in the lease, impairment of the net investment in the lease, lessee reassessment of lease classification, lessor reassessment of lease term and purchase options, variable payments that depend on an index or rate and certain transition adjustments. ASU 2018-11 adds a transition option for all entities and a practical expedient only for lessors. The transition option allows entities to not apply the new leases standard in the comparative periods they present in their financial statements in the year of adoption. Under the transition option, entities can opt to continue to apply the legacy guidance in ASC 840, "*Leases"*, including its disclosure requirements, in the comparative periods presented in the year they adopt the new leases standard. Entities that elect this transition option will still be required to adopt the new leases standard using the modified retrospective transition method required by the standard, but they will recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption rather than in the earliest period presented. The practical expedient provides lessors with an option to not separate the non-lease components from the associated lease components when certain criteria are met and requires them to account for the combined component in accordance with the revenue recognition standard in ASC 606 if the associated non-lease components are the predominant components. The new standards are effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. Early adoption is permitted. For leases existing at, or entered into after the beginning of the earliest comparative period presented in the financial statements, lessees and lessors must apply a modified retrospective transition approach. While the Company expects the adoption of these standards to result in a material increase to the reported assets and liabilities, the Company has not yet determined the full impact that the adoption of this standard will have on its consolidated financial statements.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

### 3. Fair Value Measurements

The following tables provide the assets measured at fair value on a recurring basis as of December 31, 2018 and 2017 (in thousands):

| | Amortized Cost or Carrying Value | Gross Unrealized Gains | Gross Unrealized Losses Less Than 12 Months | Gross Unrealized Losses More Than 12 Months | Fair Value Hierarchy as of December 31, 2018 Level 1 | Level 2 | Level 3 | Aggregate Fair Value |
|---|---|---|---|---|---|---|---|---|
| **Financial Assets:** | | | | | | | | |
| Cash and cash equivalents: | | | | | | | | |
| Money market funds | $ 420,234 | $ — | $ — | $ — | $ 420,234 | $ — | $ — | $ 420,234 |
| Reverse repurchase agreements | 35,000 | — | — | — | — | 35,000 | — | 35,000 |
| Commercial paper | 9,983 | — | — | — | — | 9,983 | — | 9,983 |
| Total included in cash and cash equivalents | 465,217 | — | — | — | 420,234 | 44,983 | — | 465,217 |
| Marketable securities: | | | | | | | | |
| U.S. Treasury securities | 59,785 | — | (7) | (9) | 59,769 | — | — | 59,769 |
| Corporate debt securities and commercial paper | 201,683 | 23 | (123) | (224) | — | 201,359 | — | 201,359 |
| Total marketable securities | 261,468 | 23 | (130) | (233) | 59,769 | 201,359 | — | 261,128 |
| Total financial assets | $ 726,685 | $ 23 | $ (130) | $ (233) | $ 480,003 | $ 246,342 | $ — | $ 726,345 |

| | Amortized Cost or Carrying Value | Gross Unrealized Gains | Gross Unrealized Losses Less Than 12 Months | Gross Unrealized Losses More Than 12 Months | Fair Value Hierarchy as of December 31, 2017 Level 1 | Level 2 | Level 3 | Aggregate Fair Value |
|---|---|---|---|---|---|---|---|---|
| **Financial Assets:** | | | | | | | | |
| Cash and cash equivalents: | | | | | | | | |
| Money market funds | $ 95,432 | $ — | $ — | $ — | $ 95,432 | $ — | $ — | $ 95,432 |
| Total included in cash and cash equivalents | 95,432 | — | — | — | 95,432 | — | — | 95,432 |
| Marketable securities: | | | | | | | | |
| U.S. Treasury securities | 59,962 | — | (216) | — | 59,746 | — | — | 59,746 |
| Corporate debt securities and commercial paper | 116,223 | — | (382) | — | — | 115,841 | — | 115,841 |
| Total marketable securities | 176,185 | — | (598) | — | 59,746 | 115,841 | — | 175,587 |
| Total financial assets | $ 271,617 | $ — | $ (598) | $ — | $ 155,178 | $ 115,841 | $ — | $ 271,019 |

As of December 31, 2018, the fair value of the 0.25% convertible senior notes due 2023 (the "Notes"), as further described in Note 8 below, was approximately $743.4 million.

As the Company views its marketable securities as available to support current operations, it has classified all available for sale securities as short-term. As of December 31, 2018, for fixed income securities that were in 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

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**3. Fair Value Measurements (Continued)**

to sell any of these investments before recovery of the entire amortized cost basis. In addition, as of December 31, 2018, the Company anticipates that it will recover the entire amortized cost basis of such fixed income securities and has determined that no other-than-temporary impairments associated with credit losses were required to be recognized during the years ended December 31, 2018 and 2017. Interest earned on marketable securities was $3.0 million and $2.6 million in the years ended December 31, 2018 and 2017, respectively. The interest is recorded as other income (expense), net, in the accompanying consolidated statements of operations.

The following table summarizes the contractual maturities of marketable securities as of December 31, 2018 and 2017 (in thousands):

| | As of December 31, 2018 | | As of December 31, 2017 | |
|---|---|---|---|---|
| | Amortized Cost | Aggregate Fair Value | Amortized Cost | Aggregate Fair Value |
| **Financial Assets:** | | | | |
| Less than one year | $ 261,468 | $ 261,128 | $ 108,584 | $ 108,360 |
| One to two years | — | — | 67,601 | 67,227 |
| Total | $ 261,468 | $ 261,128 | $ 176,185 | $ 175,587 |

The Company enters into reverse securities repurchase agreements, primarily for short-term investments with maturities of 90 days or less. As of December 31, 2018, the Company was party to reverse repurchase agreements totaling $35.0 million, which were reported in cash and equivalents in the accompanying consolidated balance sheet. Under these reverse securities repurchase agreements, the Company typically lends available cash at a specified rate of interest and holds U.S. government securities as collateral during the term of the agreement. Collateral value is in excess of the amounts loaned under these agreements.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

## 4. Property and Equipment

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

| | As of December 31, | |
|---|---|---|
| | 2018 | 2017 |
| Capitalized internal-use software development costs | $ 72,647 | $ 49,177 |
| Leasehold improvements | 15,293 | 14,246 |
| Office equipment | 13,563 | 9,652 |
| Furniture and fixtures | 2,440 | 1,976 |
| Assets under capital lease[1] | 2,478 | — |
| Software | 1,849 | 1,675 |
| Total property and equipment | 108,270 | 76,726 |
| Less: accumulated depreciation and amortization | (44,736) | (26,185) |
| Total property and equipment, net | $ 63,534 | $ 50,541 |

(1) Assets under capital lease relate to a sub-lease agreement that commenced in the fourth quarter of 2018, as further described in Note 11(a), and consist primarily of furniture that will be acquired at a bargain purchase option at the end of the lease term.

Depreciation and amortization expense was $18.9 million, $13.1 million and $7.4 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The Company capitalized $25.3 million, $21.5 million and $13.5 million in internal-use software development costs in the years ended December 31, 2018, 2017 and 2016, respectively, of which $5.7 million, $4.2 million and $2.0 million, respectively, was stock-based compensation expense. Amortization of capitalized software development costs was $13.0 million, $8.4 million and $5.5 million in the years ended December 31, 2018, 2017 and 2016, respectively. The amortization expense was allocated as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Cost of revenue | $ 6,898 | $ 4,788 | $ 3,304 |
| Research and development | 5,437 | 3,619 | 2,182 |
| General and administrative | 689 | — | — |
| Total | $ 13,024 | $ 8,407 | $ 5,486 |

## 5. Business Combinations

### Fiscal 2018 Acquisitions

*VAI Technologies, LLC*

In November 2018, the Company acquired certain assets from VAI Technologies, LLC, a Delaware corporation and a developer of a natural language processing platform. The purchase price consisted of $1.2 million in cash, of which $0.3 was withheld by the Company for a period from 18 months to 4 years and can be extended under certain circumstances.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**5. Business Combinations (Continued)**

The acquisition was accounted for as a business combination and, accordingly, the total purchase price was allocated to the identifiable intangibles assets acquired based on their respective fair values on the acquisition date. The excess of the purchase price over the fair values of the identifiable assets acquired was recorded as goodwill. The estimated fair value of the intangible assets acquired was determined by the Company.

The following table presents the final purchase price allocation recorded in the Company's consolidated balance sheet (in thousands):

| | Total |
|---|---|
| Intangible assets(1) | $ 517 |
| Goodwill(2) | 683 |
| Total purchase price | $ 1,200 |

(1) The intangible assets consist of developed technology with the estimated useful life of 4 years on the date of acquisition.

(2) The goodwill in this transaction is primarily attributable to the future cash flows to be realized from the acquired technology and the future development initiatives of the acquired workforce. The Company intends to file elections that make the goodwill deductible for U.S. tax purposes.

The Company incurred cost related to this acquisition of $0.1 million that were expensed as incurred and have been recorded in general and administrative expenses in the accompanying consolidated statement of operations.

*Ytica.com a.s.*

In September 2018, the Company acquired all outstanding shares of Ytica.com a.s. ("Ytica"), a developer and provider of a contact center reporting and analytics based in the Czech Republic, for a total purchase price of $21.8 million, paid in cash, of which $3.2 million was held in escrow with a term of 18 months.

Additionally, the Company granted 47,574 restricted stock units of the Company's Class A common stock to a former shareholder of Ytica that had a value of $3.6 million and is subject to vesting over a period of three years. The Company is recording stock-based compensation expense as the shares are vesting.

The acquisition was accounted for as a business combination and the total purchase price was allocated to the net tangible and intangible assets and liabilities based on their fair values on the acquisition date and the excess was recorded as goodwill. The acquired entity's results of operations have been included in the consolidated financial statements of the Company from the date of acquisition.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**5. Business Combinations (Continued)**

The following table presents the preliminary purchase price allocation recorded in the Company's consolidated balance sheet as of December 31, 2018 (in thousands):

| | Total |
|---|---|
| Net tangible assets | $ (1,538) |
| Intangible assets[1] | 9,920 |
| Goodwill[2] | 13,375 |
| Total purchase price | $ 21,757 |

(1) Identifiable finite-lived intangible assets were comprised of the following (in thousands):

| | Total | Estimated life (in years) |
|---|---|---|
| Developed technology | $ 9,090 | 4 |
| Customer relationships | 830 | 2 |
| Total intangible assets acquired | $ 9,920 | |

(2) The goodwill is primarily attributable to the future cash flows to be realized from the acquired technology platform as well as operational synergies. The Company intends to file elections that make the goodwill deductible for U.S. tax purposes.

