

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

FORM 10-Q

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

For the quarterly period ended September 30, 2019

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

Commission File Number: 001-37806



TWILIO INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

26-2574840

(I.R.S. Employer Identification Number)

101 Spear Street, First Floor

San Francisco, California 94105

(Address of principal executive offices) (Zip Code)

(415) 390-2337

(Registrant's telephone number, including area code)

375 Beale Street, Suite 300

San Francisco, California 94105

(Former name or former address, if changed since last report)

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

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

As of October 25, 2019, 124,601,389 shares of the registrant's Class A common stock and 12,551,350 shares of registrant's Class B common stock were outstanding.

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

TWILIO INC.
Quarterly Report on Form 10-Q
For the Three Months Ended September 30, 2019
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Special Note Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q 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 Quarterly Report on Form 10-Q 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;
- 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;
- the evolution of technology affecting our products and markets;
- our ability to introduce new products and enhance existing products;
- our ability to comply with modified or new industry standards, 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 Signature-based Handling of Asserted Information Using toKENS ("SHAKEN") and Secure Telephone Identity Revisited ("STIR") standards (together, "SHAKEN/STIR") and other robocalling prevention and anti-spam standards and increased costs associated with such compliance;
- 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 work closely with email inbox service providers to maintain deliverability rates;
- our ability to pass on our savings associated with our platform optimization efforts to our customers;
- the impact and expected results from changes in our relationship with our larger customers;
- 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;
- 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;
- the sufficiency of our cash and cash equivalents to meet our liquidity needs;
- 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 customers' and other platform users' violation of our policies or other misuse of our platform; 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 Quarterly Report on Form 10-Q.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Quarterly Report on Form 10-Q 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 II, Item 1A, “Risk Factors” and elsewhere in this Quarterly Report on Form 10-Q. 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 Quarterly Report on Form 10-Q. 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 Quarterly Report on Form 10-Q 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 Quarterly Report on Form 10-Q to reflect events or circumstances after the date of this Quarterly Report on Form 10-Q 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 — FINANCIAL INFORMATION

Item 1. Financial Statements

TWILIO INC.
Condensed Consolidated Balance Sheets
(Unaudited)

	As of September 30, 2019	As of December 31, 2018
(in thousands)		
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 330,601	\$ 487,215
Short-term marketable securities	1,551,175	261,128
Accounts receivable, net	131,193	97,712
Prepaid expenses and other current assets	55,455	26,893
Total current assets	<u>2,068,424</u>	<u>872,948</u>
Restricted cash	75	18,119
Property and equipment, net	118,481	63,534
Operating right of use asset	148,069	—
Intangible assets, net	465,255	27,558
Goodwill	2,283,387	38,165
Other long-term assets	26,477	8,386
Total assets	<u>\$ 5,110,168</u>	<u>\$ 1,028,710</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 25,949	\$ 18,495
Accrued expenses and other current liabilities	135,544	96,343
Deferred revenue and customer deposits	26,015	22,972
Operating lease liability, current	22,211	—
Financing lease liability, current	6,509	—
Total current liabilities	<u>216,228</u>	<u>137,810</u>
Operating lease liability, noncurrent	134,755	—
Financing lease liability, noncurrent	8,174	—
Convertible senior notes, net	452,184	434,496
Other long-term liabilities	14,341	18,169
Total liabilities	<u>825,682</u>	<u>590,475</u>
Commitments and contingencies (Note 12)		
Stockholders' equity:		
Preferred stock	—	—
Class A and Class B common stock	137	100
Additional paid-in capital	4,868,261	808,527
Accumulated other comprehensive income	4,578	1,282
Accumulated deficit	(588,490)	(371,674)
Total stockholders' equity	<u>4,284,486</u>	<u>438,235</u>
Total liabilities and stockholders' equity	<u>\$ 5,110,168</u>	<u>\$ 1,028,710</u>

See accompanying notes to condensed consolidated financial statements.

TWILIO INC.
Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(In thousands, except share and per share amounts)			
Revenue	\$ 295,066	\$ 168,895	\$ 803,244	\$ 445,765
Cost of revenue	136,904	77,031	369,017	204,553
Gross profit	158,162	91,864	434,227	241,212
Operating expenses:				
Research and development	104,481	42,340	281,119	119,727
Sales and marketing	100,657	45,949	262,685	116,520
General and administrative	47,690	28,608	166,409	76,213
Total operating expenses	252,828	116,897	710,213	312,460
Loss from operations	(94,666)	(25,033)	(275,986)	(71,248)
Other income (expense), net	4,377	(1,939)	2,861	(3,172)
Loss before provision for income taxes	(90,289)	(26,972)	(273,125)	(74,420)
Income tax benefit (provision)	2,555	(84)	56,309	(371)
Net loss attributable to common stockholders	\$ (87,734)	\$ (27,056)	\$ (216,816)	\$ (74,791)
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.64)	\$ (0.28)	\$ (1.70)	\$ (0.78)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	136,400,739	98,019,629	127,506,529	96,359,437

See accompanying notes to condensed consolidated financial statements.

TWILIO INC.
Condensed Consolidated Statements of Comprehensive Loss
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Net loss	\$ (87,734)	\$ (27,056)	\$ (216,816)	\$ (74,791)
Other comprehensive income (loss):				
Unrealized gain on marketable securities	1,275	291	3,296	126
Foreign currency translation	—	(873)	—	(771)
Total other comprehensive income (loss)	1,275	(582)	3,296	(645)
Comprehensive loss attributable to common stockholders	\$ (86,459)	\$ (27,638)	\$ (213,520)	\$ (75,436)

See accompanying notes to condensed consolidated financial statements.

TWILIO INC.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)

	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				
(In thousands, except share amounts)								
Balance as of December 31, 2018	80,769,763	\$ 80	19,310,465	\$ 20	\$ 808,527	\$ 1,282	\$ (371,674)	\$ 438,235
Net loss	—	—	—	—	—	—	(36,503)	(36,503)
Exercises of vested stock options	748,679	1	1,023,984	1	15,326	—	—	15,328
Vesting of early exercised stock options	—	—	—	—	9	—	—	9
Vesting of restricted stock units	641,406	—	39,360	—	—	—	—	—
Value of equity awards withheld for tax liability	(5,860)	—	(4,431)	—	(1,062)	—	—	(1,062)
Conversion of shares of Class B common stock into shares of Class A common stock	4,339,519	4	(4,339,519)	(4)	—	—	—	—
Shares issued in acquisition	23,555,081	24	—	—	2,658,874	—	—	2,658,898
Equity awards assumed in acquisition	—	—	—	—	191,620	—	—	191,620
Unrealized gain on marketable securities	—	—	—	—	—	1,041	—	1,041
Stock-based compensation	—	—	—	—	59,947	—	—	59,947
Balance as of March 31, 2019	110,048,588	109	16,029,859	17	\$ 3,733,241	2,323	(408,177)	3,327,513
Net loss	—	—	—	—	—	—	(92,579)	(92,579)
Issuance of common stock in connection with a public offering, net of underwriter discounts	8,064,515	8	—	—	979,992	—	—	980,000
Costs related to the public offering	—	—	—	—	(953)	—	—	(953)
Exercises of vested stock options	313,924	—	503,797	1	9,926	—	—	9,927
Vesting of restricted stock units	675,028	1	29,576	—	—	—	—	1
Value of equity awards withheld for tax liability	(5,934)	—	(5,888)	—	(1,518)	—	—	(1,518)
Conversion of shares of Class B common stock into shares of Class A common stock	2,172,598	2	(2,172,598)	(2)	—	—	—	—
Shares issued under ESPP	108,895	—	—	—	8,254	—	—	8,254
Equity awards assumed in acquisition (measurement period adjustment)	—	—	—	—	(7,126)	—	—	(7,126)
Unrealized gain on marketable securities	—	—	—	—	—	980	—	980
Stock-based compensation	—	—	—	—	72,361	—	—	72,361
Balance as of June 30, 2019	121,377,614	120	14,384,746	16	4,794,177	3,303	(500,756)	4,296,860
Net loss	—	—	—	—	—	—	(87,734)	(87,734)
Exercises of vested stock options	231,571	—	351,563	—	6,845	—	—	6,845
Vesting of early exercised stock options	—	—	—	—	12	—	—	12
Vesting of restricted stock units	713,904	1	25,291	—	—	—	—	1
Value of equity awards withheld for tax liability	(5,860)	—	(5,888)	—	(1,568)	—	—	(1,568)
Conversion of shares of Class B common stock into shares of Class A common stock	2,158,562	2	(2,158,562)	(2)	—	—	—	—
Equity awards assumed in acquisition (measurement period adjustment)	—	—	—	—	(1,940)	—	—	(1,940)
Unrealized gain on marketable securities	—	—	—	—	—	1,275	—	1,275
Stock-based compensation	—	—	—	—	70,735	—	—	70,735
Balance as of September 30, 2019	124,475,791	\$ 123	12,597,150	\$ 14	\$ 4,868,261	\$ 4,578	\$ (588,490)	\$ 4,284,486

See accompanying notes to condensed consolidated financial statements.

TWILIO INC.
Condensed Consolidated Statements of Stockholders' Equity, continued
(Unaudited)

	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				
	(In thousands, except share amounts)							
Balance as of December 31, 2017	69,906,550	\$ 70	24,063,246	\$ 24	\$ 608,165	\$ 2,025	\$ (250,438)	\$ 359,846
Net loss	—	—	—	—	—	—	(23,729)	(23,729)
Adjustment to opening retained earnings due to adoption of ASC 606	—	—	—	—	—	—	713	713
Exercises of vested stock options	—	—	1,190,387	1	6,677	—	—	6,678
Vesting of early exercised stock options	—	—	—	—	21	—	—	21
Vesting of restricted stock units	491,501	—	52,716	—	—	—	—	—
Value of equity awards withheld for tax liability	(8,352)	—	(4,380)	—	(371)	—	—	(371)
Exercise of unvested stock options	—	—	—	—	—	—	—	—
Conversion of shares of Class B common stock into shares of Class A common stock	1,358,716	1	(1,358,716)	(1)	—	—	—	—
Unrealized loss on marketable securities	—	—	—	—	—	(317)	—	(317)
Foreign currency translation	—	—	—	—	—	731	—	731
Stock-based compensation	—	—	—	—	18,968	—	—	18,968
Balance as of March 31, 2018	71,748,415	71	23,943,253	24	\$ 633,460	2,439	(273,454)	362,540
Net loss	—	—	—	—	—	—	(24,006)	(24,006)
Exercises of vested stock options	—	—	960,414	1	7,036	—	—	7,037
Vesting of early exercised stock options	—	—	—	—	4	—	—	4
Vesting of restricted stock units	457,495	—	40,070	—	—	—	—	—
Value of equity awards withheld for tax liability	(5,860)	—	(5,888)	—	(539)	—	—	(539)
Conversion of shares of Class B common stock into shares of Class A common stock	4,109,726	4	(4,109,726)	(4)	—	—	—	—
Shares issued under ESPP	201,581	—	—	—	4,474	—	—	4,474
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)
Unrealized loss on marketable securities	—	—	—	—	—	152	—	152
Foreign currency translation	—	—	—	—	—	(629)	—	(629)
Stock-based compensation	—	—	—	—	22,487	—	—	22,487
Balance as of June 30, 2018	76,511,357	75	20,828,123	21	\$ 725,073	1,962	(297,460)	429,671
Net loss	—	—	—	—	—	—	(27,056)	(27,056)
Exercises of vested stock options	—	—	847,528	1	8,862	—	—	8,863
Vesting of early exercised stock options	—	—	—	—	1	—	—	1
Vesting of restricted stock units	511,713	—	40,069	—	—	—	—	—
Value of equity awards withheld for tax liability	(5,860)	—	(5,888)	—	(810)	—	—	(810)
Conversion of shares of Class B common stock into shares of Class A common stock	1,982,436	—	(1,982,436)	—	—	—	—	—
Unrealized loss on marketable securities	—	—	—	—	—	291	—	291
Foreign currency translation	—	—	—	—	—	(873)	—	(873)
Stock-based compensation	—	—	—	—	24,266	—	—	24,266
Balance as of September 30, 2018	78,999,646	\$ 75	19,727,396	\$ 22	757,392	\$ 1,380	\$ (324,516)	\$ 434,353

See accompanying notes to condensed consolidated financial statements.

TWILIO INC.
Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Nine Months Ended September 30,	
	2019	2018
	(in thousands)	
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	\$ (216,816)	\$ (74,791)
Adjustments to reconcile net loss to net cash provided by operating activities:		
Depreciation and amortization	79,295	18,246
Right-of-use asset amortization	16,732	—
Net amortization of investment premium and discount	(4,163)	(845)
Amortization of debt discount and issuance costs	17,689	8,374
Stock-based compensation	197,332	61,287
Tax benefit related to release of valuation allowance	(55,999)	—
Other adjustments	3,981	5,198
Changes in operating assets and liabilities:		
Accounts receivable	(27,619)	(39,643)
Prepaid expenses and other current assets	(20,743)	(6,600)
Other long-term assets	(10,756)	(3,681)
Accounts payable	4,333	1,641
Accrued expenses and other current liabilities	33,826	39,732
Deferred revenue and customer deposits	3,043	5,092
Operating right of use liability	(15,397)	—
Long-term liabilities	(2,714)	(1,177)
Net cash provided by operating activities	<u>2,024</u>	<u>12,833</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Acquisitions, net of cash acquired	146,957	(29,662)
Purchases of marketable securities and other investments	(1,769,125)	(213,533)
Proceeds from sales and maturities of marketable securities	475,260	113,497
Capitalized software development costs	(16,809)	(15,276)
Purchases of long-lived assets	(18,994)	(3,428)
Net cash used in investing activities	<u>(1,182,711)</u>	<u>(148,402)</u>
CASH FLOWS FROM FINANCING ACTIVITIES:		
Proceeds from a public offering, net of underwriting discount	980,000	—
Payments of costs related to the public offering	(850)	—
Proceeds from issuance of convertible senior notes	—	550,000
Payment of debt issuance costs	—	(12,877)
Purchase of capped call	—	(58,465)
Principal payments on notes payable	(5,400)	—
Principal payments on finance leases	(3,927)	—
Proceeds from exercises of stock options and issuances under ESPP	40,354	27,052
Value of equity awards withheld for tax liabilities	(4,148)	(1,720)
Net cash provided by financing activities	<u>1,006,029</u>	<u>503,990</u>
Effect of exchange rate changes on cash, cash equivalents and restricted cash	—	105
NET (DECREASE) INCREASE IN CASH, CASH EQUIVALENTS AND RESTRICTED CASH	<u>(174,658)</u>	<u>368,526</u>
CASH, CASH EQUIVALENTS AND RESTRICTED CASH—Beginning of period	505,334	120,788
CASH, CASH EQUIVALENTS AND RESTRICTED CASH —End of period	<u>\$ 330,676</u>	<u>\$ 489,314</u>
Cash paid for income taxes, net	<u>\$ 509</u>	<u>\$ 544</u>
Cash paid for interest	<u>\$ 1,406</u>	<u>\$ —</u>
NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Purchases of property, equipment and intangible assets, accrued but not paid	<u>\$ 1,478</u>	<u>\$ 785</u>
Finance lease right-of-use assets assumed in a business combination	<u>\$ 14,173</u>	<u>\$ —</u>
Purchases of property and equipment through finance leases	<u>\$ 3,141</u>	<u>\$ —</u>
Acquisition holdback	<u>\$ 4,230</u>	<u>\$ 2,000</u>
Acquisition - value of common stock issued, stock awards assumed and measurement period adjustments	<u>\$ 2,841,452</u>	<u>\$ —</u>
Stock-based compensation capitalized in software development costs	<u>\$ 5,711</u>	<u>\$ 4,434</u>

See accompanying notes to condensed consolidated financial statements.