The Company acquired a net deferred tax liability of $1.7 million in this business combination that is included in long-term liabilities in the accompanying consolidated balance sheet.

The estimated fair value of the intangible assets acquired was determined by the Company, and the Company considered or relied in part upon a valuation report of a third-party expert. The Company used an income approach to estimate the fair values of the identifiable intangible assets.

The Company incurred costs related to this acquisition of $0.6 million that were expensed as incurred and recorded in general and administrative expenses in the accompanying consolidated statement of operation.

Pro forma results of operations for this acquisition are not presented as the financial impact to the Company's consolidated financial statements is immaterial.

*Core Network Dynamics GmbH*

In August 2018, the Company acquired all outstanding shares of Core Network Dynamics GmbH ("CND"), a developer and provider of a complete software mobile network infrastructure based in Germany, for a total purchase price of $11.1 million, paid in cash, of which $2.0 million was withheld by the Company for a term of 18 months and is recorded in other long-term liabilities in the accompanying consolidated balance sheet.

Additionally, the Company granted 35,950 restricted stock units of the Company's Class A common stock to a former shareholder of CND that had a value of $2.2 million and is subject to

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**5. Business Combinations (Continued)**

vesting over a period of three years. The Company is recording a stock-based compensation expense as the shares are vesting.

The acquisition was accounted for as a business combination and the total purchase price was allocated to the net tangible and intangible assets and liabilities based on their fair values on the acquisition date and the excess was recorded as goodwill. The acquired entity's results of operations have been included in the consolidated financial statements of the Company from the date of acquisition.

The following table presents the preliminary purchase price allocation recorded in the Company's consolidated balance sheet as of December 31, 2018 (in thousands):

| | Total |
|---|---|
| Net tangible assets | $ (313) |
| Intangible assets[(1)] | 4,500 |
| Goodwill[(2)] | 6,869 |
| Total purchase price | $ 11,056 |

(1) Identifiable finite-lived intangible assets were comprised of the following (in thousands):

| | Total | Estimated life (in years) |
|---|---|---|
| Developed technology | $ 3,910 | 4 |
| Customer relationships | 590 | 0.5 |
| Total intangible assets acquired | $ 4,500 | |

(2) The goodwill is primarily attributable to the future cash flows to be realized from the operating synergies between the acquired technology platform and the Company's Programmable Wireless products. The Company intends to file elections that make the goodwill deductible for U.S. tax purposes.

The Company acquired a net deferred tax liability of $1.2 million in this business combination that is included in long-term liabilities in the accompanying consolidated balance sheet.

The estimated fair value of the intangible assets acquired was determined by the Company, and the Company considered or relied in part upon a valuation report of a third-party expert. The Company used a replacement cost approach to estimate the fair values of the identifiable intangible assets.

The Company incurred costs related to this acquisition of $0.8 million that were expensed as incurred and have been recorded in general and administrative expenses in the accompanying consolidated statement of operation.

Pro forma results of operations for this acquisition are not presented as the financial impact to the Company's consolidated financial statements is immaterial.

**5. Business Combinations (Continued)**

**Fiscal 2017 Acquisitions**

***Beepsend, AB***

In February 2017, the Company completed its acquisition of Beepsend AB, a messaging provider based in Sweden, specializing in messaging and SMS solutions, for a total purchase price of $23.0 million, paid in cash, of which $5.0 million was held in escrow with a term of 18 months and was fully released at the escrow expiration date.

Additionally, the Company deposited $2.0 million into a separate escrow account that was subject to certain service conditions and was released to certain employees on the first and second anniversaries of the closing date as the conditions were met. This amount was recorded as prepaid compensation in the accompanying consolidated balance sheet and was amortized into expense as the services were rendered.

The acquisition was accounted for as a business combination and, accordingly, the total purchase price was allocated to the preliminary net tangible and intangible assets and liabilities based on their preliminary fair values on the acquisition date. The prepaid compensation subject to service conditions was accounted for as a post-acquisition compensation expense and recorded as research and development expense in the accompanying consolidated statements of operations.

The acquired entity's results of operations were included in the consolidated financial statements of the Company from the date of acquisition.

The following table presents the purchase price allocation, as adjusted, recorded in the Company's consolidated balance sheet (in thousands):

| | Total |
|---|---|
| Net tangible liabilities | $ (3,575) |
| Intangible assets(1) | 13,700 |
| Goodwill(2) | 12,837 |
| Total purchase price | $ 22,962 |

(1) Identifiable finite-lived intangible assets were comprised of the following:

| | Total | Estimated life (in years) |
|---|---|---|
| Developed technology | $ 5,000 | 4 |
| Customer relationships | 6,100 | 7 - 8 |
| Supplier relationships | 2,600 | 5 |
| Total intangible assets acquired | $ 13,700 | |

(2) Goodwill represents the excess of purchase price over the fair value of identifiable tangible and intangible assets acquired and liabilities assumed. The goodwill in this transaction is primarily attributable to the future cash flows to be realized from the

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**5. Business Combinations (Continued)**

acquired technology platform, existing customer and supplier relationships as well as operational synergies. Goodwill is deductible for tax purposes.

The Company acquired a net deferred tax liability of $2.6 million in this business combination that is included in the long-term liabilities in the accompanying consolidated balance sheet.

The estimated fair value of the intangible assets acquired was determined by the Company, and the Company considered or relied in part upon a valuation report of a third-party expert. The Company used income approaches to estimate the fair values of the identifiable intangible assets. Specifically, the developed technology asset class was valued using the-relief-from royalty method, while the customer relationships asset class was valued using a multi-period excess earnings method and the supplier relationships asset class was valued using an incremental cash flow method.

The Company incurred costs related to this acquisition of $0.7 million, of which $0.3 million and $0.4 million were incurred during fiscal years 2017 and 2016, respectively. All acquisition related costs were expensed as incurred and have been recorded in general and administrative expenses in the accompanying consolidated statements of operations.

Pro forma results of operations for this acquisition are not presented as the financial impact to the Company's consolidated financial statements is immaterial.

***Kurento Open Source Project***

In November 2016, the Company acquired certain assets from Tikal Technologies S.L., a Spanish corporation, behind the Kurento Open Source Project. The acquired assets consisted of (a) proprietary WebRTC media processing technologies, (b) certain licenses, patents and trademarks and (c) certain employee relationships behind the WebRTC technology. The purchase price consisted of $8.5 million in cash, of which $1.5 million was placed into escrow to indemnify the Company against breaches of general representations, warranties, claims and tax compliance matters. The escrow is effective for 24 months and 10 days from the acquisition date and may be extended under certain circumstances.

The acquisition was accounted for as a business combination and, accordingly, the total purchase price was allocated to the identifiable intangibles assets acquired based on their respective fair values on the acquisition date. The excess of the purchase price over the fair values of the identifiable assets acquired was recorded as goodwill. The Company considered or relied in part upon a valuation report of a third-party expert.

The following table presents the final purchase price allocation recorded in the Company's consolidated balance sheet (in thousands):

| | Total |
|---|---|
| Intangible assets[1] | $ 8,100 |
| Goodwill[2] | 400 |
| Total purchase price | $ 8,500 |

(1) The intangible assets consist of developed technology with the estimated useful life of 3 years on the date of acquisition.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**5. Business Combinations (Continued)**

(2) The goodwill in this transaction is primarily attributable to the future cash flows to be realized from the acquired technology and the future development initiatives of the acquired workforce. The goodwill is deductible for tax purposes.

The Company incurred cost related to this acquisition of $0.1 million that were expensed as incurred and have been recorded in general and administrative expenses in the accompanying consolidated statement of operations.

## 6. Goodwill and Intangible Assets

***Goodwill***

Goodwill balance as of December 31, 2018 and 2017 was as follows (in thousands):

| | Total |
|---|---|
| Balance as of December 31, 2016 | $ 3,565 |
| Goodwill recorded in connection with 2017 acquisition | 12,688 |
| Measurement period adjustment | 149 |
| Effect of exchange rate | 1,449 |
| Balance as of December 31, 2017 | $ 17,851 |
| Goodwill recorded in connection with 2018 acquisitions | 20,356 |
| Measurement period adjustment | 571 |
| Effect of exchange rate | (613) |
| Balance as of December 31, 2018 | $ 38,165 |

***Intangible assets***

Intangible assets consisted of the following (in thousands):

| | As of December 31, 2018 | | |
|---|---|---|---|
| | Gross | Accumulated Amortization | Net |
| Amortizable intangible assets: | | | |
| Developed technology | $ 28,209 | $ (10,497) | $ 17,712 |
| Customer relationships | 8,153 | (2,411) | 5,742 |
| Supplier relationships | 2,696 | (973) | 1,723 |
| Trade name | 60 | (60) | — |
| Patent | 2,264 | (178) | 2,086 |
| Total amortizable intangible assets | 41,382 | (14,119) | 27,263 |
| Non-amortizable intangible assets: | | | |
| Domain names | 32 | — | 32 |
| Trademarks | 263 | — | 263 |
| Total | $ 41,677 | $ (14,119) | $ 27,558 |

TWILIO INC.

Notes to Consolidated Financial Statements (Continued)

**6. Goodwill and Intangible Assets (Continued)**

| | As of December 31, 2017 | | |
|---|---|---|---|
| | Gross | Accumulated Amortization | Net |
| Amortizable intangible assets: | | | |
| Developed technology | $ 14,941 | $ (5,476) | $ 9,465 |
| Customer relationships | 7,159 | (1,006) | 6,153 |
| Supplier relationships | 2,881 | (500) | 2,381 |
| Trade name | 60 | (60) | — |
| Patent | 1,878 | (108) | 1,770 |
| Total amortizable intangible assets | 26,919 | (7,150) | 19,769 |
| Non-amortizable intangible assets: | | | |
| Domain names | 32 | — | 32 |
| Trademarks | 263 | — | 263 |
| Total | $ 27,214 | $ (7,150) | $ 20,064 |

Amortization expense was $7.2 million, $5.7 million and $0.9 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Total estimated future amortization expense was as follows (in thousands):

| | As of December 31, 2018 |
|---|---|
| 2019 | $ 9,724 |
| 2020 | 6,337 |
| 2021 | 4,922 |
| 2022 | 3,198 |
| 2023 | 892 |
| Thereafter | 2,190 |
| Total | $ 27,263 |

## 7. Accrued Expenses and Other Liabilities

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

| | As of December 31, 2018 | As of December 31, 2017 |
|---|---|---|
| Accrued payroll and related | $ 9,886 | $ 4,898 |
| Accrued bonus and commission | 8,564 | 4,777 |
| Accrued cost of revenue | 29,901 | 10,876 |
| Sales and other taxes payable | 23,631 | 20,877 |
| ESPP contributions | 2,672 | 1,338 |
| Deferred rent | 1,418 | 1,048 |
| Nonrefundable deposits | 3,415 | 162 |
| VAT liability | 2,217 | 2,515 |
| Accrued other expense | 18,054 | 7,123 |
| Total accrued expenses and other current liabilities | $ 99,758 | $ 53,614 |

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

| | As of December 31, 2018 | As of December 31, 2017 |
|---|---|---|
| Deferred rent | $ 7,569 | $ 8,480 |
| Deferred tax liability | 5,181 | 2,452 |
| Acquisition holdback | 2,290 | — |
| Capital lease obligation | 2,170 | — |
| Accrued other expense | 959 | 477 |
| Total other long-term liabilities | $ 18,169 | $ 11,409 |

## 8. Convertible Senior Notes and Capped Call Transactions

In May 2018, the Company issued $550.0 million aggregate principal amount of 0.25% convertible senior notes due 2023 in a private placement, including $75.0 million aggregate principal amount of such Notes pursuant to the exercise in full of the over-allotment options of the initial purchasers (collectively, the "Notes"). The interest on the Notes is payable semi-annually in arrears on June 1 and December 1 of each year, beginning on December 1, 2018.

The Notes may bear special interest under specified circumstances relating to the Company's failure to comply with its reporting obligations under the indenture relating to the issuance of Notes (the "indenture") or if the Notes are not freely tradeable as required by the indenture. The Notes will mature on June 1, 2023, unless earlier repurchased or redeemed by the Company or converted pursuant to their terms. The total net proceeds from the debt offering, after deducting initial purchaser discounts and debt issuance costs, paid or payable by us, were approximately $537.0 million.

Each $1,000 principal amount of the Notes is initially convertible into 14.1040 shares of the Company's Class A common stock par value $0.001, which is equivalent to an initial conversion price of approximately $70.90 per share. The conversion rate is subject to adjustment upon the occurrence of

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**8. Convertible Senior Notes and Capped Call Transactions (Continued)**

certain specified events but will not be adjusted for any accrued and unpaid special interest. In addition, upon the occurrence of a make-whole fundamental change, as defined in the indenture, the Company will, in certain circumstances, increase the conversion rate by a number of additional shares for a holder that elects to convert its Notes in connection with such make-whole fundamental change or during the relevant redemption period.

Prior to the close of business on the business day immediately preceding March 1, 2023, the Notes may be convertible at the option of the holders only under the following circumstances:

(1) during any calendar quarter commencing after September 30, 2018, and only during such calendar quarter, if the last reported sale price of the Class A common stock for at least 20 trading days (whether or not consecutive) in a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is more than or equal to 130% of the conversion price on each applicable trading day;

(2) during the five business days period after any five consecutive trading day period in which, for each trading day of that period, the trading price per $1,000 principal amount of Notes for such trading day was less than 98% of the product of the last reported sale price of the Class A common stock and the conversion rate on each such trading day;

(3) upon the Company's notice that it is redeeming any or all of the Notes; or

(4) upon the occurrence of specified corporate events.

On or after March 1, 2023, until the close of business on the second scheduled trading day immediately preceding the maturity date, holders of the Notes may, at their option, convert all or a portion of their Notes regardless of the foregoing conditions.

Upon conversion, the Company will pay or deliver, as the case may be, cash, shares of Class A common stock, or a combination of cash and shares of Class A Common Stock, at the Company's election. It is the Company's current intent to settle the principal amount of the Notes with cash.

During the year ended December 31, 2018, the conditions allowing holders of the Notes to convert were not met. The Company may redeem the Notes, in whole or in part, at its option, on or after June 1, 2021 but before the 35th scheduled trading day before the maturity date, at a cash redemption price equal to 100% of the principal amount of the Notes to be redeemed, plus accrued and unpaid interest, if any, if the last reported sale price of the Class A Common Stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading days ending on, and including, the trading day immediately before the date the redemption notices were sent; and the trading day immediately before such notices were sent.

No sinking fund is provided for the Notes. Upon the occurrence of a fundamental change (as defined in the indenture) prior to the maturity date, holders may require the Company to repurchase all or a portion of the Notes for cash at a price equal to 100% of the principal amount of the Notes to be repurchased, plus any accrued and unpaid interest to, but excluding, the fundamental change repurchase date.

The Notes are senior 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; equal in right of payment with the Company's existing and future liabilities that are not so subordinated; effectively

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**8. Convertible Senior Notes and Capped Call Transactions (Continued)**

subordinated to any of the Company's secured indebtedness to the extent of the value of the assets securing such indebtedness; and structurally junior to all indebtedness and other liabilities (including trade payables) of current or future subsidiaries of the Company.

The foregoing description is qualified in its entirety by reference to the text of the indenture and the form of 0.25% convertible senior notes due 2023, which were filed as exhibits to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018 and are incorporated herein by reference.

In accounting for the issuance of the Notes, the Company separated the Notes into liability and equity components. The carrying amount of the liability component was calculated by measuring the fair value of a similar debt instrument that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was $119.4 million and was determined by deducting the fair value of the liability component from the par value of the Notes. The equity component is not remeasured as long as it continues to meet the conditions for equity classification. The excess of the principal amount of the liability component over its carrying amount, or the debt discount, is amortized to interest expense at an annual effective interest rate of 5.7% over the contractual terms of the Notes.

In accounting for the transaction costs related to the Notes, the Company allocated the total amount incurred to the liability and equity components of the Notes based on the proportion of the proceeds allocated to the debt and equity components. Issuance costs attributable to the liability component were approximately $10.2 million, were recorded as an additional debt discount and are amortized to interest expense using the effective interest method over the contractual terms of the Notes. Issuance costs attributable to the equity component were netted with the equity component in stockholders' equity.

The net carrying amount of the liability component of the Notes was as follows (in thousands):

| | As of December 31, 2018 |
|---|---|
| Principal | $ 550,000 |
| Unamortized discount | (106,484) |
| Unamortized issuance costs | (9,020) |
| Net carrying amount | $ 434,496 |

The net carrying amount of the equity component of the Notes was as follows (in thousands):

| | As of December 31, 2018 |
|---|---|
| Proceeds allocated to the conversion options (debt discount) | $ 119,435 |
| Issuance costs | (2,819) |
| Net carrying amount | $ 116,616 |

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**8. Convertible Senior Notes and Capped Call Transactions (Continued)**

The following table sets forth the interest expense recognized related to the Notes (in thousands):

| | Year Ended December 31, 2018 |
|---|---|
| Contractual interest expense | $ 852 |
| Amortization of debt issuance costs | 1,102 |
| Amortization of debt discount | 12,951 |
| Total interest expense related to the Notes | $ 14,905 |

In connection with the offering of the Notes, the Company entered into privately-negotiated capped call transactions with certain counterparties (the "capped calls"). The capped calls each have an initial strike price of approximately $70.90 per share, subject to certain adjustments, which corresponds to the initial conversion price of the Notes. The capped calls have initial cap prices of $105.04 per share, subject to certain adjustments. The capped calls cover, subject to anti-dilution adjustments, approximately 7,757,200 shares of Class A Common Stock. The capped calls are generally intended to reduce or offset the potential dilution to the Class A Common Stock upon any conversion of the Notes with such reduction or offset, as the case may be, subject to a cap based on the cap price. The capped calls expire on the earlier of (i) the last day on which any convertible securities remain outstanding and (ii) June 1, 2023, subject to earlier exercise. The capped calls are subject to either adjustment or termination upon the occurrence of specified extraordinary events affecting the Company, including a merger event, a tender offer, and a nationalization, insolvency or delisting involving the Company. In addition, the capped calls are subject to certain specified additional disruption events that may give rise to a termination of the capped calls, including changes in law, insolvency filings, and hedging disruptions. The capped call transactions are recorded in stockholders' equity and are not accounted for as derivatives. The net cost of $58.5 million incurred to purchase the capped call transactions was recorded as a reduction to additional paid-in capital in the accompanying consolidated balance sheet.

**9. Supplemental Balance Sheet Information**

A roll-forward of the Company's reserves for the years ended December 31, 2018, 2017 and 2016 is as follows (in thousands):

***(a) Allowance for doubtful accounts:***

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| Balance, beginning of period | $ 1,033 | $ 1,076 | $ 486 |
| Additions | 4,085 | 580 | 1,145 |
| Write-offs | (173) | (623) | (555) |
| Balance, end of period | $ 4,945 | $ 1,033 | $ 1,076 |

TWILIO INC.

Notes to Consolidated Financial Statements (Continued)

**9. Supplemental Balance Sheet Information (Continued)**

***(b) Sales credit reserve:***

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Balance, beginning of period | $ 1,761 | $ 544 | $ 714 |
| Additions | 5,560 | 2,531 | 1,348 |
| Deductions against reserve | (4,306) | (1,314) | (1,518) |
| Balance, end of period | $ 3,015 | $ 1,761 | $ 544 |

**10. Revenue by Geographic Area**

Revenue by geographic area is based on the IP address at the time of registration. The following table sets forth revenue by geographic area (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Revenue by geographic area: | | | |
| United States | $ 484,809 | $ 308,612 | $ 233,922 |
| International | 165,258 | 90,408 | 43,413 |
| Total | $ 650,067 | $ 399,020 | $ 277,335 |
| Percentage of revenue by geographic area: | | | |
| United States | 75% | 77% | 84% |
| International | 25% | 23% | 16% |

Long-lived assets outside the United States were not significant.