TWILIO INC.
Notes to Condensed Consolidated Financial Statements
(Unaudited)

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 Australia, Bermuda, Colombia, Czech Republic, Estonia, France, Germany, Hong Kong, Ireland, Japan, the Netherlands, Singapore, Spain, Sweden, United Kingdom and the United States.

2. Summary of Significant Accounting Policies

(a) Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (“U.S. GAAP”) and applicable rules and regulations of the Securities and Exchange Commission (“SEC”) regarding interim financial reporting. Certain information and note disclosures normally included in the financial statements prepared in accordance with U.S. GAAP have been condensed or omitted pursuant to such rules and regulations. Therefore, these condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in our Annual Report on Form 10-K filed with the SEC on March 1, 2019 (“Annual Report”).

The condensed consolidated balance sheet as of December 31, 2018, included herein, was derived from the audited financial statements as of that date, but may not include all disclosures including certain notes required by U.S. GAAP on an annual reporting basis.

In the opinion of management, the accompanying unaudited condensed consolidated financial statements reflect all normal recurring adjustments necessary to present fairly the financial position, results of operations, comprehensive loss and cash flows for the interim periods, but are not necessarily indicative of the results of operations to be anticipated for the full year 2019 or any future period.

(b) Principles of Consolidation

The condensed 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, revenue allowances and sales credit reserves; recoverability of long-lived and intangible assets; capitalization and useful life of the Company’s capitalized internal-use software development costs; fair value 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 and accounts receivable. The Company maintains cash, cash equivalents 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 credit evaluations of the financial 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 three and nine months ended September 30, 2019 and 2018, respectively, no customer organization accounted for more than 10% of the Company's total revenue.

As of September 30, 2019, and December 31, 2018, no customer organization represented more than 10% of the Company's gross accounts receivable.

(e) Deferred Revenue and Customer Deposits

Deferred revenue is recorded when cash payments are received in advance of future usage on non-cancelable contracts. Customer refundable prepayments are recorded as customer deposits. During the three and nine months ended September 30, 2019, the Company recognized \$2.3 million and \$17.7 million of revenue, respectively, and during the three and nine months ended September 30, 2018, the Company recognized \$3.9 million and \$11.1 million of revenue, respectively, that was included in the deferred revenue and customer deposits balance as of the beginning of the year.

(f) 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 September 30, 2019, and December 31, 2018, were \$23.6 million and \$9.4 million, respectively, and are included in prepaid expenses and other current and long-term assets in the accompanying condensed consolidated balance sheets. Amortization of these assets was \$1.3 million and \$2.9 million in the three and nine months ended September 30, 2019, respectively, and \$0.4 million and \$0.9 million in the three and nine months ended September 30, 2018, respectively, and is included in sales and marketing expense in the accompanying condensed consolidated statements of operations.

(g) Recently Adopted Accounting Guidance

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU 2016-02, "*Leases (Topic 842)*", which was further clarified in July 2018 by ASU 2018-10, "*Codification Improvements to Topic 842, Leases*", and ASU 2018-11, "*Leases-Targeted Improvements*". ASU 2018-10 provides narrow amendments to clarify how to apply certain aspects of the new lease standard. ASU 2018-11 addresses implementation issues related to the new lease standard. The standard is effective for interim and annual reporting periods beginning after December 15, 2018. Under the new standard, lessees are required to recognize in the balance sheet the right-of-use ("ROU") assets and lease liabilities that arise from operating leases. The Company adopted the standard using the optional alternative method on a prospective basis with an effective date as of the beginning of the Company's fiscal year, January 1, 2019, and applied it to the operating leases that existed on that date. Prior year comparative financial information was not recast under the new standard and continues to be presented under ASC 840. The Company elected to utilize the package of practical expedients available for expired or existing contracts which allowed the Company to carryforward historical assessments of (a) whether contracts are or contain leases, (b) lease classification, and (c) initial direct costs. The Company elected the use of hindsight practical expedient in determining the lease term and assessing the likelihood that lease renewal, termination or purchase option will be exercised. The Company also elected to apply the short-term lease exception for all leases. Under the short-term lease exception, the Company will not recognize ROU assets or lease liabilities for leases that, at the acquisition date, have a remaining lease term of 12 months or less.

As a result of implementing this guidance, the Company recognized a \$123.5 million net operating ROU asset and a \$132.0 million operating lease liability in its condensed consolidated balance sheet as of January 1, 2019. The ROU asset was presented net of deferred rent of \$9.0 million as of January 1, 2019, in the accompanying condensed consolidated balance

sheet. In addition, on February 1, 2019, the Company acquired through its business combination with SendGrid approximately \$33.7 million in operating ROU assets, \$32.6 million in operating lease liability, \$14.2 million in finance ROU assets and \$13.6 million in finance lease liability.

The Company measured the lease liability at the present value of the future lease payments as of January 1, 2019. The Company used its incremental borrowing rate to discount the lease payments. The Company derived the discount rate, adjusted for differences in the term and payment patterns, from the information available at the adoption date. The right-of-use asset is valued at the amount of the lease liability adjusted for the remaining December 31, 2018, balance of unamortized lease incentives, prepaid rent and deferred rent. The lease liability is subsequently measured at the present value of unpaid future lease payments as of the reporting date with a corresponding adjustment to the right-of-use asset. Absent a lease modification, the Company will continue to utilize the January 1, 2019, incremental borrowing rate.

The Company recognizes operating lease costs on a straight-line basis and presents these costs as operating expenses within the consolidated statements of operations and comprehensive loss. Within the consolidated statements of cash flows the Company presents the lease payments made on the operating leases within the cash flows from operations and principal payments made on the finance leases as part of financing activities.

The financial results for the three and nine months ended September 30, 2019, are presented under the new standard, while the comparative periods presented are not adjusted and continue to be reported in accordance with the Company's historical accounting policy.

See Note 5, "Right-of-use Assets and Lease Liabilities" for further information.

In March 2019, the FASB issued ASU 2019-01, "*Codification Improvements*" to Leases (Topic 842). This pronouncement did not have a material impact on the Company's 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 periods beginning after December 15, 2019. The Company early adopted this guidance effective April 1, 2019. The adoption of this guidance did not have a material impact on the Company's 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 topics. 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 adopted this guidance effective April 1, 2019. The adoptions of this guidance did not 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 early adopted this guidance effective April 1, 2019. The adoption of this guidance did not have a material impact on the Company's consolidated financial statements.

(h) Recently Issued Accounting Guidance, 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 evaluating the impact of the adoption of this guidance on its consolidated financial statements.

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*. In April 2019, the FASB issued ASU 2019-04, “*Codification Improvements to Topic 326, Financial Instruments—Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments*,” which clarifies treatment of certain credit losses. In May 2019, the FASB issued ASU 2019-05, “*Financial Instruments — Credit Losses (Topic 326): Targeted Transition Relief*”, which permits an entity, upon adoption of ASU 2016-13, to irrevocably elect the fair value option (on an instrument-by-instrument basis) for eligible financial assets measured at amortized cost basis. These ASUs are effective for annual and interim periods beginning after December 15, 2019, and early adoption is permitted. The Company is evaluating the impact of this guidance on its consolidated financial statements.

3. Fair Value Measurements

The following tables provide the financial assets measured at fair value on a recurring basis as of September 30, 2019, and December 31, 2018:

	Amortized Cost or Carrying Value	Gross Unrealized Gains	Gross Unrealized Losses Less Than 12 Months	Fair Value Hierarchy as of September 30, 2019			Aggregate Fair Value
				Level 1	Level 2	Level 3	
(in thousands)							
Financial Assets:							
Cash and cash equivalents:							
Money market funds	\$ 184,880	\$ —	\$ —	\$ 184,880	\$ —	\$ —	\$ 184,880
Reverse repurchase agreements	57,500	—	—	—	57,500	—	57,500
Commercial paper	13,484	—	—	—	13,484	—	13,484
Total included in cash and cash equivalents	255,864	—	—	184,880	70,984	—	255,864
Marketable securities:							
U.S. Treasury securities	205,818	203	(60)	205,961	—	—	205,961
Corporate debt securities and commercial paper	1,341,337	4,023	(146)	5,000	1,340,214	—	1,345,214
Total marketable securities	1,547,155	4,226	(206)	210,961	1,340,214	—	1,551,175
Strategic investments	5,500	—	—	—	—	5,500	5,500
Total financial assets	\$ 1,808,519	\$ 4,226	\$ (206)	\$ 395,841	\$ 1,411,198	\$ 5,500	\$ 1,812,539

	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			Aggregate Fair Value
					Level 1	Level 2	Level 3	
(in thousands)								
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

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 September 30, 2019, the Company had no securities that were in unrealized loss position for over 12 months. 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 to sell any of these investments before recovery of the entire amortized cost basis. In addition, as of September 30, 2019, and 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 were required to be recognized during the three and nine months ended September 30, 2019 and 2018.

Interest earned on marketable securities was \$7.7 million and \$11.8 million in the three and nine months ended September 30, 2019, respectively, and \$0.8 million and \$2.2 million in the three and nine months ended September 30, 2018, respectively. The interest is recorded as other income (expense), net financial statement caption in the accompanying condensed consolidated statements of operations.

The following table summarizes the contractual maturities of marketable securities as of September 30, 2019, and December 31, 2018:

	As of September 30, 2019		As of December 31, 2018	
	Amortized Cost	Aggregate Fair Value	Amortized Cost	Aggregate Fair Value
(in thousands)				
Financial Assets:				
Less than one year	\$ 844,301	\$ 845,578	\$ 261,468	\$ 261,128
One to two years	702,854	705,597	—	—
Total	\$ 1,547,155	\$ 1,551,175	\$ 261,468	\$ 261,128

The Company enters into reverse securities repurchase agreements, primarily for short-term investments with maturities of 90 days or less. As of September 30, 2019, and December 31, 2018, the Company was party to reverse repurchase agreements totaling \$57.5 million and \$35.0 million, respectively, which were reported in cash and equivalents in the accompanying condensed consolidated balance sheets. 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.

In May and August 2019, the Company made strategic investments totaling \$5.5 million into privately held debt securities in which the Company does not have a controlling interest or significant influence. These securities are recorded at fair value in other long-term assets in the condensed consolidated balance sheet. The Company classifies its strategic investments as Level 3 within the fair value hierarchy based on the nature of the fair value inputs and judgment involved in the valuation process. There were no material changes to fair value of these securities during the three and nine months ended September 30, 2019.

As of September 30, 2019, and December 31, 2018, the fair value of the 0.25% convertible senior notes due 2023 (the “Notes”), as further described in Note 9 below, was approximately \$908.6 million and \$743.4 million, respectively. The fair value of the Notes is determined based on the closing price on the last trading day of the reporting period and is classified as a Level 2 security within the fair value hierarchy.

4. Property and Equipment

Property and equipment consisted of the following:

	As of September 30, 2019	As of December 31, 2018
(in thousands)		
Capitalized internal-use software development costs	\$ 93,823	\$ 72,647
Data center equipment ⁽¹⁾	19,241	—
Leasehold improvements	38,572	15,293
Office equipment	22,720	13,563
Furniture and fixtures ⁽¹⁾	7,865	4,918
Software	6,586	1,849
Total property and equipment	188,807	108,270
Less: accumulated depreciation and amortization	(70,326)	(44,736)
Total property and equipment, net	\$ 118,481	\$ 63,534

⁽¹⁾ Data center equipment and furniture and fixtures contain assets under finance leases. See Note 5 for further detail.

Depreciation and amortization expense was \$9.7 million and \$26.4 million for the three and nine months ended September 30, 2019, respectively, and \$5.0 million and \$13.5 million for the three and nine months ended September 30, 2018, respectively.

The Company capitalized \$8.8 million and \$22.5 million in internal-use software development costs in the three and nine months ended September 30, 2019, respectively, and \$6.7 million and \$19.8 million in the three and nine months ended September 30, 2018, respectively. Of this amount, stock-based compensation expense was \$2.5 million and \$5.7 million in the three and nine months ended September 30, 2019, respectively, and \$1.5 million and \$4.4 million in the three and nine months ended September 30, 2018, respectively.

Amortization of capitalized software development costs was \$4.4 million and \$12.5 million in the three and nine months ended September 30, 2019, respectively, and \$3.6 million and \$9.3 million in the three and nine months ended September 30, 2018, respectively.

5. Right-of-Use Asset and Lease Liabilities

The Company determines if an arrangement is a lease at inception. The Company presents the operating leases in long-term assets and current and long-term liabilities. Finance lease assets are included in property and equipment, net, and finance lease liabilities are presented in current and long-term liabilities in the accompanying condensed consolidated balance sheet as of September 30, 2019.

Right-of-use ("ROU") assets represent the Company's right to use an underlying asset for the lease term, and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As the Company's leases do not generally provide an implicit rate, the Company uses its incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. The Company's lease agreements may have lease and non-lease components, which the Company accounts for as a single lease component. The Company's lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term, and variable payments are recognized in the period they are incurred. The Company's lease agreements do not contain any residual value guarantees. Leases with an initial term of 12 months or less are not recorded on the balance sheet.

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

As of September 30, 2019, the Company had 21 leased properties, with remaining lease terms of 0.1 years to 9.6 years, some of which include options to extend the leases for up to 5.0 years.

The components of lease expense recorded in the condensed consolidated statement of operations were as follows:

	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2019
	(in thousands)	
Operating lease cost	\$ 8,336	\$ 23,782
Finance lease cost:		
Amortization of assets	1,610	4,299
Interest on lease liabilities	175	512
Short-term lease cost	1,748	5,088
Variable lease cost	1,002	2,569
Total net lease cost	<u>\$ 12,871</u>	<u>\$ 36,250</u>

Supplemental balance sheet information related to leases was as follows:

Leases	Classification	As of September 30, 2019
Assets:		(in thousands)
Operating lease assets	Operating right-of-use asset, net of accumulated amortization (a)	\$ 148,069
Finance lease assets	Property and equipment, net of accumulated depreciation (b)	13,855
Total leased assets		<u>\$ 161,924</u>
Liabilities:		
Current		
Operating	Operating lease liability, current	\$ 22,211
Finance	Financing lease liability, current	6,509
Noncurrent		
Operating	Operating lease liability, noncurrent	134,755
Finance	Finance lease liability, noncurrent	8,174
Total lease liabilities		<u>\$ 171,649</u>

(a) Operating lease assets are recorded net of accumulated amortization of \$16.8 million as of September 30, 2019.

(b) Finance lease assets are recorded net of accumulated depreciation of \$4.7 million as of September 30, 2019.

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

	Nine Months Ended September 30, 2019
Cash paid for amounts included in the measurement of lease liabilities (in thousands):	
Operating cash flows from operating leases	\$ 20,316
Operating cash flows from finance leases	\$ 491
Financing cash flows from finance leases	\$ 3,927
Weighted average remaining lease term (in years):	
Operating leases	6.6
Finance leases	2.9
Weighted average discount rate:	
Operating leases	5.8%
Finance leases	5.2%

Maturities of lease liabilities were as follows:

	As of September 30, 2019	
	Operating Leases	Finance Leases
	(in thousands)	
2019 (remaining 3 months)	\$ 6,539	\$ 1,892
2020	31,524	6,793
2021	29,385	3,905
2022	28,327	1,579
2023	27,843	890
Thereafter	68,521	897
Total lease payments	192,139	15,956
Less: imputed interest	(35,173)	(1,273)
Total lease obligations	156,966	14,683
Less: current obligations	(22,211)	(6,509)
Long-term lease obligations	\$ 134,755	\$ 8,174

Disclosures related to periods prior to adoption of the New Lease Standard

Rent expense was \$2.2 million and \$6.4 million in the three and nine months ended September 30, 2018, respectively.

As of September 30, 2019, the Company had additional operating lease obligations totaling \$58.9 million related to leases that will commence between the fourth quarter of 2019 and the second quarter of 2020 with a lease terms ranging from 1.8 to 6.8 years. The Company had an additional finance lease obligation of \$0.7 million related to a lease that will commence during the second quarter of 2020 with a lease term of 6.8 years.

Future minimum lease payment obligations under noncancelable operating and finance leases were as follows:

	As of December 31, 2018	
	Operating Leases	Finance Leases
	(in thousands)	
2019	\$ 24,128	\$ 306
2020	29,527	512
2021	30,898	573
2022	30,492	590
2023	30,122	608
Thereafter	81,316	1,939
Total lease payments	<u>\$ 226,483</u>	<u>\$ 4,528</u>

6. Business Combinations

Fiscal 2019 Acquisitions

Capio, Inc.

In June 2019, the Company acquired all outstanding shares of Capio, Inc. ("Capio"), a developer and provider of an automatic speech recognition technology based in Sunnyvale, California, for a total purchase price of \$14.4 million, paid in cash, of which \$4.0 million was withheld by the Company for a period of 18 months and an additional \$0.2 million was withheld for certain tax liabilities to be settled in the near term. These amounts are recorded in the long-term and short-term liabilities, respectively, in the accompanying condensed consolidated balance sheet.

Additionally, the Company granted 43,556 restricted stock units of the Company's Class A common stock to former Capio stockholders that had a value of \$5.9 million and are subject to vesting over a period of three years. The Company is recording stock-based compensation expense as the shares vest.

The acquisition was accounted for as a business combination and the total preliminary 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 condensed consolidated balance sheet as of September 30, 2019:

	Total
	(in thousands)
Net tangible liabilities assumed	\$ (542)
Intangible assets ⁽¹⁾	7,610
Goodwill ⁽²⁾	7,343
Total preliminary purchase price	<u>\$ 14,411</u>

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

	Total	Estimated life
	(in thousands)	(in years)
Developed technology and software	\$ 6,390	6
Customer relationships	1,220	4
Total intangible assets acquired	<u>\$ 7,610</u>	

⁽²⁾ Goodwill generated from this acquisition is primarily attributable to future cash flows to be realized from the acquired technology. The goodwill is not deductible for U.S. tax purposes.

The Company acquired a net deferred tax liability of \$0.8 million in this business combination that is included in the long-term liabilities in the accompanying condensed consolidated balance sheet.

The estimated fair value of the intangible assets acquired was determined by the Company, and the Company considered and 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.

During the three and nine months ended September 30, 2019, the Company incurred none and \$0.8 million of costs related to this acquisition that were expensed as incurred and recorded in general and administrative expenses in the accompanying condensed 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.

SendGrid, Inc.

In February 2019, the Company acquired all outstanding shares of SendGrid, Inc. ("SendGrid"), the leading email API platform, by issuing 23.6 million shares of its Class A common stock with a total value of \$2,658.9 million. The Company also assumed all of the outstanding stock options and restricted stock units of SendGrid as converted into stock options and restricted stock units, respectively, of the Company based on the conversion ratio provided in the Agreement and Plan of Merger and Reorganization, as amended (the "Merger Agreement").

The acquisition added additional products and services to the Company's offerings for its customers. With these additional products, the Company now offers an Email API and Marketing Campaigns product leveraging the Email API. The acquisition has also added new customers, new employees, technology and intellectual property assets.

The acquisition was accounted for as a business combination and the total preliminary 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 values assigned to the assets acquired and liabilities assumed are based on preliminary estimates of fair value available as of the date of this Quarterly Report on Form 10-Q and may be adjusted during the measurement period of up to 12 months from the date of acquisition as further information becomes available. Subsequent to the acquisition date of February 1, 2019, the Company recorded a total of \$9.0 million of measurement period adjustments to reduce its preliminary purchase price estimate, of which \$7.1 million and \$1.9 million were recorded in the second and third quarters of 2019, respectively. In the second quarter of 2019, the Company also recorded a \$7.0 million adjustment to its preliminary estimate of the acquired intangible assets. These adjustments originated as a result of further refinement of the assumptions used in the process of valuation of the acquired intangible assets and the pre-combination services of SendGrid employees reflected in the assumed equity awards. The cumulative net reduction to goodwill from these adjustments and their related tax impact in the nine months ended September 30, 2019, was \$1.2 million.

As of September 30, 2019, the primary areas that are still not finalized due to information that may become available and may result in further changes in the values assigned to various assets and liabilities include purchase consideration and purchase price, including related tax impact, and valuation of intangible assets.

The adjusted purchase price of \$2,841.5 million reflects the \$2,658.9 million fair value of 23.6 million shares of the Company's Class A common stock transferred as consideration for all outstanding shares of SendGrid, and the \$182.6 million fair value of the pre-combination services of SendGrid employees reflected in the equity awards assumed by the Company on the acquisition date.

The fair value of the 23.6 million shares transferred as consideration was determined on the basis of the closing market price of the Company's Class A common stock on the acquisition date. The fair value of the equity awards was determined (a) for options, by using a Black-Scholes option pricing model with the applicable assumptions as of the acquisition date, and (b) for restricted stock units, by using the closing market price of the Company's Class A common stock on the acquisition date.

The unvested stock awards assumed on the acquisition date will continue to vest as the SendGrid employees continue to provide services in the post-acquisition period. The fair value of these awards is recorded as share-based compensation expense over the respective vesting period of each award.

The preliminary purchase price components, as adjusted, are summarized in the following table:

	Total
	(in thousands)
Fair value of Class A common stock transferred	\$ 2,658,898
Fair value of the pre-combination service through equity awards	182,554
Total preliminary purchase price, as adjusted	<u>\$ 2,841,452</u>

The following table presents the preliminary purchase price allocation, as adjusted, recorded in the Company's condensed consolidated balance sheet as of September 30, 2019. The Company expects to continue to obtain information to assist it in determining the fair values of the net assets acquired on the acquisition date during the measurement period:

	Total
	(in thousands)
Cash and cash equivalents	\$ 156,783
Accounts receivable and other current assets	11,635
Property and equipment, net	38,350
Operating right of use asset	33,742
Intangible assets	483,000
Other assets	1,664
Goodwill	2,237,879
Accounts payable and other liabilities	(11,114)
Operating lease liability	(32,568)
Financing lease liability	(13,616)
Note payable	(5,387)
Deferred tax liability	(58,916)
Total purchase price	<u>\$ 2,841,452</u>

The Company acquired a net deferred tax liability of \$58.9 million in this business combination that is included in long-term liabilities in the accompanying condensed consolidated balance sheet. This amount was offset by a release of a valuation allowance on deferred tax assets of \$50.0 million.

Identifiable intangible assets are comprised of the following:

	Total	Estimated life
	(in thousands)	(in years)
Developed technology and software	\$ 294,000	7
Customer relationships	169,000	7
Trade names	20,000	5
Total intangible assets acquired	<u>\$ 483,000</u>	

Developed technology consists of software products and domain knowledge around email delivery developed by SendGrid, which enables the delivery of email reliably and at scale. Customer relationships consists of contracts with platform users that purchase SendGrid's products and services that carry distinct value. Trade names represent the Company's right to the SendGrid trade names and associated design, as it exists as of the acquisition closing date.

Goodwill generated from this acquisition primarily represents the value that is expected from the increased scale and synergies as a result of the integration of both businesses. Goodwill is not deductible for tax purposes.

The estimated fair value of the intangible assets acquired was determined by the Company, 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 developed technology, an incremental income approach to estimate the value of the customer relationships and a relief from royalty method to estimate the fair value of the trade name.

Net tangible assets were valued at their respective carrying amounts as of the acquisition date, as the Company believes that these amounts approximate their current fair values.

The acquired entity's results of operations were included in the Company's condensed consolidated financial statements from the date of acquisition, February 1, 2019. For the three and nine months ended September 30, 2019, SendGrid contributed net operating revenue of \$48.7 million and \$123.2 million, respectively, which is reflected in the accompanying condensed consolidated statement of operations. Due to the integrated nature of the Company's operations, the Company believes that it is not practicable to separately identify earnings of SendGrid on a stand-alone basis.

During the three and nine months ended September 30, 2019, the Company incurred costs related to this acquisition of \$0.3 million and \$13.2 million, respectively, that were expensed as incurred and recorded in general and administrative expenses in the accompanying condensed consolidated statement of operations.

The following pro forma condensed combined financial information gives effect to the acquisition of SendGrid as if it were consummated on January 1, 2018 (the beginning of the comparable prior reporting period), and includes pro forma adjustments related to the amortization of acquired intangible assets, share-based compensation expense and direct and incremental transaction costs reflected in the historical financial statements. Specifically, the following adjustments were made:

- For the three and nine months ended September 30, 2019, the Company's and SendGrid's direct and incremental transaction costs of \$0.3 million and \$40.2 million, respectively, are excluded from pro forma condensed combined net loss.
- For the three and nine months ended September 30, 2018, the Company's direct and incremental transaction costs of \$0.3 million and \$13.2 million, respectively, are included in the pro forma condensed combined net loss.
- In the three and nine months ended September 30, 2019, the pro forma condensed combined net loss includes a reversal of the valuation allowance release of \$1.4 million and \$50.0 million, respectively.
- In the nine months ended September 30, 2018, the pro forma condensed combined net loss includes a one-time tax benefit of \$53.5 million that would have resulted from the acquisition. There was no one-time tax benefit in the three months ended September 30, 2018. In the three and nine months ended September 30, 2018, the pro forma condensed combined net loss also includes an ongoing tax benefit of \$1.4 million and \$21.1 million, respectively.

This data is presented for informational purposes only and is not intended to represent or be indicative of the results of operations that would have been reported had the acquisition occurred on January 1, 2018. It should not be taken as representative of future results of operations of the combined company.

The following table presents the pro forma condensed combined financial information:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Revenue	\$ 295,066	\$ 206,093	\$ 816,990	\$ 551,207
Net loss attributable to common stockholders	\$ (81,088)	\$ (61,550)	\$ (236,928)	\$ (134,889)

7. Goodwill and Intangible Assets

Goodwill

Goodwill balance as of September 30, 2019, and December 31, 2018, was as follows:

	Total
	(in thousands)
Balance as of December 31, 2018	\$ 38,165
Goodwill additions related to 2019 acquisitions	2,246,398
Measurement period adjustments	(1,176)
Balance as of September 30, 2019	<u>\$ 2,283,387</u>

Intangible assets

Intangible assets consisted of the following:

	As of September 30, 2019		
	Gross	Accumulated Amortization	Net
Amortizable intangible assets:	(in thousands)		
Developed technology	\$ 328,598	\$ (43,138)	\$ 285,460
Customer relationships	178,374	(19,775)	158,599
Supplier relationships	2,696	(1,402)	1,294
Trade names	20,060	(2,727)	17,333
Patent	2,525	(251)	2,274
Total amortizable intangible assets	<u>532,253</u>	<u>(67,293)</u>	<u>464,960</u>
Non-amortizable intangible assets:			
Domain names	32	—	32
Trademarks	263	—	263
Total	<u>\$ 532,548</u>	<u>\$ (67,293)</u>	<u>\$ 465,255</u>

	As of December 31, 2018		
	Gross	Accumulated Amortization	Net
Amortizable intangible assets:	(in thousands)		
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	<u>41,382</u>	<u>(14,119)</u>	<u>27,263</u>
Non-amortizable intangible assets:			
Domain names	32	—	32
Trademarks	263	—	263
Total	<u>\$ 41,677</u>	<u>\$ (14,119)</u>	<u>\$ 27,558</u>

Amortization expense was \$20.0 million and \$52.9 million for the three and nine months ended September 30, 2019, respectively, and \$1.9 million and \$4.7 million for the three and nine months ended September 30, 2018, respectively.