**11. Commitments and Contingencies**

***(a) Lease Commitments***

The Company entered into various non-cancelable operating lease agreements for its facilities that expire over the next ten years. Certain operating leases contain provisions under which monthly rent escalates over time. When lease agreements contain escalating rent clauses or free rent periods, the Company recognizes rent expense on a straight-line basis over the term of the lease.

In September 2018, the Company entered into a sub-lease agreement ("Sub-lease") for a total of 259,416 rentable square feet of office space at 101 Spear Street in San Francisco, California. The Sub-lease covers several floors for which the terms commence on December 1, 2018 and April 1, 2020, and will be expiring at various dates between March 2025 and June 2028. The Company secured its lease obligation with a $14.7 million letter of credit, which it designated as restricted cash on its balance sheet as of December 31, 2018. The Company intends for this location to become its headquarters at some time in 2019. The total lease payments range from $0.8 million per month to $2.2 million per month. The Sub-lease contains a bargain purchase option for the Company to acquire the existing furniture in the leased space for $1 at the end of the lease term. This option was treated as a capital lease under ASC 840—*"Leases"* and as of December 31, 2018, $2.5 million was recorded as assets under capital lease within the property, plant and equipment balance in the accompanying

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**11. Commitments and Contingencies (Continued)**

consolidated balance sheet. The corresponding capital lease obligation was recorded as current and long-term liabilities.

In January 2016, the Company entered into a lease agreement ("Lease"), as subsequently amended, for approximately 90,000 square feet of new office space at 375 Beale Street in San Francisco, California, that houses its principal executive office. The term of the Lease is approximately 96 months following the commencement in October 2016, and the lease payments range from $0.4 million per month in the first 60 months to $0.5 million per month thereafter. The Lease included a tenant improvement allowance to cover construction of certain leasehold improvements for up to $8.3 million. All applicable amounts were collected from the landlord as of December 31, 2017. Based on the terms of the landlord incentive and involvement of the Company in the construction process, the leasehold improvements were determined to be property of the Company. The Company initially secured its lease obligation with a $7.4 million letter of credit, which was designated as restricted cash on its balance sheet as of December 31, 2016. This amount is periodically reduced as stipulated in the lease agreement.

Rent expense was $10.3 million, $8.1 million and $7.3 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Future minimum lease payments under non-cancelable operating leases were as follows (in thousands):

| Year Ending December 31: | As of December 31, 2018 |
|---|---|
| 2019 | $ 24,128 |
| 2020 | 29,527 |
| 2021 | 30,898 |
| 2022 | 30,492 |
| 2023 | 30,122 |
| Thereafter | 81,316 |
| Total minimum lease payments | $ 226,483 |

Future minimum lease payments under the capital lease were as follows (in thousands):

| Year Ending December 31: | As of December 31, 2018 |
|---|---|
| 2019 | $ 306 |
| 2020 | 512 |
| 2021 | 573 |
| 2022 | 590 |
| 2023 | 608 |
| Thereafter | 1,939 |
| Total minimum lease payments | $ 4,528 |

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**11. Commitments and Contingencies (Continued)**

Additionally, the Company has noncancellable contractual commitments with its cloud infrastructure provider, network service providers and other vendors that are non-cancellable and expire within one to four years. Future minimum payments under these noncancellable purchase commitments were as follows (in thousands). Unrecognized tax benefits are not included in these amounts because any amounts expected to be settled in cash are not material:

| Year Ending December 31: | As of December 31, 2018 |
|---|---|
| 2019 | $ 37,623 |
| 2020 | 2,337 |
| 2021 | 1,023 |
| 2022 | 2,000 |
| 2023 | 5,000 |
| Total payments | $ 47,983 |

***(b) Legal Matters***

On April 30, 2015 and March 28, 2016, Telesign Corporation ("Telesign") filed lawsuits (which were subsequently consolidated) against the Company in the United States District Court, Central District of California ("Telesign I/II"). Telesign alleges in Telesign I/II that the Company is infringing four U.S. patents that it holds: U.S. Patent No. 7,945,034 ("034"), U.S. Patent No. 8,462,920 ("920"), U.S. Patent No. 8,687,038 ("038") and U.S. Patent No. 9,300,792 ("792"). The consolidated Telesign I/II actions have been transferred to the United States District Court, Northern District. The patent infringement allegations in the lawsuit relate to the Company's two-factor authentication use case, Authy, and an API tool to find information about a phone number. Telesign seeks, among other things, to enjoin us from allegedly infringing the patents, along with damages for lost profits.

On March 8, 2017, in response to a petition by the Company, the U.S. Patent and Trademark Officer ("PTO") issued an order instituting an inter partes review for the '792 patent. On March 6, 2018, the PTO found all claims challenged by the Company in the inter partes review unpatentable. On October 19, 2018, the district court granted the Company's motion that all asserted claims of the asserted patents are invalid under 35 U.S.C. § 101 and entered judgment in the Company's favor. On November 8, 2018, Telesign appealed the judgment to the United States Court of Appeals for the Federal Circuit where the case is now pending. Based on, among other things, final judgment being entered by the district court in the Company's favor, the Company does not believe a loss is reasonably possible or estimable.

On December 1, 2016, the Compamy filed a patent infringement lawsuit against Telesign in the United States District Court, Northern District of California ("Telesign III"), alleging indirect infringement of United States Patent No. 8,306,021 ("021"), United States Patent No. 8,837,465 ("465"), United States Patent No. 8,755,376 ("376"), United States Patent No. 8,736,051 ("051"), United States Patent No. 8,737,962 ("962"), United States Patent No. 9,270,833 ("833"), and United States Patent No. 9,226,217 ("217"). Telesign filed a motion to dismiss the complaint on January 25, 2017. In two orders, issued on March 31, 2017 and April 17, 2017, the court granted Telesign's motion to dismiss with respect to the '962, '833, '051 and '217 patents, but denied Telesign's motion to dismiss

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**11. Commitments and Contingencies (Continued)**

as to the '021, '465 and '376 patents. On August 23, 2017, Telesign petitioned the PTO for inter partes review of the '021, '465, and '376 patents. On March 9, 2018, the PTO denied Telesign's petition for inter partes review of the '021 patent and granted Telesign's petitions for inter partes review of the '465 and '376 patents. Telesign III is currently stayed pending resolution of the inter partes reviews of the '465 and '376 patents. The Company is seeking a judgment of infringement, a judgment of willful infringement, monetary and injunctive relief, enhanced damages, and an award of costs and expenses against Telesign.

On February 18, 2016, a putative class action complaint was filed in the Alameda County Superior Court in California, entitled Angela Flowers v. Twilio Inc. The complaint alleges that the Company's products permit the interception, recording and disclosure of communications at a customer's request and are in violation of the California Invasion of Privacy Act. The complaint seeks injunctive relief as well as monetary damages. On January 2, 2018, the court issued an order granting in part and denying in part the plaintiff's class certification motion. The court certified two classes of individuals who, during specified time periods, allegedly sent or received certain communications involving the accounts of three of the Company's customers that were recorded. Following mediation, on January 7, 2019, the parties signed a long-form settlement agreement, providing for a payment of $10 million into a common fund and injunctive relief involving certain updates to Twilio's Acceptable Use Policy and customer documentation. On January 15, 2019, the court entered an order granting preliminary approval of the settlement, and the parties signed an amended settlement agreement to conform to the court's order. A final approval hearing is scheduled for June 11, 2019. Given insurance coverage, the Company currently estimates its potential liability in the Flowers matter to be $1.7 million and reserved this amount in its consolidated balance sheet as of December 31, 2018, presented elsewhere in this Annual Report on Form 10-K.

On September 1, 2015, Twilio was named as a defendant in a First Amended Complaint in a putative class action captioned Jeremy Bauman v. David Saxe, et al. pending in the United States District Court, District of Nevada relating to the alleged sending of unsolicited text messages to the plaintiffs and putative class members. The Company filed a motion to dismiss, which was granted, and on September 20, 2016 the plaintiff filed a Second Amended Complaint with additional allegations that the Company violated the Telephone Consumer Protection Act ("TCPA"), and the Nevada Deceptive Trade Practices Act ("NDTPA"), NRS 41.600(2)(e). On January 10, 2019, the court granted Plaintiffs' motion for class certification under the TCPA and denied plaintiff's request to certify a class under the NDTPA. On February 13, 2019, the court issued an order denying the Company's motion to dismiss as to Plaintiffs' TCPA claim and granting dismissal as to Plaintiffs' NDTPA claim. The Company intends to vigorously defend itself against and believes it has meritorious defenses to this lawsuit. It is too early in these matters to reasonably predict the probability of the outcomes or to estimate the range of possible loss, if any.

***SendGrid Stockholder Litigation***

On December 5, 2018, purported stockholders of SendGrid filed putative class action complaints in the United States District Court for the District of Delaware, Rosenblatt v. SendGrid, Inc., et al., Case No. 1:18-cv-01931-UNA (the "Rosenblatt Complaint"), and in the United States District Court for the District of Colorado, Chen v. SendGrid, Inc., et al., Case No. 1:18-cv-03131-MEH (the "Chen Complaint"), against SendGrid, the individual members of the SendGrid board of directors (the "Individual Defendants"), Twilio and Topaz Merger Subsidiary, Inc. Thereafter, on December 19, 2018

**11. Commitments and Contingencies (Continued)**

and January 3, 2019, purported stockholders of SendGrid filed putative class action complaints against SendGrid and the Individual Defendants in the United States District Court for the District of Colorado, respectively, Bushansky v. SendGrid, Inc., et al., 1:18-cv-03260-SKC (the "Bushansky Complaint"), and Conner v. SendGrid, Inc., et al., 1:19-cv-00016-PAB-SKC (the "Conner Complaint"). As of February 11, 2019, all four complaints have been voluntarily dismissed.

Among other things, the Rosenblatt Complaint alleges that SendGrid and the Individual Defendants misrepresented and/or omitted material information in a registration statement on Form S-4, rendering it false and misleading and in violation of the Exchange Act and related regulations. In addition, the Rosenblatt Complaint alleges that the Individual Defendants and Twilio acted as controlling persons within the meaning and in violation of Section 20(a) of the Exchange Act to influence and control the dissemination of the allegedly defective registration statement on Form S-4. The Rosenblatt Complaint seeks, among other things, rescission of the merger or rescissory damages, an order directing the SendGrid board of directors to file a registration statement on Form S-4 that does not contain any untrue statements of material fact and states all material facts, a declaration that the defendants violated Sections 14(a) and/or 20(a) of the Exchange Act and Rule 14a-9 promulgated thereunder and an award of plaintiff costs, including reasonable attorneys' and experts' fees. On February 11, 2019, the Rosenblatt Complaint was voluntarily dismissed.