Total estimated future amortization expense was as follows:

	As of September 30, 2019
	(in thousands)
2019 (remaining three months)	\$ 19,774
2020	78,079
2021	76,567
2022	74,801
2023	72,309
Thereafter	143,430
Total	<u>\$ 464,960</u>

8. Accrued Expenses and Other Liabilities

Accrued expenses and other current liabilities consisted of the following:

	As of September 30, 2019	As of December 31, 2018
	(in thousands)	
Accrued payroll and related	\$ 21,916	\$ 9,886
Accrued bonus and commission	10,524	8,564
Accrued cost of revenue	38,724	29,901
Sales and other taxes payable	30,157	23,631
ESPP contributions	9,297	2,672
Deferred rent	—	1,418
VAT liability	4,326	2,217
Acquisition holdback	2,240	—
Accrued other expense	18,360	18,054
Total accrued expenses and other current liabilities	<u>\$ 135,544</u>	<u>\$ 96,343</u>

Other long-term liabilities consisted of the following:

	As of September 30, 2019	As of December 31, 2018
	(in thousands)	
Deferred rent	\$ —	\$ 7,569
Deferred tax liability	7,711	5,181
Acquisition holdback	4,280	2,290
Capital lease obligation	—	2,170
Accrued other expense	2,350	959
Total other long-term liabilities	<u>\$ 14,341</u>	<u>\$ 18,169</u>

9. Notes Payable

(a) 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 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 three months ended September 30, 2019, the conditional conversion feature of the Notes was triggered as the last reported sale price of the Company's Class A common stock was more than or equal to 130% of the conversion price for at least 20 trading days (whether or not consecutive) in the period of 30 consecutive trading days ending on September 30, 2019 (the last trading day of the calendar quarter), and therefore the Notes are currently convertible, in whole or in part, at the option of the holders between October 1, 2019 through December 31, 2019. Whether the Notes will be convertible following such period will depend on the continued satisfaction of this condition or another conversion condition in the future. 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 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:

	As of September 30, 2019	As of December 31, 2018
	(in thousands)	
Principal	\$ 550,000	\$ 550,000
Unamortized discount	(90,183)	(106,484)
Unamortized issuance costs	(7,633)	(9,020)
Net carrying amount	<u>\$ 452,184</u>	<u>\$ 434,496</u>

The net carrying amount of the equity component of the Notes was as follows:

	As of September 30, 2019	As of December 31, 2018
	(in thousands)	
Proceeds allocated to the conversion options (debt discount)	\$ 119,435	\$ 119,435
Issuance costs	(2,819)	(2,819)
Net carrying amount	<u>\$ 116,616</u>	<u>\$ 116,616</u>

The following table sets forth the interest expense recognized related to the Notes:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Contractual interest expense	\$ 344	\$ 344	\$ 1,032	\$ 508
Amortization of debt issuance costs	471	446	1,387	657
Amortization of debt discount	5,536	5,233	16,302	7,717
Total interest expense related to the Notes	<u>\$ 6,351</u>	<u>\$ 6,023</u>	<u>\$ 18,721</u>	<u>\$ 8,882</u>

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 condensed consolidated balance sheet.

(b) Note Payable

In connection with the SendGrid acquisition, the Company assumed a \$5.4 million note payable with a financing company to acquire software and related professional services. During the three months ended September 30, 2019, the Company repaid the outstanding note principal and accrued interest and no balance is outstanding as of September 30, 2019.

10. Supplemental Balance Sheet Information

A roll-forward of the Company's reserves is as follows:

(a) Allowance for doubtful accounts:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Balance, beginning of period	\$ 4,773	\$ 2,536	\$ 4,945	\$ 1,033
Additions	676	1,111	1,057	2,626
Assumed in acquisition	—	—	59	—
Write-offs	(114)	(5)	(726)	(17)
Balance, end of period	<u>\$ 5,335</u>	<u>\$ 3,642</u>	<u>\$ 5,335</u>	<u>\$ 3,642</u>
Percentage of revenue	2%	2%	1%	1%

(b) Sales credit reserve:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Balance, beginning of period	\$ 3,076	\$ 2,625	\$ 3,015	\$ 1,761
Additions	5,861	1,651	11,127	4,301
Assumed in acquisition	—	—	277	—
Deductions against reserve	(3,834)	(773)	(9,316)	(2,559)
Balance, end of period	<u>\$ 5,103</u>	<u>\$ 3,503</u>	<u>\$ 5,103</u>	<u>\$ 3,503</u>
Percentage of revenue	2%	2%	1%	1%

11. Revenue by Geographic Area

Revenue by geographic area is based on the IP address or the mailing address at the time of registration. The following table sets forth revenue by geographic area:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Revenue by geographic area:	(in thousands)			
United States	\$ 210,986	\$ 125,697	\$ 572,537	\$ 335,575
International	84,080	43,198	230,707	110,190
Total	<u>\$ 295,066</u>	<u>\$ 168,895</u>	<u>\$ 803,244</u>	<u>\$ 445,765</u>
Percentage of revenue by geographic area:				
United States	72%	74%	71%	75%
International	28%	26%	29%	25%

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

12. Commitments and Contingencies

(a) Lease and Other Commitments

The Company entered into various non-cancelable operating lease agreements for its facilities that expire over the next 9.6 years. See Note 5 to these condensed consolidated financial statements for additional detail on the Company's operating and finance lease commitments.

In the three and nine months ended September 30, 2019, the Company entered into several non-cancelable vendor agreements with terms from one to four years for a total purchase commitment of \$4.5 million and \$15.6 million, respectively.

Additionally, in September 2019, the Company modified its contract with its cloud services vendor to consolidate and replace its existing commitments after the acquisition of SendGrid. Effective October 1, 2019, the total value of the Company's modified contract was \$100.0 million with the remaining term of 2.0 years.

(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 and damages based on a reasonable royalty.

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. Telesign did not appeal the PTO's decision, and it is final. On October 19, 2018, the district court granted the Company's motion that all remaining 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 Company filed a patent infringement lawsuit against Telesign in the United States District Court, Northern District of California (“Telesign III”), alleging 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 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. On March 6, 2019, the PTO found all claims challenged by Telesign in the *inter partes* review unpatentable. The Company has appealed the decisions to the United States Court of Appeals for the Federal Circuit. Telesign III is currently stayed pending resolution of the *inter partes* reviews (and appeals from them) 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 \$10.0 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. The court entered a final order and judgment approving the settlement on June 17, 2019. Previously, the Company had a \$1.7 million reserve on the condensed consolidated balance sheet for the estimated potential liability, net of insurance coverage. On August 30, 2019, Twilio made a payment of \$1.7 million to fund the settlement. A final compliance hearing has been scheduled for February 25, 2020. Any additional loss related to this matter is not probable or estimable at this time.

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. On February 22, 2019, the court stayed the case and directed all parties to mediation, which was conducted on May 15, 2019. On May 17, 2019, the original defendants (the “Saxe Defendants”) and the Company entered an agreement, which among other things, obligates the Saxe Defendants to fully fund all monetary and non-monetary aspects of the settlement of the matter and to obtain the dismissal of the plaintiffs’ and the class’s claims against the Company with prejudice. On October 7, 2019, the plaintiffs filed an unopposed motion for settlement and an unopposed motion to dismiss the Company from the action without prejudice. Based on, among other things, the dismissal motion and the Company’s agreement with the Saxe Defendants, the Company does not believe a loss is reasonably possible or estimable.

In addition to the litigation discussed above, from time to time, the Company may be subject to legal actions and claims in the ordinary course of business. The Company has received, and may in the future continue to receive, claims from third parties asserting, among other things, infringement of their intellectual property rights. Future litigation may be necessary to defend itself, its partners and its customers by determining the scope, enforceability and validity of third-party proprietary rights, or to establish its proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources, and other factors.

Legal fees and other costs related to litigation and other legal proceedings are expensed as incurred and are included in general and administrative expenses in the accompanying condensed 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 and in connection with our financing and business combinations transactions, the Company enters into contractual arrangements under which it agrees to provide indemnification of varying scope and terms to business partners, customers and other parties with respect to certain matters, including, but not limited to, losses arising out of the breach of such agreements, intellectual property infringement claims made by third parties and other liabilities relating to or arising from the Company's various products, or its acts or omissions. In these circumstances, payment 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 September 30, 2019 and December 31, 2018, 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 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.

As of September 30, 2019 and December 31, 2018, the liability recorded for these taxes was \$26.2 million and \$22.6 million, respectively.

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

13. Stockholders' Equity

(a) Preferred Stock

As of September 30, 2019 and December 31, 2018, 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

As of September 30, 2019 and December 31, 2018, 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 September 30, 2019 and December 31, 2018, 124,475,791 shares and 80,769,763 shares of Class A common stock and 12,597,150 shares and 19,310,465 shares of Class B common stock, respectively, 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, respectively, and the shares of Class A common stock and Class B common stock are identical, except for voting and conversion rights.

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

	As of September 30, 2019	As of December 31, 2018
Stock options issued and outstanding	8,348,766	7,978,369
Nonvested restricted stock units issued and outstanding	8,468,680	8,262,902
Class A common stock reserved for Twilio.org	776,334	572,676
Stock-based awards available for grant under 2016 Plan	15,609,073	9,313,354
Stock-based awards available for grant under 2016 ESPP	3,984,686	3,092,779
Class A common stock reserved for the convertible senior notes	10,472,165	10,472,165
Total	<u>47,659,704</u>	<u>39,692,245</u>

(c) Public Equity Offering

In June 2019, the Company completed a public equity offering in which the Company sold 8,064,515 shares of its Class A common stock, which included 1,051,893 shares sold pursuant to the exercise by the underwriters of an option to purchase additional shares, at a public offering price of \$124.00 per share. The Company received aggregate proceeds of \$979.0 million after deducting underwriting discounts and offering expenses paid and payable by the Company.

14. 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.

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, 2019 and 2018, the shares available for grant under the 2016 Plan were automatically increased by 5,004,011 shares and 4,698,490 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.

SendGrid Equity Awards Assumed in Acquisition

In connection with its acquisition of SendGrid, the Company assumed all stock options and restricted stock units issued under SendGrid's 2009, 2012 or 2017 Stock Incentive Plans that were outstanding on the date of acquisition. The

assumed equity awards will continue to be outstanding and will be governed by the provisions of their respective plans. Additionally, the Company assumed shares of SendGrid common stock that were reserved and available for issuance under SendGrid's 2017 Equity Incentive Plan, on an as converted basis. These shares can be utilized for future equity grants under the Company's 2016 Plan, to the extent permitted by New York Stock Exchange rules.

2016 Employee Stock Purchase Plan

The Company's Employee Stock Purchase Plan ("2016 ESPP"), as amended, initially 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 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, 2019 and 2018, the shares available for grant under the 2016 Plan were automatically increased by 1,000,802 shares and 939,698 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 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 three months ended September 30, 2019 and 2018, no shares of Class A common stock were purchased under the 2016 ESPP, and 99,158 shares are expected to be purchased in the fourth quarter of 2019. As of September 30, 2019, total unrecognized compensation cost related to the 2016 ESPP was \$1.0 million, which will be amortized over a weighted-average period of 0.1 years.

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, 2018	7,423,369	\$ 16.07	6.80	\$ 534,640
Granted	905,180	118.41		
Assumed in acquisition	2,978,555	14.91		
Exercised	(3,173,518)	10.12		
Forfeited and canceled	(339,820)	41.29		
Outstanding options as of September 30, 2019	7,793,766	\$ 28.83	6.82	\$ 639,230
Options vested and exercisable as of September 30, 2019	4,722,300	\$ 12.48	5.91	\$ 460,470

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(In thousands, except per share amounts)			
Aggregate intrinsic value of stock options exercised *	\$ 67,952	\$ 56,186	\$ 355,776	\$ 130,719
Total estimated grant date fair value of options vested	\$ 20,959	\$ 4,594	\$ 62,657	\$ 17,627
Weighted-average grant date fair value per share of options granted	\$ —	\$ 28.84	\$ 58.16	\$ 16.04

* Aggregate intrinsic value represents the difference between the fair value of the Company's Class A common stock as reported on the New York Stock Exchange and the exercise price of outstanding "in-the-money" options.

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 two year 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 4.4 years, respectively. The stock options value 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, 2018	555,000	\$ 31.72	6.00	\$ —
Granted	—	—		
Exercised	—	—		
Forfeited and canceled	—	—		
Outstanding options as of September 30, 2019	<u>555,000</u>	\$ 31.72	4.41	\$ 43,423
Options vested and exercisable as of September 30, 2019	<u>393,124</u>	\$ 31.72	4.41	\$ 30,758

As of September 30, 2019, total unrecognized compensation cost related to nonvested stock options was \$120.6 million, which will be amortized on a ratable basis over a weighted-average period of 2.1 years.

Restricted Stock Units

	Number of awards outstanding	Weighted- average grant date fair value (per share)	Aggregate intrinsic value (in thousands)
Nonvested RSUs as of December 31, 2018	8,262,902	\$ 42.70	\$ 729,373
Granted	2,348,316	126.02	
Assumed in acquisition	561,999	112.88	
Vested	(2,124,565)	41.35	
Forfeited and canceled	(579,972)	\$ 51.91	
Nonvested RSUs as of September 30, 2019	<u>8,468,680</u>	\$ 68.39	\$ 926,427

As of September 30, 2019, total unrecognized compensation cost related to nonvested RSUs was \$532.1 million, which will be amortized over a weighted-average period of 2.7 years.

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:

Employee Stock Options:	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Fair value of common stock	—	\$62.7	\$111.3 - \$130.7	\$33.0 - \$62.7
Expected term (in years)	—	6.08	0.33 - 6.08	6.08
Expected volatility	—	43.6%	48.3% - 66.5%	43.6% - 44.2%
Risk-free interest rate	—	2.8%	2.4% - 2.5%	2.7% - 2.9%
Dividend rate	—	—%	—%	—%

Employee Stock Purchase Plan:	Nine Months Ended September 30,	
	2019	2018
Expected term (in years)	0.5	0.5
Expected volatility	50.3%	39.8%
Risk-free interest rate	2.4%	2.1%
Dividend rate	—%	—%

The following assumptions were used in the Monte Carlo simulation model to estimate the grant date 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	\$31.7

Stock-Based Compensation Expense

The Company recorded the total stock-based compensation expense as follows. In the three and nine months ended September 30, 2019, the stock-based compensation expense associated with awards assumed in the SendGrid acquisition was \$19.9 million and \$66.6 million, respectively.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Cost of revenue	\$ 1,674	\$ 284	\$ 5,106	\$ 772
Research and development	34,348	10,879	93,388	28,500
Sales and marketing	16,143	5,246	42,456	14,154
General and administrative	16,103	6,332	56,382	17,861
Total	\$ 68,268	\$ 22,741	\$ 197,332	\$ 61,287

15. Net Loss Per Share Attributable to Common Stockholders

Basic and diluted net loss per common share is presented in conformity with the two-class method required for participating securities.

Class A and Class B common stock are the only outstanding equity in 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 and are automatically converted into Class A common stock upon sale or transfer, subject to certain limited exceptions.

Basic net loss per share attributable to common stockholders is computed using the weighted-average number of common shares outstanding during the period. Diluted net loss per share attributable to common stockholders is computed using the weighted-average number of common shares and, if dilutive, potential common shares outstanding during the period. The dilutive effect of these potential common shares is reflected in diluted earnings per share by application of the treasury stock method.

The following table sets forth the calculation of basic and diluted net loss per share attributable to common stockholders during the periods presented:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands, except share and per share data)			
Net loss attributable to common stockholders	\$ (87,734)	\$ (27,056)	\$ (216,816)	\$ (74,791)
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted	136,400,739	98,019,629	127,506,529	96,359,437
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.64)	\$ (0.28)	\$ (1.70)	\$ (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:

	As of September 30,	
	2019	2018
Stock options issued and outstanding	8,348,766	8,567,152
Nonvested restricted stock units issued and outstanding	8,468,680	7,368,918
Class A common stock reserved for Twilio.org	776,334	635,014
Class A common stock committed under 2016 ESPP	99,158	127,327
Conversion spread*	3,515,621	233,799
Unvested shares subject to repurchase	—	209
Total	21,208,559	16,932,419

* 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.