Among other things, the Chen Complaint alleges that the defendants misrepresented and/or omitted material information in a registration statement on Form S-4, rendering it false and misleading and in violation of the Exchange Act and related regulations. In addition, the Chen Complaint alleges that the Individual Defendants acted as controlling persons within the meaning and in violation of Section 20(a) of the Exchange Act to influence and control the dissemination of the allegedly defective Form S-4. The Chen Complaint also alleges that the Individual Defendants breached their fiduciary duties to SendGrid stockholders, and that the other defendants aided and abetted such breaches, by seeking to sell SendGrid through an allegedly unfair process and for an unfair price and on unfair terms, and by failing to disclose all material information. The Chen Complaint seeks, among other things, rescission of the merger or rescissory damages, an order directing the SendGrid board of directors to commence a new sale process, a declaration that the merger agreement was agreed to in breach of the Individual Defendants' fiduciary duties and is therefore unlawful and unenforceable, an order directing the defendants to account to the putative class for damages allegedly sustained, and an award of plaintiff costs, including reasonable attorneys' and experts' fees. On February 4, 2019, the Chen Complaint was voluntarily dismissed.

Among other things, the Bushansky and Conner Complaints allege that SendGrid and the Individual Defendants misrepresented and/or omitted material information in a Schedule 14A Definitive Proxy Statement, rendering it false and misleading and in violation of the Exchange Act and related regulations. In addition, the Bushansky and Conner Complaints allege that the Individual Defendants acted as controlling persons within the meaning and in violation of Section 20(a) of the Exchange Act to influence and control the dissemination of the allegedly defective Schedule 14A Definitive Proxy Statement. The Bushansky and Conner Complaints seek, among other things, rescission of the merger or rescissory damages, and an award of plaintiff costs, including reasonable attorneys' and experts' fees. On February 4, 2019, the Bushansky Complaint was voluntarily dismissed. On February 11, 2019, the Conner Complaint was voluntarily dismissed.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**11. Commitments and Contingencies (Continued)**

In addition to the litigation matters discussed above, from time to time, the Company is a party to legal action and subject to claims that arise in the ordinary course of business. The claims are investigated as they arise and loss estimates are accrued, when probable and reasonably estimable. While it is not feasible to predict or determine the ultimate outcome of these matters, the Company believes that these legal proceedings will not have a material adverse effect on its financial position or results of operations.

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.

***(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, the Company enters into contractual arrangements under which it agrees to provide indemnification of varying scope and terms to business partners 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 may be conditional on the other party making a claim pursuant to the procedures specified in the particular contract. Further, the Company's obligations under these agreements may be limited in terms of time and/or amount, and in some instances, the Company may have recourse against third parties for certain payments. The terms of such obligations may vary.

As of December 31, 2018 and 2017, no amounts were accrued.

***(d) Other Taxes***

The Company conducts operations in many tax jurisdictions throughout the United States. In many of these jurisdictions, non-income-based taxes, such as sales and use and telecommunications taxes are assessed on the Company's operations. Prior to March 2017, the Company had not billed nor collected these taxes from its customers and, in accordance with U.S. GAAP, recorded a provision for its tax exposure in these jurisdictions when it was both probable that a liability had been incurred and the amount of the exposure could be reasonably estimated. These estimates included several key assumptions including, but not limited to, the taxability of the Company's services, the jurisdictions in which its management believes it has nexus, and the sourcing of revenues to those jurisdictions. Starting in March 2017, the Company began collecting these taxes from customers in certain jurisdictions, and since then, has expanded the number of jurisdictions where these taxes are being collected. Effective January 2018, the Company began to collect taxes in one additional jurisdiction and accordingly, from January 2018, the Company is not recording an additional provision for its exposure for new activities in that jurisdiction. The Company expects to continue to expand the number of jurisdictions where

**11. Commitments and Contingencies (Continued)**

these taxes will be collected in the future. Simultaneously, the Company was and continues to be in discussions with certain states regarding its prior state sales and other taxes, if any, that the Company may owe.

During 2017, the Company revised its estimates of its tax exposure based on settlements reached with various states indicating that certain revisions to the key assumptions including, but not limited to, the sourcing of revenue and the taxability of the Company's services were appropriate in the current period. In the year ended December 31, 2017, the total impact of these changes on the net loss attributable to common stockholders was a reduction of $13.4 million. As of December 31, 2018 and 2017, the liability recorded for these taxes was $22.6 million and $20.9 million, respectively.

In the event other jurisdictions challenge management's assumptions and analysis, the actual exposure could differ materially from the current estimates.

## 12. Stockholders' Equity

***(a) Preferred Stock***

As of December 31, 2018 and 2017, the Company had authorized 100,000,000 shares of preferred stock, par value $0.001, of which no shares were issued and outstanding.

***(b) Common Stock***

In June 2016, the Company completed an initial public offering ("IPO") in which the Company sold 11,500,000 shares of its newly authorized Class A common stock, which included 1,500,000 shares sold pursuant to the exercise by the underwriters of an option to purchase additional shares, at the public offering price of $15.00 per share. The Company received net proceeds of $155.5 million, after deducting underwriting discounts and offering expenses paid by the Company, from the sale of its shares in the IPO. Immediately prior to the completion of the IPO, all shares of common stock then outstanding were reclassified as shares of Class B common stock and all shares of convertible preferred stock then outstanding were converted into 54,508,441 shares of common stock on a one-to-one basis, and then reclassified as shares of Class B common stock.

In October 2016, the Company completed a follow-on public offering ("FPO") in which the Company sold 1,691,222 shares of its Class A common stock, which included 1,050,000 shares sold pursuant to the exercise by the underwriters of an option to purchase additional shares, at a public offering price of $40.00 per share. In addition, another 6,358,778 shares of the Company's Class A common stock were sold by the selling stockholders of the Company, which included 906,364 shares sold pursuant to the exercise of employee stock options by certain selling stockholders. The Company received aggregate proceeds of $64.4 million, after deducting underwriting discounts and offering expenses paid and payable by the Company. The Company did not receive any of the net proceeds from the sales of shares by the selling stockholders.

As of December 31, 2018 and 2017, 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 $0.001 per share. As of December 31, 2018, 80,769,763 shares of Class A common stock and 19,310,465 shares of Class B common stock were issued and outstanding. As of December 31, 2017, 69,906,550 shares of Class A common stock and 24,063,246 shares of Class B common stock were issued and outstanding. Holders of Class A and Class B common stock are entitled to one vote per share and 10 votes per share,

**12. Stockholders' Equity (Continued)**

respectively, and the shares of Class A common stock and Class B common stock are identical, except for voting and conversion rights. The outstanding Class B common stock as of the year ended December 31, 2017 included 180,000 shares related to the Authy acquisition which was released from escrow during 2018.

The Company had reserved shares of common stock for issuance as follows:

| | As of December 31, 2018 | As of December 31, 2017 |
|---|---|---|
| Stock options issued and outstanding | 7,978,369 | 10,710,427 |
| Nonvested restricted stock units issued and outstanding | 8,262,902 | 5,665,459 |
| Class A common stock reserved for Twilio.org | 572,676 | 635,014 |
| Stock-based awards available for grant under 2016 Plan | 9,313,354 | 10,200,189 |
| Stock-based awards available for grant under 2016 ESPP | 3,092,779 | 2,478,343 |
| Class A common stock reserved for the convertible senior notes | 10,472,165 | — |
| Total | 39,692,245 | 29,689,432 |

***(c) Twilio.org***

In September 2015, the Company's board of directors approved the establishment of Twilio.org and committed 1% of the Company's outstanding capital stock to fund Twilio.org's activities. Through Twilio.org, which is a part of the Company and not a separate legal entity, the Company donates and discounts its products to nonprofits, who use the Company's products to engage their audience, expand their reach and focus on making a meaningful change in the world. In the years ended December 31, 2018 and 2017, Twilio.org donated $7.1 million and $1.2 million to the qualified recipients consistent with its philanthropic mission. As of December 31, 2018, the Company had 572,676 shares reserved for Twilio.org activities.

**13. Stock-Based Compensation**

***2008 Stock Option Plan***

The Company maintained a stock plan, the 2008 Stock Option Plan, as amended and restated (the "2008 Plan"), which allowed the Company to grant incentive ("ISO"), 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 board of directors. Under the 2008 Plan, options to purchase the Company's common stock could not be granted at a price less than fair value in the case of ISOs and NSOs. Fair value was determined by the board of directors, in good faith, with input from valuation consultants. On June 22, 2016, the plan was terminated in connection with the Company's IPO. Accordingly, no shares are available for future issuance under the 2008 Plan. The 2008 Plan continues to govern outstanding equity awards granted thereunder. The Company's right of first refusal for outstanding equity awards granted under the 2008 Plan terminated upon completion of the IPO. Options granted include provisions for early exercisability.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

**13. Stock-Based Compensation (Continued)**

***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, 2018 and 2017, the shares available for grant under the 2016 Plan were automatically increased by 4,698,490 shares and 4,362,427 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. Under both 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 new-hire options and restricted stock units is generally a four-year term from the date of grant, at a rate of 25% after one year, then monthly or quarterly, respectively, on a straight-line basis thereafter. In July 2017, the Company began granting restricted stock units to existing employees that vest in equal quarterly installments over a four year service period.

***2016 Employee Stock Purchase Plan***

The Company's Employee Stock Purchase Plan ("2016 ESPP") became 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 will automatically increase each January 1, beginning on January 1, 2017, by the lesser of 1,800,000 shares of the 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, 2018 and 2017, the shares available for grant under the 2016 Plan were automatically increased by 939,698 and 872,485 shares, respectively.

The 2016 ESPP allows eligible employees to purchase shares of the Company's Class A common stock at a discount of up to 15% through payroll deductions of their eligible compensation, subject to any plan limitations. Except for the initial offering period, the 2016 ESPP provides for separate six-month offering periods beginning in May and November of each fiscal year, starting in May 2017.

On each purchase date, eligible employees will 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.

In the years ended December 31, 2018 and 2017, 325,262 shares and 794,142 shares of Class A common stock were purchased under the 2016 ESPP and 113,312 shares are expected to be purchased in the second quarter of 2019. As of December 31, 2018, total unrecognized compensation cost related to the 2016 ESPP was $2.2 million, which will be amortized over a weighted-average period of 0.4 years.

**13. Stock-Based Compensation (Continued)**

Stock options activity under the 2008 Plan and 2016 Plan was 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, 2017 | 10,155,427 | $ 10.31 | 7.12 | $ 145,763 |
| Granted | 1,330,118 | 39.77 | | |
| Exercised | (3,628,032) | 8.20 | | |
| Forfeited and cancelled | (434,144) | 19.70 | | |
| Outstanding options as of December 31, 2018 | 7,423,369 | $ 16.07 | 6.80 | $ 543,640 |
| Options vested and exercisable as of December 31, 2018 | 4,529,504 | $ 9.38 | 5.96 | $ 362,017 |

Aggregate intrinsic value represents the difference between the Company's estimated fair value of its common stock and the exercise price of outstanding "in-the-money" options. Prior to the IPO, the fair value of the Company's common stock was estimated by the Company's board of directors. After the IPO, the fair value of the Company's common stock is the Company's Class A common stock price as reported on the New York Stock Exchange. The aggregate intrinsic value of stock options exercised was $178.5 million, $132.0 million and $54.4 million during the years ended December 31, 2018, 2017 and 2016, respectively.

The total estimated grant date fair value of options vested was $21.8 million, $15.8 million and $15.3 million during the years ended December 31, 2018, 2017 and 2016, respectively. The weighted-average grant-date fair value of options granted was $18.40, $13.33 and $5.52 during the years ended December 31, 2018, 2017 and 2016, respectively.

On February 28, 2017, the Company granted a total of 555,000 shares of performance-based stock options in three distinct awards to an employee with grant date fair values of $13.48, $10.26 and $8.41 per share for a total grant value of $5.9 million. The first half of each award vests upon satisfaction of a performance condition and the remainder vests thereafter in equal monthly installments over a 24-month period. The achievement window expires after 4.3 years from the date of grant and the stock options expire seven years after the date of grant. The stock options are amortized over a derived service period, as adjusted, of 3.1 years, 3.9 years and 4.6 years, respectively. The stock options value

**13. Stock-Based Compensation (Continued)**

and the derived service period were estimated using the Monte-Carlo simulation model. The following table summarizes the details of the performance 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, 2017 | 555,000 | $ 31.72 | 6.0 | $ — |
| Granted | — | — | | |
| Exercised | — | — | | |
| Forfeited and cancelled | — | — | | |
| Outstanding options as of December 31, 2018 | 555,000 | $ 31.72 | 6.0 | $ — |
| Options vested and exercisable as of December 31, 2018 | 185,000 | $ 31.72 | 5.16 | $ 10,652 |

As of December 31, 2018, total unrecognized compensation cost related to nonvested stock options was $35.4 million, which will be amortized on a ratable basis over a weighted-average period of 2.02 years.

***Restricted Stock Units***

| | Number of options outstanding | Weighted-average grant date fair value (per share) | Aggregate intrinsic value (in thousands) |
|---|---|---|---|
| Nonvested RSUs as of December 31, 2017 | 5,665,459 | $ 29.29 | $ 133,648 |
| Granted | 5,556,817 | 49.70 | |
| Vested | (2,142,776) | 29.50 | |
| Forfeited and cancelled | (816,598) | 31.96 | |
| Nonvested RSUs as of December 31, 2018 | 8,262,902 | $ 42.70 | $ 729,373 |

Prior to the completion of the Company's IPO, the Company granted RSUs ("Pre-IPO RSUs") under its 2008 Plan to its employees that vested upon the satisfaction of both a time-based service condition and a liquidity condition. The time-based service condition for the majority of these awards will be satisfied over a period of four years. The liquidity condition was satisfied upon occurrence of the Company's IPO in June 2016. RSUs granted on or after the completion of the Company's IPO ("Post-IPO RSUs") are granted under the 2016 Plan and are subject to a time-based vesting condition only. The compensation expense related to these grants is based on the grant date fair value of the RSUs and is recognized on a straight-line basis over the applicable service period. The Post-IPO RSUs are generally earned over a service period of four years.

As of December 31, 2018, total unrecognized compensation cost related to nonvested RSUs was $325.3 million, which will be amortized over a weighted-average period of 3.03 years.

TWILIO INC.

Notes to Consolidated Financial Statements (Continued)

## 13. Stock-Based Compensation (Continued)

### *Valuation Assumptions*

The fair value of employee stock options was estimated on the date of grant using the following assumptions in the Black-Scholes option pricing model:

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| ***Employee Stock Options*** | | | |
| Fair value of common stock | $33.01 - $76.63 | $23.60 - $31.96 | $10.09 - $15.00 |
| Expected term (in years) | 1 - 6.08 | 6.08 | 6.08 |
| Expected volatility | 38.6% - 44.2% | 44.3% - 47.6% | 51.4% - 53.0% |
| Risk-free interest rate | 2.9% - 3.0% | 1.9% - 2.3% | 1.3% - 1.5% |
| Dividend rate | 0% | 0% | 0% |
| ***Employee Stock Purchase Plan*** | | | |
| Expected term (in years) | 0.5 | 0.5 | 0.90 |
| Expected volatility | 39.8% - 47.5% | 33.2% - 33.9% | 52% |
| Risk-free interest rate | 2.1% - 2.5% | 1.1% - 1.4% | 0.6% |
| Dividend rate | 0% | 0% | 0% |

The following assumptions were used in the Monte Carlo simulation model to estimate the fair value and the derived service period of the performance options:

| | |
|---|---|
| Asset volatility | 40% |
| Equity volatility | 45% |
| Discount rate | 14% |
| Stock price at grant date | $ 31.72 |

### Stock-Based Compensation Expense

The Company recorded the total stock-based compensation expense as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Cost of revenue | $ 1,126 | $ 650 | $ 291 |
| Research and development | 42,277 | 22,808 | 12,946 |
| Sales and marketing | 23,616 | 9,822 | 4,972 |
| General and administrative | 26,254 | 16,339 | 6,016 |
| Total | $ 93,273 | $ 49,619 | $ 24,225 |

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

### 14. Net Loss Per Share Attributable to Common Stockholders

The following table sets forth the calculation of basic and diluted net loss per share attributable to common stockholders during the periods presented (in thousands, except per share data):

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| Net loss attributable to common stockholders | $ (121,949) | $ (63,708) | $ (41,324) |
| Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted | 97,130,339 | 91,224,607 | 53,116,675 |
| Net loss per share attributable to common stockholders, basic and diluted | $ (1.26) | $ (0.70) | $ (0.78) |

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:

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| Stock options issued and outstanding | 7,978,369 | 10,710,427 | 14,649,276 |
| Nonvested restricted stock units issued and outstanding | 8,262,902 | 5,665,459 | 2,034,217 |
| Class A common stock reserved for Twilio.org | 572,676 | 635,014 | 680,397 |
| Class A common stock committed under 2016 ESPP | 113,312 | 235,372 | 597,038 |
| Conversion spread* | 233 | — | — |
| Unvested shares subject to repurchase | 1,250 | 5,214 | 49,580 |
| Total | 16,829,742 | 17,251,486 | 18,010,508 |

* Since the Company expects to settle the principal amount of its outstanding convertible senior notes in cash and any excess in shares of the Company's Class A common stock, the Company uses the treasury stock method for calculating any potential dilutive effect of the conversion spread on diluted net income per share, if applicable. The conversion spread will have a dilutive impact on diluted net income per share of Class A common stock when the average market price of the Company's Class A common stock for a given period exceeds the conversion price of $70.90 per share for the Notes. The conversion spread is calculated using the average market price of Class A common stock during the period, consistent with the treasury stock method.

**TWILIO INC.**

**Notes to Consolidated Financial Statements (Continued)**

## 15. Income Taxes

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

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| United States | $ (96,448) | $ (46,737) | $ (14,002) |
| International | (24,710) | (16,266) | (26,996) |
| Loss before provision for income taxes | $ (121,158) | $ (63,003) | $ (40,998) |

Provision for income taxes consists of the following (in thousands):

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| Current: | | | |
| Federal | $ — | $ 99 | $ — |
| State | 139 | 78 | 83 |
| Foreign | 881 | 823 | 214 |
| Total | 1,020 | 1,000 | 297 |
| Deferred: | | | |
| Federal | 29 | 28 | 2 |
| State | 19 | 10 | — |
| Foreign | (277) | (333) | 27 |
| Total | (229) | (295) | 29 |
| Provision for income taxes | $ 791 | $ 705 | $ 326 |

The following table presents a reconciliation of the statutory federal tax rate and the Company's effective tax rate for the years ended December 31, 2018, 2017 and 2016:

| | Year Ended December 31, 2018 | 2017 | 2016 |
|---|---|---|---|
| Tax benefit at federal statutory rate | 21% | 34% | 34% |
| State tax, net of federal benefit | 15 | 10 | 11 |
| Stock-based compensation | 31 | 47 | 23 |
| Credits | 8 | 8 | 2 |
| Foreign rate differential | (4) | (8) | (23) |
| Reserve for uncertain tax positions | — | — | (12) |
| Change in valuation allowance | (68) | (46) | (34) |
| Change in federal statutory rate | — | (45) | — |
| Other | (3) | (1) | (2) |
| Effective tax rate | 0% | (1)% | (1)% |

**15. Income Taxes (Continued)**

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 (in thousands):

| | As of December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Deferred tax assets: | | | |
| Net operating loss carryforwards | $ 116,190 | $ 56,138 | $ 31,090 |
| Accrued and prepaid expenses | 11,594 | 9,140 | 16,698 |
| Stock-based compensation | 11,147 | 7,131 | 5,368 |
| Research and development credits | 32,206 | 16,212 | 7,807 |
| Charitable contributions | 3,100 | 1,233 | 1,458 |
| Capped call | 13,175 | — | — |
| Debt issuance cost | 638 | — | — |
| Other | 194 | 472 | — |
| Gross deferred tax assets | 188,244 | 90,326 | 62,421 |
| Valuation allowance | (147,354) | (78,900) | (49,601) |
| Net deferred tax assets | 40,890 | 11,426 | 12,820 |
| Deferred tax liabilities: | | | |
| Capitalized software | (10,686) | (7,664) | (7,086) |
| Prepaid expenses | (838) | (1,015) | (452) |
| Acquired intangibles | (2,997) | (2,101) | (152) |
| Property and equipment | (1,990) | (2,380) | (4,931) |
| Convertible debt | (27,164) | — | — |
| Deferred commissions | (2,396) | (718) | (201) |
| Net deferred tax asset (liability) | $ (5,181) | $ (2,452) | $ (2) |

As of December 31, 2018, the Company had approximately $452.7 million in federal net operating loss carryforwards and $26.7 million in federal tax credits. If not utilized, the federal net operating loss and tax credit carryforwards will expire at various dates beginning in 2029.