16. Income Taxes

In connection with the SendGrid acquisition, the Company recorded a net deferred tax liability which provides an additional source of taxable income to support the realization of the pre-existing deferred tax assets and, accordingly, during the three and nine months ended September 30, 2019, the Company released a total of \$2.5 million and \$55.2 million, respectively, of its U.S. valuation allowance. The Company continues to maintain a valuation allowance for its U.S. Federal and State net deferred tax assets.

The provision for income taxes recorded in the three and nine months ended September 30, 2018, consists primarily of income taxes and withholding taxes in foreign jurisdictions in which the Company conducts business. The Company's U.S. operations have been in a loss position and the Company maintains a full valuation allowance against its U.S. deferred tax assets.

Item 2. 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 condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q. In addition to historical financial information, the following discussion contains forward-looking statements that are based upon current plans, expectations and beliefs that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under Part II, Item 1A, “Risk Factors” in this Quarterly Report on Form 10-Q. 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, video and email 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 and inbox service providers around the world and continually analyzes data to optimize the quality and cost of communications that flow through our platform. The Super Network also contains a set of APIs that gives our customers access to more foundational components of our platform, like phone numbers.

Our customers’ applications are able to reach users via voice, messaging, video and email in nearly every country in the world by utilizing our platform. We support our global business through more than 25 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 awareness of our products in the enterprise, we have expanded our marketing efforts through programs like our Twilio Engage roadshow where 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, our email API is offered on a monthly subscription basis and our Marketing Campaigns product is priced based on the number of email contacts stored on our platform and the number of monthly emails sent to those contacts through our Email API. Also, customers using our Programmable Messaging or Programmable Voice APIs 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 or are charged on a monthly subscription basis for our email-related products. 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 and inbox service providers 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 three months ended September 30, 2019 and 2018, our revenue was \$295.1 million and \$168.9 million, respectively. Our 10 largest Active Customer Accounts generated an aggregate of 13% and 18% of our total revenue, respectively, in the three months ended September 30, 2019 and 2018. In each of the three months ended September 30, 2019 and 2018, among our 10 largest Active Customer Accounts, we had three Variable Customer Accounts representing 6% and 8% of our total revenue, respectively. In the three months ended September 30, 2019 and 2018 our Base Revenue was \$275.5 million and \$154.3 million, respectively. In the three months ended September 30, 2019 and 2018, our net loss was \$87.7 million and \$27.1 million, respectively. See the section titled “-Key Business Metrics-Base Revenue” for a discussion of Base Revenue.

Public Equity Offering

In June 2019, we completed a public equity offering in which we sold 8,064,515 shares of our Class A common stock, which included 1,051,893 shares sold pursuant to the exercise by the underwriters of an option to purchase additional shares, at a public offering price of \$124.00 per share. We received aggregate proceeds of \$979.0 million after deducting underwriting discounts and offering expenses paid and payable by us.

Key Business Metrics

	Three Months Ended September 30,	
	2019	2018
Number of Active Customer Accounts (as of end date of period) ⁽¹⁾	172,092	61,153
Base Revenue (in thousands) ⁽¹⁾	\$ 275,548	\$ 154,348
<i>Base Revenue Growth Rate</i> ⁽¹⁾	79%	68%
Dollar-Based Net Expansion Rate	132%	145%

⁽¹⁾ For the three months ended September 30, 2019, Active Customer Accounts, Base Revenue, and Base Revenue Growth Rate include the contribution from Twilio SendGrid, which acquisition closed on February 1, 2019.

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 three months ended September 30, 2019 and 2018, revenue from Active Customer Accounts represented over 99% of total revenue in each period.

Base Revenue. 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 the experience of our management, 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. With the growth of our business in recent years, including through revenue contribution from the acquisition of SendGrid, revenue from Variable Customer Accounts has become less meaningful as a percentage of total revenue. As a result, for reporting periods starting with the three months ending March 31, 2020, we will only disclose Total Revenue and will cease to disclose Base Revenue as an operating metric.

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) has met or exceeded 1% of the Company's 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, they remain a Variable Customer Account in subsequent periods unless they enter into a minimum revenue commitment contract with us for a term of at least 12 months.

In each of the three months ended September 30, 2019 and 2018, we had six Variable Customer Accounts, which represented 7% and 9%, 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 have historically tracked performance in this area is by measuring the Dollar-Based Net Expansion Rate for Active Customer Accounts, other than Variable Customer Accounts. Our Dollar-Based Net Expansion Rate increases when such Active Customer Accounts increase their usage of a product, extend their usage of a product to new

applications or adopt a new product. Our Dollar-Based Net Expansion Rate decreases when such Active Customer Accounts cease or reduce their usage of a product or when we lower usage prices on a product. As our customers grow their businesses and extend the use of our platform, they sometimes create multiple customer accounts with us for operational or other reasons. As such, 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 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 that measuring Dollar-Based Net Expansion Rate provides a more meaningful indication of the performance of our efforts to increase revenue from existing customers.

For historical periods through September 30, 2019 and the three months ended December 31, 2019, 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 through December 31, 2019) 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, it uses the average of the applicable quarterly Dollar-Based Net Expansion Rates for each of the quarters in such period. Given that we will no longer disclose Base Revenue as an operating metric for reporting periods starting with the three months ended March 31, 2020, our Dollar-Based Net Expansion Rate will compare the revenue from all Active Customer Accounts, including Variable Customer Accounts, in a quarter to the same quarter in the prior year.

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 three months ended September 30, 2019 and 2018, we generated 74% and 83% of our revenue, respectively, from usage-based fees. We also earn monthly flat fees from certain fee-based products, such as our Email API, Marketing Campaigns, Flex seats, 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. Our deferred revenue and customer deposits liability balance is not a meaningful indicator of our future revenue at any point in time because very few of our contracts with invoiced customers contain terms requiring any form of prepayment.

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

Cost of Revenue and Gross 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 depreciation and amortization expense related to data centers and hosting equipment, 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 product mix, our ability to manage our network service provider and cloud infrastructure-related fees, the mix of U.S. revenue compared to international revenue, changes in foreign exchange rates and

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, 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 our international expansion.

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 and 2019. 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, and the income tax benefit recorded in connection with the SendGrid, Inc. ("SendGrid") acquisition.

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, 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, amortization of acquired intangibles and payroll taxes related to stock-based compensation.

	Three Months Ended September 30,	
	2019	2018
	(in thousands)	
Reconciliation:		
Gross profit	\$ 158,162	\$ 91,864
Non-GAAP adjustments:		
Stock-based compensation	1,674	284
Amortization of acquired intangibles	12,549	1,396
Payroll taxes related to stock-based compensation	29	—
Non-GAAP gross profit	<u>\$ 172,414</u>	<u>\$ 93,544</u>
Non-GAAP gross margin	58%	55%

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, acquisition-related expenses, legal settlements/accruals, charitable contributions and payroll taxes related to stock-based compensation.

	Three Months Ended September 30,	
	2019	2018
	(in thousands)	
Reconciliation:		
Operating expenses	\$ 252,828	\$ 116,897
Non-GAAP adjustments:		
Stock-based compensation	(66,594)	(22,457)
Amortization of acquired intangibles	(7,443)	(410)
Acquisition-related expenses	(371)	(1,554)
Legal settlements/accruals	—	(1,510)
Charitable contributions	—	(175)
Payroll taxes related to stock-based compensation	(2,386)	(1,498)
Non-GAAP operating expenses	<u>\$ 176,034</u>	<u>\$ 89,293</u>

Non-GAAP Income from Operations and Non-GAAP Operating Margin. For the periods presented, we define non-GAAP income 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, acquisition-related expenses, legal settlements/accruals, charitable contributions and payroll taxes related to stock-based compensation.

	Three Months Ended September 30,	
	2019	2018
	(in thousands)	
Reconciliation:		
Loss from operations	\$ (94,666)	\$ (25,033)
Non-GAAP adjustments:		
Stock-based compensation	68,268	22,741
Amortization of acquired intangibles	19,992	1,806
Acquisition-related expenses	371	1,554
Legal settlements/accruals	—	1,510
Charitable contributions	—	175
Payroll taxes related to stock-based compensation	2,415	1,498
Non-GAAP (loss) income from operations	<u>\$ (3,620)</u>	<u>\$ 4,251</u>
Non-GAAP operating margin	(1)%	3%

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.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Condensed Consolidated Statements of Operations Data:				
Revenue	\$ 295,066	\$ 168,895	\$ 803,244	\$ 445,765
Cost of revenue ^{(1) (2)}	136,904	77,031	369,017	204,553
Gross profit	<u>158,162</u>	<u>91,864</u>	<u>434,227</u>	<u>241,212</u>
Operating expenses:				
Research and development ^{(1) (2)}	104,481	42,340	281,119	119,727
Sales and marketing ^{(1) (2)}	100,657	45,949	262,685	116,520
General and administrative ^{(1) (2)}	47,690	28,608	166,409	76,213
Total operating expenses	<u>252,828</u>	<u>116,897</u>	<u>710,213</u>	<u>312,460</u>
Loss from operations	<u>(94,666)</u>	<u>(25,033)</u>	<u>(275,986)</u>	<u>(71,248)</u>
Other income (expenses), net	4,377	(1,939)	2,861	(3,172)
Loss before benefit (provision) for income taxes	<u>(90,289)</u>	<u>(26,972)</u>	<u>(273,125)</u>	<u>(74,420)</u>
Benefit (provision) for income taxes	2,555	(84)	56,309	(371)
Net loss attributable to common stockholders	<u>\$ (87,734)</u>	<u>\$ (27,056)</u>	<u>\$ (216,816)</u>	<u>\$ (74,791)</u>

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Cost of revenue	\$ 1,674	\$ 284	\$ 5,106	\$ 772
Research and development	34,348	10,879	93,388	28,500
Sales and marketing	16,143	5,246	42,456	14,154
General and administrative	16,103	6,332	56,382	17,861
Total	\$ 68,268	\$ 22,741	\$ 197,332	\$ 61,287

(2) Includes amortization of acquired intangibles as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
	(in thousands)			
Cost of revenue	\$ 12,549	\$ 1,396	\$ 32,866	\$ 3,719
Research and development	—	—	—	22
Sales and marketing	7,322	390	19,654	816
General and administrative	121	20	336	60
Total	\$ 19,992	\$ 1,806	\$ 52,856	\$ 4,617

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Condensed Consolidated Statements of Operations, as a percentage of revenue:**				
Revenue	100%	100%	100 %	100%
Cost of revenue	46	46	46	46
Gross profit	54	54	54	54
Operating expenses:				
Research and development	35	25	35	27
Sales and marketing	34	27	33	26
General and administrative	16	17	21	17
Total operating expenses	86	69	88	70
Loss from operations	(32)	(15)	(34)	(16)
Other income (expenses), net	1	(1)	*	(1)
Loss before benefit (provision) for income taxes	(31)	(16)	(34)	(17)
Benefit (provision) for income taxes	1	*	7	*
Net loss attributable to common stockholders	(30%)	(16%)	(27)%	(17)%

* Less than 0.5% of revenue.

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

Comparison of the Three Months Ended September 30, 2019 and 2018

Revenue

	Three Months Ended September 30,			Change
	2019	2018		
	(dollars in thousands)			
Base Revenue	\$ 275,548	\$ 154,348	\$ 121,200	79%
Variable Revenue	19,518	14,547	4,971	34%
Total Revenue	<u>\$ 295,066</u>	<u>\$ 168,895</u>	<u>\$ 126,171</u>	75%

In the three months ended September 30, 2019, Base Revenue increased by \$121.2 million, or 79%, compared to the same period last year, and represented 93% and 91% of total revenue in the three months ended September 30, 2019 and 2018, respectively. This increase was primarily attributable to an increase in the usage of our products, particularly our Programmable Messaging products and Programmable Voice products, the adoption of additional products by our existing customers, and revenue contribution from our acquisition of the Twilio SendGrid business, which closed in the first quarter of 2019. 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 three months ended September 30, 2019, were reflected in our Dollar-Based Net Expansion Rate of 132%. The increase in usage was also attributable to a 181% increase in the number of Active Customer Accounts, from 61,153 as of September 30, 2018, to 172,092 as of September 30, 2019, which was also positively impacted by the customer accounts added through our acquisition of the Twilio SendGrid business.

In the three months ended September 30, 2019, Variable Revenue increased by \$5.0 million, or 34%, compared to the same period last year, and represented 7% and 9% of total revenue in the three months ended September 30, 2019 and 2018, 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 \$211.0 million or 72%, and \$84.1 million, or 28%, respectively, of total revenue in the three months ended September 30, 2019, compared to \$125.7 million, or 74%, and \$43.2 million, or 26%, respectively, of total revenue in the three months ended September 30, 2018. 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 213% increase in the number of international Active Customer Accounts driven in part by our focus on expanding our sales to customers outside of the United States; and revenue contribution from our acquisition of the Twilio SendGrid business.

Cost of Revenue and Gross Margin

	Three Months Ended September 30,			Change
	2019	2018		
	(dollars in thousands)			
Cost of revenue	\$ 136,904	\$ 77,031	\$ 59,873	78%
Gross margin	54%	54%		

In the three months ended September 30, 2019, cost of revenue increased by \$59.9 million, or 78%, compared to the same period last year. The increase in cost of revenue was primarily attributable to a \$36.1 million increase in network service providers' costs, a \$15.1 million increase in depreciation and amortization expense primarily related to the acquired intangible assets and our internally developed software and a \$3.6 million increase in cloud infrastructure fees due to the growth in usage of our products.

In the three months ended September 30, 2019, gross margin percentage remained stable compared to the three months ended September 30, 2018. Product mix, which includes the impact of the acquisition of the Twilio SendGrid business, and some operational improvements were largely offset by an increase in amortization expense related to acquired intangible assets,

the impact of an increasing mix of international product usage, and an increase in network service provider fees in certain geographies.

Operating Expenses

	Three Months Ended September 30,			Change
	2019	2018		
	(dollars in thousands)			
Research and development	\$ 104,481	\$ 42,340	\$ 62,141	147%
Sales and marketing	100,657	45,949	54,708	119%
General and administrative	47,690	28,608	19,082	67%
Total operating expenses	\$ 252,828	\$ 116,897	\$ 135,931	116%

In the three months ended September 30, 2019, research and development expenses increased by \$62.1 million, or 147%, compared to the same period last year. The increase was primarily attributable to a \$51.4 million increase in personnel costs, net of a \$3.0 million increase in capitalized software development costs, largely as a result of a 109% average increase in our research and development headcount including the impact of growth in headcount as a result of the acquisition of our Twilio SendGrid business 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 \$4.6 million increase in facilities and depreciation expense to accommodate the growth in our headcount. In addition, the three months ended September 30, 2019, included research and development expenses from our acquired Twilio SendGrid business.