As of December 31, 2018, the Company had approximately $347.1 million in state net operating loss carryforwards and $19.9 million in state tax credits. If not utilized, the state net operating loss carryforwards will expire at various dates beginning in 2026 The California state tax credits can be carried forward indefinitely.

As of December 31, 2018, the Company had foreign net operating loss carryovers of $8.1 million. The foreign net operating loss carryovers can be carried forward indefinitely.

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

**15. Income Taxes (Continued)**

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 net deferred tax assets will be realized, accordingly, a full valuation allowance has been established. The valuation allowance increased by approximately $68.5 million and $29.3 million during the years ended December 31, 2018 and 2017, respectively.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows (in thousands):

| | Year Ended December 31, | | |
|---|---|---|---|
| | 2018 | 2017 | 2016 |
| Unrecognized tax benefit, beginning of year | $ 9,445 | $ 12,275 | $ 1,679 |
| Gross increases for tax positions of prior years | 1,233 | 493 | 1,996 |
| Gross decrease for tax positions of prior years | (4) | (6,331) | — |
| Gross increases for tax positions of current years | 4,961 | 3,008 | 8,600 |
| Unrecognized tax benefit, end of year | $ 15,635 | $ 9,445 | $ 12,275 |

As of December 31, 2018, the Company had approximately $15.6 million of unrecognized tax benefits. If the $15.6 million is recognized, $0.9 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, 2018, the Company has accumulated $0.1 million in both interest and penalties related to uncertain tax positions.

The Company does not anticipate any significant changes within 12 months of December 31, 2018, in its uncertain tax positions that would be material to the 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, 2018, the tax years 2008 through the current period remain open to examination by the major jurisdictions in which the Company is subject to tax. Fiscal 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 not currently subject to U.S. federal, state and local, or non-U.S. income tax examinations by any tax authorities.

On December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (Tax Act). The Tax Act reduces the U.S. statutory corporate tax rate to 21%, effective January 1, 2018. Consequently, we recorded a decrease to the Company's

**15. Income Taxes (Continued)**

federal deferred tax assets of $28.0 million, which was fully offset by a reduction in the Company's valuation allowance for the year ended December 31, 2017. The other provisions of the Tax Act, including the one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings, did not have a material impact on the Company's financial statements as of December 31, 2018.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (SAB 118), which allowed companies to record provisional amounts .during a measurement period not to extend beyond one year of the enactment date. The Company's accounting for the Tax Act is complete and we did not have any signification adjustments to provisional amounts recorded as of December 31, 2017.

The Tax Act creates a new requirement that certain income (i.e., GILTI) earned by controlled foreign corporations (CFCs) must be included currently in the gross income of the CFCs' U.S. shareholder. Under U.S. GAAP, the Company is allowed to make an accounting policy choice of either (1) treating taxes due on future U.S. inclusions in taxable income related to GILTI as a current-period expense when incurred (the "period cost method") or (2) factoring such amounts into the measurement of its deferred taxes (the "deferred method"). The Company selected the period cost method.

**16. Subsequent Events**

On February 1, 2019, the Company acquired all outstanding shares of capital stock of SendGrid, the leading email API platform, by issuing 23.4 million shares of its Class A common stock for a total value of $2.6 billion. Pursuant to the Agreement and Plan of Merger and Reorganization, as amended, each outstanding share of SendGrid common stock was converted into 0.485 of a share of the Company's Class A common stock.

Pursuant to the acquisition method of accounting, the purchase price that was paid for SendGrid will be allocated to the underlying SendGrid 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 have not yet been completed.

During the year ended December 31, 2018, the Company incurred $3.6 million in expenses related to this transaction.

***********

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

None.

**Item 9A.** ***Controls and Procedures***

**(a) Evaluation of Disclosure Controls and Procedures**

Our management, with the participation of our Chief Executive Officer and 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.

Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2018, 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 Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosures.

**(b) 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 Chief Financial Officer, to provide reasonable assurance regarding the reliability of financing reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America.

Under the supervision and with the participation of our Chief Executive Officer and our 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, 2018, 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, 2018.

The effectiveness of our internal control over financial reporting as of December 31, 2018 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.

**Remediation of Material Weakness Disclosed in Fiscal Year 2017 Annual Report on Form 10-K**

As previously disclosed in Item 9A of Part II of our Annual Report on Form 10-K and for the year ended December 31, 2017, our management determined that our internal control over financial reporting was not effective as of December 31, 2017 due to a material weakness in controls related to the accounting for capitalized software whereas we did not obtain or generate sufficient relevant quality information to support the design and functioning of control activities over the accounting for capitalized software development costs. Specifically, our process level control over internal use software development costs did not effectively track and categorize software development costs incurred during the application development stage to quantify amounts that should be capitalized as a long-lived asset, rather than expensed as research and development expenses. Additionally, the review control of the capitalized software development costs was not operating at a sufficient level of precision to identify potential material misstatements.

To remediate the material weakness in our internal control over financial reporting described in Item 9A of Part II of our Annual Report on Form 10-K for the year ended December 31, 2017, we:

- Designed and implemented an enhanced internal process and process level controls to effectively capture, track and categorize relevant data related to capitalizable software development costs incurred during the application development stage;
- Enhanced management review controls over capitalized software development costs with increased precision to identify potential material misstatements; and
- Documented guidelines and provided trainings to personnel that are accountable for internal control over the capitalizable software development costs.

Management has determined that the remediation actions discussed above were effectively designed and demonstrated to be operating effectively for a sufficient period of time to enable us to conclude that the material weakness regarding internal control activities have been remediated as of December 31, 2018.

**(c) Changes in Internal Control**

Other than the action described under *"Remediation of Material Weakness Disclosed in Fiscal Year 2017 Annual Report on Form 10-K"* for the additional internal control implemented to remediate the material weakness described above, there were no other 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 quarter ended December 31, 2018 that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

**(d) Inherent Limitations on Effectiveness of Controls**

Our management, including our Chief Executive Officer and 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 Company 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.

# 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 2019 Annual Meeting of Stockholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2018.

### *Codes of Business Conduct and Ethics*

Our board of directors has adopted a Code of Business Conduct and Ethics that applies to all officers, directors and employees, which is available on our website at (investors.twilio.com) under "Governance Documents". 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 Business Conduct and Ethics and 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 our Proxy Statement relating to our 2019 Annual Meeting of Stockholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2018.

## 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 our Proxy Statement relating to our 2019 Annual Meeting of Stockholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2018.

## Item 13. *Certain Relationships and Related Transactions and Director Independence*

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2019 Annual Meeting of Stockholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2018.

## Item 14. *Principal Accountant Fees and Services*

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2019 Annual Meeting of Stockholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2018.

## Part IV

### Item 15. *Exhibits 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 October 15, 2018, by and among Twilio Inc., a Delaware corporation, SendGrid, Inc., a Delaware corporation, and Topaz Merger Subsidiary, Inc., a Delaware corporation | 8-K | 011-37806 | 2.1 | October 16, 2018 |
| 2.2 | First Amendment to Agreement and Plan of Merger and Reorganization, dated December 13, 2018, by and among Twilio Inc., a Delaware corporation, SendGrid, Inc., a Delaware corporation, and Topaz Merger Subsidiary, Inc., a Delaware corporation | | | | Filed herewith |
| 3.1 | Amended and Restated Certificate of Incorporation of Twilio Inc. | S-1A | 333-211634 | 3.1 | June 13, 2016 |
| 3.2 | Amended and Restated Bylaws of Twilio Inc. | S-1A | 333-211634 | 3.3 | June 13, 2016 |
| 4.1 | Form of Class A common stock certificate of Twilio Inc. | S-1 | 333-211634 | 4.1 | May 26, 2016 |
| 4.2 | Amended and Restated Investors' Rights Agreement, dated April 24, 2015, between Twilio Inc. and certain of its stockholders | S-1 | 333-211634 | 4.2 | May 26, 2016 |
| 4.3 | Indenture, dated as of May 17, 2018, between Twilio Inc. and Wilmington Trust, National Association, as trustee | 8-K | 001-37806 | 4.1 | May 18, 2018 |
| 4.4 | Form of 0.25% Convertible Senior Notes due 2023 (included in Exhibit 4.3) | 8-K | 001-37806 | 4.2 | May 18, 2018 |
| 10.1* | Form of Indemnification Agreement | S-1A | 333-211634 | 10.1 | June 13, 2016 |
| 10.2* | Twilio Inc. 2008 Stock Option Plan, as amended and restated, and forms of Stock Options Agreement and form of Stock Option Grant Notice | S-1 | 333-211634 | 10.2 | May 26, 2016 |
| 10.3* | Twilio Inc 2016 Stock Option and Incentive Plan, and forms of Agreements thereunder | S-1 | 333-211634 | 10.3 | May 26, 2016 |
| 10.4 | Office Lease, dated January 8, 2016, as amended January 8, 2016, between Twilio Inc. and Bay Area Headquarters Authority | S-1 | 333-211634 | 10.6 | May 26, 2016 |