In the three months ended September 30, 2019, sales and marketing expenses increased by \$54.7 million, or 119%, compared to the same period last year. The increase was primarily attributable to a \$29.9 million increase in personnel costs, largely as a result of a 115% average increase in sales and marketing headcount including the impact of growth in headcount as a result of the acquisition of our Twilio SendGrid business as we continued to expand our sales efforts in the United States and internationally, an \$8.0 million increase related to SIGNAL, our customer and developer conference, a \$6.9 million increase in amortization expense attributed to acquired intangible assets, a \$3.1 million increase in facilities expense, and a \$1.9 million increase in credit card fees due to increased transaction volumes. In addition, the three months ended September 30, 2019, included sales and marketing expenses from our acquired Twilio SendGrid business.

In the three months ended September 30, 2019, general and administrative expenses increased by \$19.1 million, or 67%, compared to the same period last year. The increase was primarily attributable to a \$18.1 million increase in personnel costs largely as a result of a 104% average increase in general and administrative headcount including the impact of growth in headcount as a result of the acquisition of our Twilio SendGrid business, to support the growth of our business domestically and internationally and a \$0.6 million increase in facilities related expenses. In addition, three months ended September 30, 2019, included general and administrative expenses from our acquired Twilio SendGrid business.

Comparison of the Nine Months Ended September 30, 2019 and 2018

Revenue

	Nine Months Ended September 30,			Change
	2019	2018		
	(dollars in thousands)			
Base Revenue	\$ 753,170	\$ 406,859	\$ 346,311	85%
Variable Revenue	50,074	38,906	11,168	29%
Total Revenue	\$ 803,244	\$ 445,765	\$ 357,479	80%

In the nine months ended September 30, 2019, Base Revenue increased by \$346.3 million, or 85%, compared to the same period last year, and represented 94% and 91% of total revenue in the nine months ended September 30, 2019 and 2018, respectively. This increase was primarily attributable to an increase in the usage of our products, particularly our Programmable Messaging products and Programmable Voice products, the adoption of additional products by our existing customers, and revenue contribution from our acquisition of the Twilio SendGrid business for the period from February 1, 2019 through

September 30, 2019. 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 nine months ended September 30, 2019, were reflected in our Dollar-Based Net Expansion Rate of 139%. The increase in usage was also attributable to a 181% increase in the number of Active Customer Accounts, from 61,153 as of September 30, 2018, to 172,092 as of September 30, 2019, which was also positively impacted by the customer accounts added through our acquisition of the Twilio SendGrid business.

In the nine months ended September 30, 2019, Variable Revenue increased by \$11.2 million, or 29%, compared to the same period last year, and represented 6% and 9% of total revenue in the nine months ended September 30, 2019 and 2018, 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 \$572.5 million or 71%, and \$230.7 million, or 29%, respectively, of total revenue in the nine months ended September 30, 2019, compared to \$335.6 million, or 75%, and \$110.2 million, or 25%, respectively, of total revenue in the nine months ended September 30, 2018. 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 213% increase in the number of international Active Customer Accounts driven in part by our focus on expanding our sales to customers outside of the United States; and revenue contribution from our acquisition of the Twilio SendGrid business.

Cost of Revenue and Gross Margin

	Nine Months Ended September 30,		Change
	2019	2018	
	(dollars in thousands)		
Cost of revenue	\$ 369,017	\$ 204,553	\$ 164,464 80%
Gross margin	54%	54%	

In the nine months ended September 30, 2019, cost of revenue increased by \$164.5 million, or 80%, compared to the same period last year. The increase in cost of revenue was primarily attributable to a \$101.4 million increase in network service providers' costs, a \$34.5 million increase in depreciation and amortization expense primarily related to the acquired intangible assets and our internally developed software and a \$12.8 million increase in cloud infrastructure fees, all of which relate to the growth in usage of our products.

In the nine months ended September 30, 2019, gross margin percentage remained stable compared to the nine months ended September 30, 2018. Product mix, which includes the impact of the acquisition of the Twilio SendGrid business, and some operational improvements were largely offset by an increase in amortization expense related to acquired intangible assets, the impact of an increasing mix of international product usage, and an increase in network service provider fees in certain geographies.

Operating Expenses

	Nine Months Ended September 30,		Change
	2019	2018	
	(dollars in thousands)		
Research and development	\$ 281,119	\$ 119,727	\$ 161,392 135%
Sales and marketing	262,685	116,520	146,165 125%
General and administrative	166,409	76,213	90,196 118%
Total operating expenses	\$ 710,213	\$ 312,460	\$ 397,753 127%

In the nine months ended September 30, 2019, research and development expenses increased by \$161.4 million, or 135%, compared to the same period last year. The increase was primarily attributable to a \$133.2 million increase in personnel costs, net of a \$5.1 million increase in capitalized software development costs, largely as a result of a 75% average increase in our research and development headcount including the impact of growth in headcount as a result of the acquisition of our

Twilio SendGrid business 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 \$11.8 million increase in facilities and depreciation expenses to accommodate the growth in our headcount. In addition, the nine months ended September 30, 2019, included research and development expenses from our acquired Twilio SendGrid business for the period from February 1, 2019 through September 30, 2019.

In the nine months ended September 30, 2019, sales and marketing expenses increased by \$146.2 million, or 125%, compared to the same period last year. The increase was primarily attributable to a \$83.4 million increase in personnel costs, largely as a result of a 88% average increase in sales and marketing headcount, including the impact of growth in headcount as a result of the acquisition of our Twilio SendGrid business, as we continued to expand our sales efforts in the United States and internationally, a \$19.8 million increase related to the amortization of acquired intangible assets, a \$12.3 million increase in advertising expenses, an \$8.7 million increase related to SIGNAL, our customer and developer conference, and an \$8.4 million increase in facilities and related expenses. In addition, the nine months ended September 30, 2019, included sales and marketing expenses from our acquired Twilio SendGrid business for the period from February 1, 2019 through September 30, 2019.

In the nine months ended September 30, 2019, general and administrative expenses increased by \$90.2 million, or 118%, compared to the same period last year. The increase was primarily attributable to a \$61.7 million increase in personnel costs, largely as a result of a 83% average increase in general and administrative headcount, including the impact of growth in headcount as a result of the acquisition of our Twilio SendGrid business, to support the growth of our business domestically and internationally, a \$12.9 million increase in professional expenses specifically related to our business acquisitions as described in Note 6 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q and a \$5.1 million increase in facilities and depreciation expenses. In addition, the nine months ended September 30, 2019, included general and administrative expenses from our acquired Twilio SendGrid business for the period from February 1, 2019 through September 30, 2019.

Liquidity and Capital Resources

To date, our principal sources of liquidity have been (i) the net proceeds of \$155.5 million, \$64.4 million and \$979.0 million, net of underwriting discounts and offering expenses, from our initial public offering in June 2016 and our subsequent public offerings in October 2016 and June 2019, respectively; (ii) the net proceeds we received through private sales of equity securities; (iii) the net proceeds of approximately \$537.0 million, after deducting purchaser discounts and debt issuance costs paid by us, from issuance of the 0.25% convertible senior notes due 2023 (the "Notes"), as described in Note 9 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q; 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 II, 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:

	Nine Months Ended September 30,	
	2019	2018
	(in thousands)	
Cash provided by operating activities	\$ 2,024	\$ 12,833
Cash used in investing activities	(1,182,711)	(148,402)
Cash provided by financing activities	1,006,029	503,990
Effect of exchange rate changes on cash, cash equivalents and restricted cash	—	105
Net (decrease) increase in cash, cash equivalents and restricted cash	\$ (174,658)	\$ 368,526

Cash Flows from Operating Activities

In the nine months ended September 30, 2019, cash provided by operating activities consisted primarily of our net loss of \$216.8 million adjusted for non-cash items, including \$197.3 million of stock-based compensation expense, \$56.0 million of tax benefit related to our acquisitions of other businesses, \$79.3 million of depreciation and amortization expense, \$17.7 million amortization of the debt discount and issuance costs related to our Notes, \$16.7 million amortization of our operating right-of-use asset and \$36.0 million of cumulative changes in operating assets and liabilities. With respect to changes in operating assets and liabilities, accounts receivable and prepaid expenses increased \$48.4 million primarily due to the timing of cash receipts from certain of our larger customers, pre-payments for cloud infrastructure fees and certain operating expenses. Accounts payable and other current liabilities increased \$38.2 million primarily due to increases in transaction volumes and deferred revenue. Operating right-of-use liability decreased \$15.4 million due to payments made against our operating lease obligations. Other long-term assets increased \$10.8 million primarily due to an increase in the deferred sales commissions balances related to the growth of our business.

In the nine months ended September 30, 2018, cash provided by operating activities consisted primarily of our net loss of \$74.8 million adjusted for non-cash items, including \$61.3 million of stock-based compensation expense, \$18.2 million of depreciation and amortization expense, \$8.4 million of amortization of the debt discount and issuance costs related to our Notes and \$4.6 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 \$41.4 million primarily due to increases in transaction volumes. Deferred revenue and customer deposits increased \$5.1 million due to transaction volumes and timing of customer prepayments. Accounts receivable and prepaid expenses increased \$46.2 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.

Cash Flows from Investing Activities

In the nine months ended September 30, 2019, cash used in investing activities was \$1,182.7 million primarily consisting of \$1,293.9 million of purchases of marketable securities and other investments, net of maturities and sales, \$147.0 million of net cash paid to acquire other businesses as described in Note 6 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q, \$16.8 million related to capitalized software development costs and \$19.0 million related to purchases of long-lived assets.

In the nine months ended September 30, 2018, cash used in investing activities was \$148.4 million primarily consisting of \$100.0 million of purchases of marketable securities, net of maturities, \$29.7 million of cash paid to acquire other businesses and \$15.3 million related to capitalized software development costs.

Cash Flows from Financing Activities

In the nine months ended September 30, 2019, cash provided by financing activities was \$1,006.0 million primarily consisting of \$979.2 million in net proceeds from our public equity offering, as described in Note 13 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q, and \$40.4 million proceeds from stock options exercised by our employees and shares issued under our employee stock purchase plan.

In the nine months ended September 30, 2018, cash provided by financing activities was \$504.0 million primarily consisting of \$537.1 million net proceeds from our Notes, net of initial purchaser discounts and issuance costs paid in the period, \$27.1 million proceeds from stock options exercised by our employees and shares issued under our employee stock purchase plan. This was partially offset by a \$58.5 million payment for capped call transactions.

Critical Accounting Policies and Estimates

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

We believe that the accounting policies, assumptions and estimates associated with revenue recognition, business combinations, stock-based compensation and capitalization of our internal-use software development costs have the greatest potential impact on our unaudited condensed consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

Business Combinations

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

Recently Issued Accounting Guidance

See Note 2 of the notes to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q for a summary of recently issued and not yet adopted accounting pronouncements.

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

Our principal commitments consist of obligations under our Notes, our operating leases for office space and our contractual commitments to our cloud infrastructure and network service providers. In the three and nine months ended September 30, 2019, we entered into several non-cancelable vendor agreements with terms from one to four years for a total purchase commitment of \$4.5 million and \$15.6 million, respectively.

Additionally, in September 2019, we modified our contract with our cloud services vendor to consolidate and replace our existing commitments after the acquisition of SendGrid. Effective October 1, 2019, the total value of our modified contract was \$100.0 million with the remaining term of 2.0 years.

Item 3. 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 \$330.6 million and marketable securities of \$1,551.2 million as of September 30, 2019. Cash and cash equivalents consist of bank deposits and money market funds. Marketable securities consist primarily 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 unaudited consolidated financial statements.

In May 2018, we issued \$550.0 million aggregate principal amount of Notes. The fair market value of the Notes is affected by our stock price. The fair value of the Notes will generally increase as our common stock price increases and will generally decrease as our common stock price declines in value. In addition, the fair market value of the Notes is exposed to interest rate risk. Generally, the fair market value of our fixed interest rate Notes will increase as interest rates fall and decrease as interest rates rise. Additionally, on our balance sheet we carry the Notes at face value less unamortized discount and debt issuance cost, and we present the fair value for required disclosure purposes only.

Currency Exchange Risks

The functional currency of our foreign subsidiaries is the U.S. dollar. The local currencies of our foreign subsidiaries are the Australian dollar, the Bermuda dollar, British pound, the Colombian peso, the Czech koruna, the Euro, the Hong Kong dollar, the Japanese yen, the Singapore dollar and the Swedish krona. 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 unaudited condensed 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 unaudited condensed consolidated financial statements.

Item 4. Controls and Procedures

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 Quarterly Report on Form 10-Q.

Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of September 30, 2019, 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.

Changes in Internal Control

There were no changes in our internal control over financial reporting in connection with the evaluation required by Rules 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Quarterly Report on Form 10-Q that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and 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.

PART II — OTHER INFORMATION

Item 1. 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 and damages based on a reasonable royalty.

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. Telesign did not appeal the PTO’s decision and it is final. On October 19, 2018, the district court granted our motion that all remaining 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 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. On March 6, 2019, the PTO found all claims challenged by Telesign in the *inter partes* review unpatentable. We have appealed the decisions to the United States Court of Appeals for the Federal Circuit. Telesign III is currently stayed pending resolution of the *inter partes* reviews (and appeals from them) of the ‘465 and ‘376 patents. We are 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 \$10.0 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. The court entered a final order and judgment approving the settlement on June 17, 2019. Previously, we had a \$1.7 million reserve on the condensed consolidated balance sheet for the estimated potential liability, net of insurance coverage. On August 30, 2019, we made a payment of \$1.7 million to fund the settlement. A final compliance hearing has been scheduled for February 25, 2020. Any additional loss related to this matter is not probable or estimable at this time.

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. We filed a motion to dismiss, which was granted, and on September 20, 2016 the plaintiff filed a Second Amended Complaint with additional allegations that we 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 our motion to dismiss as to Plaintiffs’ TCPA claim and granting dismissal as to Plaintiffs’ NDTPA claim. On February 22, 2019, the court

stayed the case and directed all parties to mediation, which was conducted on May 15, 2019. On May 17, 2019, the original defendants (the “Saxe Defendants”) and Twilio entered an agreement, which among other things, obligates the Saxe Defendants to fully fund all monetary and non-monetary aspects of the settlement of the matter and to obtain the dismissal of the plaintiffs’ and the class’s claims against the Company with prejudice. On October 7, 2019, the plaintiffs filed an unopposed motion for settlement and an unopposed motion to dismiss Twilio from the action without prejudice. Based on, among other things, the dismissal motion and our agreement with the Saxe Defendants, we do not believe a loss is reasonably possible or estimable.