| Exhibit Number | Description | Incorporated by Reference | | | |
|---|---|---|---|---|---|
| | | Form | File No. | Exhibit | Filing Date |
| 10.5 | 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 |
| 10.6 | 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 |
| 10.7* | Twilio Inc. 2016 Employee Stock Purchase Plan | S-1 | 333-211634 | 10.8 | May 26, 2016 |
| 10.8* | Offer letter with George Hu, dated February 28, 2017 | 8-K | 001-37806 | 10.1 | March 3, 2017 |
| 10.9* | Offer letter with Khozema Shipchandler, dated August 20, 2018 | 8-K | 001-37806 | 10.1 | October 25, 2018 |
| 10.10* | Chief Executive Officer Severance Plan dated March 28, 2018 and form of participation letter | 10-Q | 001-37806 | 10.1 | May 10, 2018 |
| 10.11* | Key Executive Severance Plan, dated March 28, 2018 and form of participation letter | 10-Q | 001-37806 | 10.2 | May 10, 2018 |
| 10.12 | Form of Capped Call Confirmation | 8-K | 001-37806 | 10.1 | May 18, 2018 |
| 10.13 | Form of Voting Agreement, dated October 15, 2018, by and between SendGrid, Inc. and certain holders of Class A Common Stock and Class B Common Stock of Twilio Inc. | 8-K | 001-37806 | 10.1 | October 16, 2018 |
| 10.14 | Form of Voting Agreement, dated October 15, 2018, by and between SendGrid, Inc. and certain holders of Class A Common Stock of Twilio Inc. | 8-K | 001-37806 | 10.2 | October 16, 2018 |
| 10.15 | Form of Voting Agreement, dated October 15, 2018, by and between Twilio Inc. and certain directors and officers of SendGrid, Inc. | 8-K | 001-37806 | 10.3 | October 16, 2018 |
| 10.16 | Form of Voting Agreement, dated October 15, 2018, by and between Twilio Inc. and a stockholder of SendGrid, Inc. and its affiliated entities. | 8-K | 001-37806 | 10.4 | October 16, 2018 |
| 21.1 | List of subsidiaries of the Registrant | | | | Filed herewith |
| 23.1 | Consent of KPMG, LLP, Independent Registered Public Accounting Firm | | | | Filed herewith |

| Exhibit Number | Description | Incorporated by Reference | | | |
|---|---|---|---|---|---|
| | | Form | File No. | Exhibit | Filing Date |
| 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 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** | Certification 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 |
| 101.INS | XBRL Instance Document. | | | | Filed herewith |
| 101.SCH | XBRL Taxonomy Extension Schema Document. | | | | Filed herewith |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document. | | | | Filed herewith |
| 101.DEF | XBRL Taxonomy Extension Definition Linkbase Document. | | | | Filed herewith |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document. | | | | Filed herewith |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document. | | | | Filed herewith |

+ Schedules and other similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The registrant hereby undertakes to furnish supplementally copies of any of the omitted schedules and other similar attachments upon request by the Securities and Exchange Commission.

* Indicates a management contract or compensatory plan or arrangement.

** 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.

**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. |
| Date: February 28, 2019 | /s/ JEFFREY LAWSON |
| | Jeffrey Lawson<br>*Director and Chief Executive Officer (Principal Executive Officer)* |
| Date: February 28, 2019 | /s/ KHOZEMA SHIPCHANDLER |
| | Khozema Shipchandler<br>*Chief Financial Officer (Principal Accounting and Financial Officer)* |
| Date: February 28, 2019 | /s/ RICHARD DALZELL |
| | Richard Dalzell<br>*Director* |
| Date: February 28, 2019 | /s/ BYRON DEETER |
| | Byron Deeter<br>*Director* |
| Date: February 28, 2019 | /s/ ELENA DONIO |
| | Elena Donio<br>*Director* |
| Date: February 28, 2019 | /s/ DONNA L. DUBINSKY |
| | Donna L. Dubinsky<br>*Director* |
| Date: February 28, 2019 | /s/ ERIKA ROTTENBERG |
| | Erika Rottenberg<br>*Director* |
| Date: February 28, 2019 | /s/ JEFF EPSTEIN |
| | Jeff Epstein<br>*Director* |

QuickLinks -- Click here to rapidly navigate through this document

**Exhibit 2.2**

**FIRST AMENDMENT TO**
**AGREEMENT AND PLAN OF MERGER AND REORGANIZATION**

This FIRST AMENDMENT TO THE AGREEMENT AND PLAN OF MERGER AND REORGANIZATION (this "*Amendment*"), dated as of December 13, 2018 is entered into by and among Twilio Inc., a Delaware corporation ("*Twilio*"); Topaz Merger Subsidiary, Inc., a Delaware corporation and a wholly owned subsidiary of Twilio ("*Merger Sub*"); and SendGrid, Inc., a Delaware corporation ("*SendGrid*" and collectively with Twilio and Merger Sub, the "*Parties*," and each a "*Party*"). Capitalized terms used herein and not otherwise defined shall have the same meanings as set forth in the Agreement and Plan of Merger and Reorganization, dated as of October 15, 2018, by and among the Parties (the "*Merger Agreement*").

WHEREAS, the Parties desire to amend the definition of Company UK Option and Section 2.4(b) of the Merger Agreement as set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein and for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. *Amendment to Section 8.12(n).* The definition of Company UK Option in Section 8.12(n) of the Merger Agreement shall be amended and restated in its entirety and shall read as follows:

"**Company UK Option**" means a Company Option granted under a Company UK Sub-Plan or otherwise held by a UK resident as agreed to by Parent and the Company."

2. *Amendment to Section 2.4(b).* Section 2.4(b) of the Merger Agreement shall be amended and restated in its entirety and shall read as follows:

> "(b) At the Effective Time, each Company UK Option that is outstanding and unexercised immediately prior to the Effective Time (whether or not vested) (other than a Company UK Option covered by *Section 2.4(c)*) shall, provided the holder thereof has so agreed on or prior to the Business Day prior to the Closing Date (absent which agreement, such Company UK Option shall lapse as of immediately prior to the Effective Time), be cancelled and converted into a right to receive the number of shares of Parent Class A Common Stock equal to (A) the result of (i) the number of Shares subject to the Company UK Option immediately prior to the Effective Time multiplied by the excess, if any, of (x) the Company Share Value over (y) the per share exercise price for Shares subject to the corresponding Company UK Option immediately prior to the Effective Time, *divided* by (ii) the Company Share Value *multiplied* by (B) the Exchange Ratio, with any fractional shares rounded down to the nearest whole share."

3. *Full Force and Effect.* Except as expressly amended hereby, each term, provision, Exhibit and Schedule of the Merger Agreement shall and does remain in full force and effect.

4. *References.* Each reference in the Merger Agreement to "this Agreement," "hereof," "herein" and "hereunder" and words of similar import referring to the Merger Agreement shall mean and be a reference to the Merger Agreement as amended by this Amendment. Notwithstanding anything to the contrary herein, all references in the Merger Agreement, the Company Disclosure Letter and the Parent Disclosure Letter to "the date hereof" or "the date of this Agreement" shall refer to October 15, 2018.

5. *Headings.* The headings contained in this Amendment are for reference purposes only and shall not affect in any way the meaning or interpretation of this Amendment.

6. *Miscellaneous*. The provisions of Sections 8.2 (Modification or Amendment), 8.4 (Counterparts; Effectiveness; .pdf Signature), 8.5 (Governing Law and Venue; Waiver of Jury Trial), 8.6 (Notices), 8.7 (Entire Agreement), 8.8 (No Third Party Beneficiaries), 8.10 (Severability), 8.11 (Interpretation) and 8.13 (Assignment) of the Merger Agreement shall apply to this Amendment *mutatis mutandis*.

IN WITNESS WHEREOF, the Parties have caused this Amendment to be duly executed and delivered as of the date first written above by their respective officers thereunto duly authorized.

**TWILIO INC.,**
a Delaware corporation

/s/ JEFFREY LAWSON

Jeffrey Lawson
*Director and Chief Executive Officer (Principal Executive Officer)*

By: /s/ JEFF LAWSON

Name: Jeff Lawson
Title: *Chief Executive Officer*

**TOPAZ MERGER SUBSIDIARY, INC.,**
a Delaware corporation

By: /s/ JEFF LAWSON

Name: Jeff Lawson
Title: *Chief Executive Officer*

**SENDGRID, INC.,**
a Delaware corporation

By: /s/ SAMEER DHOLAKIA

Name: Sameer Dholakia
Title: *President, Chief Executive Officer, Director and Chairman*

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**Exhibit 21.1**

**List of Subsidiaries of Twilio Inc.**

Twilio UK Limited (England and Wales)

Twilio Estonia OÜ (Estonia)

Aquarius Survivor LLC (Delaware, United States)

Twilio Colombia S.A.S. (Colombia)

Twilio IP Holding Limited (Ireland)

Twilio Ireland Limited (Ireland)

Twilio Germany GmbH (Germany)

Twilio Hong Kong Limited (Hong Kong)

Twilio Singapore Pte. Ltd. (Singapore)

Twilio Spain, S.L.(Spain)

Burgundy Acquisition LLC (Delaware, United States)

Twilio Sweden AB (Sweden)

Beepsend Invest AB (Sweden)

Twilio Australia Pty Ltd (Australia)

Twilio Berlin GmbH (Germany)

Twilio International (Delaware)

Twilio Czechia (Czechia)

Twilio Japan GK (Japan)

Twilio Netherland BV (The Netherlands)

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**Exhibit 23.1**

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors
Twilio Inc.:

We consent to the incorporation by reference in the registration statement (Nos. 333-212191, 333-224812 and 333-229580) on Form S-8 of Twilio Inc. of our reports dated February 28, 2019, with respect to the consolidated balance sheets of Twilio Inc. as of December 31, 2018 and 2017, 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, 2018, and the related notes (collectively, the consolidated financial statements), and the effectiveness of internal control over financial reporting as of December 31, 2018, which reports appear in the December 31, 2018 annual report on Form 10-K of Twilio Inc.

/s/ KPMG LLP

San Francisco, California
February 28, 2019

**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, Jeffrey 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 28, 2019

/s/ JEFFREY LAWSON

Jeffrey Lawson
*Chief Executive Officer (Principal Executive Officer)*

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**Exhibit 31.2**

**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 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 28, 2019

/s/ KHOZEMA SHIPCHANDLER

Khozema Shipchandler
*Chief Financial Officer (Principal Accounting and Financial Officer)*

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**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), Jeffrey Lawson, Chief Executive Officer of Twilio Inc. (the "Company"), and Khozema Shipchandler, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2018, 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 28, 2019

/s/ JEFFREY LAWSON

Jeffrey Lawson
*Chief Executive Officer (Principal Executive Officer)*

/s/ KHOZEMA SHIPCHANDLER

Khozema Shipchandler
*Chief Financial Officer (Principal Accounting and Financial Officer)*