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 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 Quarterly Report on Form 10-Q, including Part I, Item 2, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q. 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 video and email 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 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 1,275 employees on September 30, 2018 to 2,676 employees on September 30, 2019. In addition, we are rapidly expanding our international operations. Our international headcount grew from 310 employees as of September 30, 2018 to 606 employees as of September 30, 2019. 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 Active 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;
- changes in laws, industry standards, regulations or regulatory enforcement, in the United States or internationally, including SHAKEN/STIR and other robocalling prevention and anti-spam standards as well as enhanced Know-Your-Client processes that impact our ability to market, sell or deliver our products;
- 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;

- 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;
- our ability to realize the anticipated benefits from the acquisition of SendGrid, including the ability to retain SendGrid customers and to cross-sell additional products; 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 customer and developer conference, which we hosted in the third quarter of 2019 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, reputation and customer trust. 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 (including any customers acquired in connection with our acquisitions) 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. We also cannot guarantee that our current or future marketing efforts will be as effective in attracting new or existing customers to purchase products historically offered by SendGrid. 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.

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, deliverability, 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 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 \$216.8 million, \$121.9 million and \$63.7 million in the nine months ended September 30, 2019, and the years ended December 31, 2018 and 2017, respectively. We had an accumulated deficit of \$588.5 million as of September 30, 2019. We expect to continue to expend substantial financial and other resources on, among other things:

- investments in our engineering team, improvements in security and data protection, the development of new products, features and functionality and enhancements to our platform;
- sales and marketing, including the continued expansion of our direct sales organization and marketing programs, especially for enterprises 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.

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 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 a substantial majority 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 for cause upon notice and our failure to cure a breach within 30 days from the date of such notification. 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, erode customer trust, 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 and internet service providers for our network service and connectivity.

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, in the coming months, we are expecting one or more of the major U.S. cellular carriers to introduce a new Application to Person (A2P) SMS service offering 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, which may be imposed in the coming months, 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 revenue, but it 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.

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

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

In the nine months ended September 30, 2019, and the years ended December 31, 2018 and 2017, we derived 29%, 25% and 23% 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 September 30, 2018 and September 30, 2019, our international headcount grew

from 310 employees to 606 employees. We expect to open additional international 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") ("Brexit"), which has created an uncertain political and economic environment, instability for businesses, volatility in global financial markets and the value of foreign currencies, all of which could disrupt trade, the sale of our services and the mobility of our employees and contractors between the United Kingdom, EU and other jurisdictions. Any long-term impact from Brexit on our business and operations will depend, in part, on the outcome of the U.K.'s negotiations on tariffs, tax treaties, trade, regulatory, and other matters and may require us to expend significant time and expense to make adjustments to our business and operations.
- the difficulty of managing and staffing international operations and the increased operations, travel, infrastructure and legal compliance costs associated with servicing international customers and operating numerous international locations;
- our ability to effectively price our products in competitive international markets;
- new and different sources of competition;
- understanding and reconciling different technical standards, data privacy and telecommunications regulations, registration and certification requirements outside the United States, which could prevent customers from deploying our products or limit their usage;
- our ability to comply with the General Data Protection Regulation ("GDPR"), which went into effect on May 25, 2018 and laws, regulations and industry standards relating to data privacy, data localization and security enacted in countries and other regions in which we operate or do business;
- 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 non-U.S. jurisdictions;
- 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.

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 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 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 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 to and 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 permitted the interception, recording and disclosure of communications at certain of our customers' request in a manner that violated the California Invasion of Privacy Act. This litigation has now settled, but actions in the future could lead to similar claims and include damages and related penalties that could divert management's attention and resources, as well as adversely affect our brand, 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, Universal Service Fund, Telecommunications Relay Service fund contributions and other requirements. FCC classification of our Internet voice communications products as telecommunications or interconnected Voice over Internet Protocol ("VoIP") services could result in additional federal and state regulatory

obligations, but also could offer practical solutions to some of the FCC's recent regulatory actions, for example its robocall mitigation efforts. 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, could erode customer trust, 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.

In addition, Congress and the FCC are attempting to mitigate the scourge of robocalls by requiring participation in a technical standard called SHAKEN/STIR, which allows carriers to authenticate caller ID, prohibiting malicious spoofing.

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

As we continue to expand internationally, we have become subject to telecommunications laws and regulations in the foreign countries where we offer our products. Internationally, we currently offer our products in 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. Any of the foregoing could adversely affect our business, results of operations and financial condition.

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

Our future success depends in part on our ability to obtain allocations of large quantities of geographical, regional, local and toll-free direct inward dialing numbers (“DIDs”), in the United States and foreign countries at a reasonable cost and without overly burdensome restrictions. Our ability to obtain allocations of, assign and retain DIDs depends on factors outside of our control, such as applicable regulations, the practices of authorities that administer national numbering plans or of network service

providers from whom we can provision 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 obtain allocations of, assign and retain telephone numbers in 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 have registered, and 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, reputational harm, and erosion of customer trust, 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.

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

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

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, including but not limited to SHAKEN/STIR, 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 or inbox service providers have developed and, may in the future develop, new applications or functions intended to filter spam and unwanted phone calls, messages or emails. Similarly, our network service providers may adopt new filtering technologies in an effort to combat spam or robocalling. Such technologies may inadvertently filter desired messages or calls to or from our customers. If cell-phone operating system providers, network service providers, our customers or their end users adopt new software platforms or infrastructure, we may be required to develop new versions of our products to work with those new platforms or infrastructure. This development effort may require significant resources, which would adversely affect our business, results of operations and financial condition. Any failure of our products and platform to operate effectively with evolving or new platforms and technologies could reduce the demand for our products. If we are unable to respond to these changes in a cost-effective

manner, our products may become less marketable and less competitive or obsolete, and our business, results of operations and financial condition could be adversely affected.

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 and erode customer trust.

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. In particular, cyberattacks and other malicious internet-based activity continue to increase in frequency and in magnitude generally, and cloud-based companies have been targeted in the past. In addition to threats from traditional computer hackers, malicious code (such as malware, viruses, worms, and ransomware), employee theft or misuse, password spraying, phishing, credential stuffing, and denial-of-service attacks, we also face threats from sophisticated organized crime, nation-state, and nation-state supported actors who engage in attacks (including advanced persistent threat intrusions) that add to the risk to our systems (including those hosted on AWS or other cloud services), internal networks, our customers' systems and the information that they store and process. While we devote significant financial and personnel resources to implement and maintain security measures, 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 required to make further investments over time to protect data and infrastructure as cybersecurity threats develop, evolve and grow more complex over time. We may also be unable to anticipate these techniques, and we may not become aware in a timely manner of 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 or a third party's fraudulent inducement of our employees to disclose information, 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, erosion of customer trust, 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, customer trust, business, results of operations and financial condition could be adversely affected. While we maintain errors, omissions, and cyber liability insurance policies covering certain security and privacy damages, we cannot be certain that our existing insurance coverage will continue to be available on acceptable terms or will be available in sufficient amounts to cover the potentially significant losses that may result from a security incident or breach or that the insurer will not deny coverage as to any future claim.

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 and erode customer trust. 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.

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

In the nine months ended September 30, 2019, and the years ended December 31, 2018 and 2017, our 10 largest Active Customer Accounts, which consisted of both Base and Variable Customers, generated an aggregate of 13%, 18% and 19% of our revenue, respectively. A significant portion of our revenue comes from a Variable Customer, WhatsApp.

In the nine months ended September 30, 2019, and the years ended December 31, 2018 and 2017, WhatsApp accounted for 5%, 7% and 6% 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.

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 erode customer trust and adversely affect our reputation, business, results of operations and financial condition.

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 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 1. 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, loss or exposure of confidential or sensitive data, 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 in the U.S. and in non-U.S. 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 non-U.S. 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 non-U.S. 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.

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 or delays in 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. In addition, we may discover liabilities or deficiencies associated with the assets or companies we acquire that were not identified in advance, which could result in significant unanticipated costs. 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. The replacement of any 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.

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

The Federal Controlling the Assault of Non-Solicited Pornography and Marketing Act of 2003, or the CAN-SPAM Act, establishes certain requirements for commercial email messages and transactional email messages and specifies penalties for the transmission of email messages that are intended to deceive the recipient as to source or content. Among other things, the CAN-SPAM Act, obligates the sender of commercial emails to provide recipients with the ability to "opt-out" of receiving future commercial emails from the sender. In addition, some states have passed laws regulating commercial email practices that are significantly more restrictive and difficult to comply with than the CAN-SPAM Act. For example, Utah and Michigan prohibit the sending of email messages that advertise products or services that minors are prohibited by law from purchasing (e.g., alcoholic beverages, tobacco products, illegal drugs) or that contain content harmful to minors (e.g., pornography) to email addresses listed on specified child protection registries. Some portions of these state laws may not be preempted by the CAN-SPAM Act. In addition, certain non-U.S. jurisdictions, such as Australia, Canada, and the European Union, have enacted laws that regulate sending email, and some of these laws are more restrictive than U.S. laws. For example, some foreign laws prohibit sending broad categories of email unless the recipient has provided the sender advance consent to receipt of such email, or in other words has "opted-in" to receiving such email. If we were found to be in violation of the CAN-SPAM Act, applicable state laws governing email not preempted by the CAN-SPAM Act or foreign laws regulating the distribution of email, whether as a result of violations by our customers or our own acts or omissions, we could be required to pay large penalties, which would adversely affect our financial condition, significantly harm our business, injure our reputation and erode customer trust. The terms of any injunctions, judgments, consent decrees or settlement agreements entered into in connection with enforcement actions or investigations against our company in connection with any of the foregoing laws may also require us to change one or more aspects of the way we operate our business, which could impair our ability to attract and retain customers or could increase our operating costs.

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

The actual or perceived improper sending of text messages or voice calls may subject us to potential risks, including liabilities or claims relating to consumer protection laws and regulatory enforcement, including fines. For example, the Telephone Consumer Protection Act of 1991 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 or voice calls are continuously evolving and developing. If we do not comply with these laws or regulations or if we become liable under these laws or regulations due to the failure of our customers to comply with these laws by obtaining proper consent, we could face direct liability.

Moreover, despite our ongoing and substantial efforts to limit such use, certain customers may use our platform to transmit unauthorized, offensive or illegal messages, calls, spam, phishing scams, and website links to harmful applications, reproduce and distribute copyrighted material or the trademarks of others without permission, and report inaccurate or fraudulent data or information. These issues also arise with respect to a portion of those users who use our platform on a free trial basis or upon initial use. These actions are in violation of our policies, in particular, our Acceptable Use Policy. However, our efforts to defeat spamming attacks, illegal robocalls and other fraudulent activity will not prevent all such attacks and activity, such use of our platform could damage our reputation and we could face claims for damages, regulatory enforcement, copyright or trademark infringement, defamation, negligence, or fraud. Moreover, our customers' and other users' promotion of their products and services through our platform might not comply with federal, state, and foreign laws. We rely on contractual representations made to us by our customers that their use of our platform will comply with our policies and applicable law, including, without limitation, our email and messaging policies. Although we retain the right to verify that customers and other users are abiding by certain contractual terms, our Acceptable Use Policy and our email and messaging policies and, in certain circumstances, to review their email and distribution lists, our customers and other users are ultimately responsible for compliance with our policies, and we do not systematically audit our customers or other users to confirm compliance with our policies. We cannot predict whether our role in facilitating our customers' or other users' activities would expose us to liability under applicable law. Even if claims asserted against us do not result in liability, we may incur substantial costs in investigating and defending such claims. If we are found liable for our customers' or other users' activities, we could be required to pay fines or penalties, redesign business methods or otherwise expend resources to remedy any damages caused by such actions and to avoid future liability.

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.

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.

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

Some of our customers rely on email to communicate with their existing or prospective customers. Various private entities attempt to regulate the use of email for commercial solicitation. These entities often advocate standards of conduct or practice that significantly exceed current legal requirements and classify certain email solicitations that comply with current legal requirements as spam. Some of these entities maintain “blacklists” of companies and individuals, and the websites, inbox service providers and IP addresses associated with those entities or individuals that do not adhere to those standards of conduct or practices for commercial email solicitations that the blacklisting entity believes are appropriate. If a company’s IP addresses are listed by a blacklisting entity, emails sent from those addresses may be blocked if they are sent to any internet domain or internet address that subscribes to the blacklisting entity’s service or uses its blacklist.

From time to time, some of our IP addresses have become, and we expect will continue to be, listed with one or more blacklisting entities due to the messaging practices of our customers and other users. We may be at an increased risk of having our IP addresses blacklisted due to our scale and volume of email processed, compared to our smaller competitors. While the overall percentage of such email solicitations that our individual customers send may be at or below reasonable standards, the total aggregate number of all emails that we process on behalf of our customers may trigger increased scrutiny from these blacklisting entities. There can be no guarantee that we will be able to successfully remove ourselves from those lists. Because we fulfill email delivery on behalf of our customers, blacklisting of this type could undermine the effectiveness of our customers’ transactional

email, email marketing programs and other email communications, all of which could have a material negative impact on our business, financial condition and results of operations.

Additionally, inbox service providers can block emails from reaching their users. While we continually improve our own technology and work closely with inbox service providers to maintain our deliverability rates, the implementation of new or more restrictive policies by inbox service providers may make it more difficult to deliver our customers' emails, particularly if we are not given adequate notice of a change in policy or struggle to update our platform or services to comply with the changed policy in a reasonable amount of time. In addition, some inbox service providers categorize as "promotional" emails that originate from email service providers and, as a result, direct them to an alternate or "tabbed" section of the recipient's inbox. If inbox service providers materially limit or halt the delivery of our customers' emails, or if we fail to deliver our customers' emails in a manner compatible with inbox service providers' email handling or authentication technologies or other policies, or if the open rates of our customers' emails are negatively impacted by the actions of inbox service providers to categorize emails, then customers may question the effectiveness of our platform and cancel their accounts. This, in turn, could harm our business, financial condition and results of operations.

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.

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.

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 \$26.2 million on our September 30, 2019 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. For example, global political events, including Brexit, trade tariff developments and other geopolitical events have caused global economic uncertainty and variability in foreign currency exchange rates. While we have primarily transacted with customers and business partners in U.S. dollars, we have transacted with customers in Japan in Japanese Yen, in Australia in AUD and in Europe in GBP, 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 the nine months ended September 30, 2019, as a result of our SendGrid acquisition, we assumed a \$58.9 million deferred tax liability, as described in Note 6 and Note 16 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. 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 in Part I, Item 2, “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, stock-based compensation and capitalization of our internal-use software development costs. 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”) 842, “Leases”, became effective January 1, 2019. The adoption of this new guidance had a significant impact on our balance sheet as described in details Note 2 and Note 5 to our unaudited condensed consolidated financial statements included elsewhere in this Quarterly Report on Form 10-Q. 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 September 30, 2019, we carried a net \$2,748.6 million of goodwill and intangible assets. 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 September 30, 2019, the trading price of our Class A common stock has ranged from \$22.80 per share to \$151.00 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;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business, including regulations relating to the prevention of spam and robocalls;
- 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;
- 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 September 30, 2019, our directors, executive officers and their respective affiliates, held in the aggregate 38.5% 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 triggering of the conditional conversion feature of the Notes could adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the Notes is triggered, holders of the Notes will be entitled to convert the Notes at any time during specified periods at their option. This conditional conversion feature was triggered during the three months ended September 30, 2019, as the last reported sale price of our Class A common stock was more than or equal to 130% of the conversion price for at least 20 trading days (whether or not consecutive) in the period of 30 consecutive trading days ending on September 30, 2019 (the last trading day of the calendar quarter), and therefore the Notes are currently convertible, in whole or in part, at the option of the holders between October 1, 2019 through December 31, 2019. Whether the

Notes will be convertible following such period will depend on the continued satisfaction of this condition or another conversion condition in the future. If one or more holders elect to convert their Notes during a period in which the Notes are convertible, 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 2. Unregistered Sales of Equity Securities and Use of Proceeds

Unregistered Sales of Equity Securities

None

Item 3. Defaults Upon Senior Securities

Not applicable

Item 4. Mine Safety Disclosures

Not applicable

Item 5. Other Information

Not applicable

Item 6. Exhibits

The documents listed in the Exhibit Index of this Quarterly Report on Form 10-Q are incorporated by reference or are filed with this Quarterly Report on Form 10-Q, in each case as indicated therein.

EXHIBIT INDEX

Exhibit Number	Description	Filing Date
10.1*	Twilio Inc. Amended and Restated 2016 Employee Stock Purchase Plan	Filed herewith
10.2*	Twilio Inc. 2019 France Sub-Plan to the 2016 Stock Option and Incentive Plan	Filed herewith
31.1	Certification of the Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith
31.2	Certification of the Chief 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 - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document	Filed herewith
101.SCH	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

* Indicates a management contract or compensatory plan or arrangement.

** The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Quarterly Report on Form 10-Q 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.

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.

October 31, 2019

/s/ JEFFREY LAWSON

Jeffrey Lawson

Chief Executive Officer (Principal Executive Officer)

October 31, 2019

/s/ KHOZEMA SHIPCHANDLER

Khozema Shipchandler

Chief Financial Officer (Principal Accounting and Financial Officer)

TWILIO INC.

AMENDED AND RESTATED 2016 EMPLOYEE STOCK PURCHASE PLAN

The purpose of the Twilio Inc. Amended and Restated 2016 Employee Stock Purchase Plan (“the Plan”) is to provide eligible employees of Twilio Inc. (the “Company”) and each Designated Company (as defined in Section 11) with opportunities to purchase shares of the Company’s Class A common stock, par value \$0.001 per share (the “Common Stock”). 2,400,000 shares of Common Stock in the aggregate have been approved and reserved for this purpose, plus on January 1, 2017 and each January 1 thereafter, the number of shares reserved and available for issuance under the Plan shall be cumulatively increased by the lesser of (i) 1,800,000 shares of Common Stock, (ii) one percent of the number of shares of Class A and Class B common stock of the Company issued and outstanding on the immediately preceding December 31 or (iii) such lesser number of shares of Common Stock determined by the Administrator.

The Plan includes two components: a Code Section 423 Component (the “423 Component”) and a non-Code Section 423 Component (the “Non-423 Component”). It is intended for the 423 Component to constitute an “employee stock purchase plan” within the meaning of Section 423(b) of the U.S. Internal Revenue Code of 1986, as amended (the “Code”) and the 423 Component shall be interpreted in accordance with that intent (although the Company makes no undertaking or representation to maintain such qualification). In addition, this Plan authorizes the grant of options under the Non-423 Component that does not qualify as an “employee stock purchase plan” under Section 423 of the Code. Except as otherwise provided herein, the Non-423 Component will operate and be administered in the same manner as the 423 Component.

1. Administration. The Plan will be administered by the person or persons (the “Administrator”) appointed by the Company’s Board of Directors (the “Board”) for such purpose. The Administrator has authority at any time to: (i) adopt, alter and repeal such rules, subplans, guidelines and practices for the administration and operation of the Plan and for its own acts and proceedings as it shall deem advisable, including to accommodate the specific requirements of local laws, regulations and procedures for jurisdictions outside of the United States; (ii) interpret the terms and provisions of the Plan; (iii) make all determinations it deems advisable for the administration of the Plan; (iv) decide all disputes arising in connection with the Plan; and (v) otherwise supervise the administration of the Plan. All

interpretations and decisions of the Administrator shall be binding on all persons, including the Company and the Participants. No member of the Board or individual exercising administrative authority with respect to the Plan shall be liable for any action or determination made in good faith with respect to the Plan or any option granted hereunder.

2. Offerings. The Company will make one or more offerings to eligible employees to purchase Common Stock under the Plan (“Offerings”). Unless otherwise determined by the Administrator, the initial Offering will begin on the date of the Company’s Initial Public Offering and will end on the following May 15th (the “Initial Offering”). Thereafter, unless otherwise determined by the Administrator, an Offering will begin on the first business day occurring after each November 15th and May 15th and will end on the last business day occurring on or before the following May 15th and November 15th, respectively. The Administrator may, in its discretion, designate a different period for any Offering, provided that no Offering shall exceed 27 months in duration.

3. Eligibility. All individuals classified as employees on the payroll records of the Company and each Designated Company are eligible to participate in any one or more of the Offerings under the Plan, provided that as of the first day of the applicable Offering (the “Offering Date”) they are customarily employed by the Company or a Designated Company for more than 20 hours a week, unless the exclusion of employees who do not meet this requirement is not permissible under applicable law. Notwithstanding any other provision herein, individuals who are not contemporaneously classified as employees of the Company or a Designated Company for purposes of the Company’s or applicable Designated Company’s payroll system are not considered to be eligible employees of the Company or any Designated Company and shall not be eligible to participate in the Plan. In the event any such individuals are reclassified as employees of the Company or a Designated Company for any purpose, including, without limitation, common law or statutory employees, by any action of any third party, including, without limitation, any government agency, or as a result of any private lawsuit, action or administrative proceeding, such individuals shall, notwithstanding such reclassification, remain ineligible for participation. Notwithstanding the foregoing, the exclusive means for individuals who are not contemporaneously classified as employees of the Company or a Designated Company on the Company’s or Designated Company’s payroll system to become eligible to participate in a plan which is equivalent to this Plan is through the adoption of a subplan, which specifically renders such individuals eligible to participate therein.

4. Participation.

(a) Participants on Effective Date. Each eligible employee at the time of the Initial Public Offering shall be deemed to be a Participant at such time. If an eligible employee is deemed to be a Participant pursuant to this Section 4(a), such individual shall be deemed not to have authorized payroll deductions or contributions and shall not purchase any Common Stock hereunder unless he or she thereafter authorizes payroll deductions or contributions by submitting (either in electronic or written form, according to procedures established by the Company) an enrollment form (in the manner described in Section 4(c)) by the end of the Initial Offering or such earlier deadline as is specified by the Administrator. If such a Participant does not authorize payroll deductions or contributions by submitting (either in electronic or written form, according to procedures established by the Company) an enrollment form by the end of the Initial Offering (or such earlier deadline, as applicable), that Participant will be deemed to have withdrawn from the Plan.

(b) Participants in Subsequent Offerings. An eligible employee who is not a Participant on any Offering Date may participate in such Offering by submitting (either in electronic or written form, according to procedures established by the Company) an enrollment form to his or her appropriate payroll location at least 15 business days before the Offering Date (or by such other deadline as shall be established by the Administrator for the Offering).

(c) Enrollment. The enrollment form will (a) state a whole percentage to be contributed from an eligible employee's Compensation (as defined in Section 11) per pay period, (b) authorize the purchase of Common Stock in each Offering in accordance with the terms of the Plan and (c) specify the exact name or names in which shares of Common Stock purchased for such individual are to be issued or transferred pursuant to Section 10. An employee who does not enroll in accordance with these procedures will be deemed to have waived the right to participate. Unless a Participant submits (either in electronic or written form, according to procedures established by the Company) a new enrollment form or withdraws from the Plan, such Participant's contributions and purchases will continue at the same percentage of Compensation for future Offerings, provided he or she remains eligible.

(d) Notwithstanding the foregoing, participation in the Plan will neither be permitted nor be denied contrary to the requirements of the Code and any applicable law.

5. Employee Contributions. Each eligible employee may authorize payroll deductions at a minimum of 1 percent up to a maximum of 15 percent of such employee's Compensation for each pay period; provided, however, that if payroll deductions are not permitted or problematic under applicable law or for administrative reasons, the Company, in its discretion, may allow eligible employees to contribute to the Plan by other means. The Company will maintain book accounts showing the amount of payroll deductions or other contributions made by each Participant for each Offering. No interest will accrue or be paid on payroll deductions or other contributions, unless required under applicable law.

6. Contribution Changes. Except in the event of a Participant increasing his or her contributions from 0 percent during the first Offering as specified in Section 4(a) or as may be determined by the Administrator in advance of an Offering, a Participant may not increase his or her contributions during any Offering and may only decrease his or her contributions once during an Offering. However, during an Offering, a Participant may increase or decrease his or her contributions with respect to the next Offering (subject to the limitations of Section 5) by submitting (either in electronic or written form, according to procedures established by the Company) a new enrollment form at least 15 business days before the next Offering Date (or by such other deadline as shall be established by the Administrator for the Offering). The Administrator may, in advance of any Offering, establish rules permitting a Participant to increase, decrease or terminate his or her contributions during an Offering.

7. Withdrawal. A Participant may withdraw from participation in the Plan by submitting a notice of withdrawal to his or her appropriate payroll location (either in electronic or written form, according to procedures established by the Company). The Participant's withdrawal will be effective as of the next business day. Following a Participant's withdrawal, the Company will promptly refund such individual's entire account balance under the Plan to him or her (after payment for any Common Stock purchased before the effective date of withdrawal). Partial withdrawals are not permitted. Such an employee may not begin participation again during the remainder of the Offering, but may enroll in a subsequent Offering in accordance with Section 4.

8. Grant of Options. On each Offering Date, the Company will grant to each eligible employee who is then a Participant in the Plan an option ("Option") to purchase on the last day of such Offering (the "Exercise Date"), at the Option Price hereinafter provided for, the lowest of (a) a number of shares of Common Stock determined by dividing such Participant's accumulated contributions on such Exercise Date by the lower of (i) 85 percent of the Fair Market Value of the Common Stock on the Offering Date, or (ii) 85 percent of the Fair Market

Value of the Common Stock on the Exercise Date, (b) 5,000 shares; or (c) such other lesser maximum number of shares as shall have been established by the Administrator in advance of the Offering; provided, however, that such Option shall be subject to the limitations set forth below. Each Participant's Option shall be exercisable only to the extent of such Participant's accumulated payroll deductions and/or other contributions on the Exercise Date. The purchase price for each share purchased under each Option (the "Option Price") will be 85 percent of the Fair Market Value of the Common Stock on the Offering Date or the Exercise Date, whichever is less.

Notwithstanding the foregoing, no Participant may be granted an Option hereunder if such Participant, immediately after the Option was granted, would be treated as owning stock possessing 5 percent or more of the total combined voting power or value of all classes of stock of the Company or any Parent or Subsidiary (as defined in Section 11). For purposes of the preceding sentence, the attribution rules of Section 424(d) of the Code shall apply in determining the stock ownership of a Participant, and all stock which the Participant has a contractual right to purchase shall be treated as stock owned by the Participant. In addition, no Participant may be granted an Option which permits his or her rights to purchase stock under the Plan, and any other employee stock purchase plan of the Company and its Parents and Subsidiaries, to accrue at a rate which exceeds \$25,000 of the fair market value of such stock (determined on the Option grant date or dates) for each calendar year in which the Option is outstanding at any time. The purpose of the limitation in the preceding sentence is to comply with Section 423(b)(8) of the Code and shall be applied taking Options into account in the order in which they were granted.

9. Exercise of Option and Purchase of Shares. Each employee who continues to be a Participant in the Plan on the Exercise Date shall be deemed to have exercised his or her Option on such date and shall acquire from the Company such number of whole shares of Common Stock reserved for the purpose of the Plan as his or her accumulated contributions on such date will purchase at the Option Price, subject to any other limitations contained in the Plan; provided that, with respect to the Initial Offering, the exercise of each Option shall be conditioned on the closing of the Company's Initial Public Offering on or before the Exercise Date. Any amount remaining in a Participant's account at the end of an Offering solely by reason of the inability to purchase a fractional share will be carried forward to the next Offering; any other balance remaining in a Participant's account at the end of an Offering will be refunded to the Participant promptly.

If a Participant has more than one Option outstanding under the Plan, unless he or she otherwise indicates in agreements or notices delivered hereunder: (i) each agreement or notice delivered by that Participant shall be deemed to apply to all of his or her Options under the Plan; and (ii) an Option with a lower Option Price (or an earlier granted Option, if different Options have identical Option Prices) shall be exercised to the fullest possible extent before an Option with a higher Option Price (or a later granted Option if different Options have identical Option Prices) shall be exercised.

10. Issuance of Certificates. Certificates, or book entries for uncertificated shares, representing shares of Common Stock purchased under the Plan may be issued only in the name of the employee or, if permitted by the Administrator, in the name of the employee and another person of legal age as joint tenants with rights of survivorship, or in the name of a broker authorized by the employee to be his, her or their, nominee for such purpose.

11. Definitions.

The term "Affiliate" means any entity that is directly or indirectly controlled by the Company which does not meet the definition of a Subsidiary below, as determined by the Administrator, whether new or hereafter existing.

The term "Compensation" means the amount of base pay, prior to salary reduction pursuant to Sections 125, 132(f) or 401(k) of the Code or comparable reductions under laws outside the United States, and commissions, but excluding overtime, incentive or bonus awards, allowances and reimbursements for expenses such as relocation allowances or travel expenses, income or gains on the exercise, vesting or settlement of Company equity incentive awards, and similar items. The Administrator shall have the discretion to determine the application of this definition to Participants outside of the United States.

The term "Designated Company" means any present or future Affiliate or Subsidiary (as defined below) that has been designated by the Administrator to participate in the Plan. The Administrator may so designate any Affiliate or Subsidiary, or revoke any such designation, at any time and from time to time, either before or after the Plan is approved by the stockholders and may further designate such companies as participating in the 423 Component or the Non-423 Component. For purposes of the 423 Component, only Subsidiaries may be Designated Companies. The current list of Designated Companies is attached hereto as Appendix A.

The term “Fair Market Value of the Common Stock” on any given date means the fair market value of the Common Stock determined in good faith by the Administrator; provided, however, that if the Common Stock is admitted to quotation on the New York Stock Exchange (the “NYSE”) or another national securities exchange, the determination shall be made by reference to the closing price on such date. If there is no closing price for such date, the determination shall be made by reference to the last date preceding such date for which there is a closing price. Notwithstanding the foregoing, if the date for which Fair Market Value of the Common Stock is determined is the first day when trading prices for the Common Stock are reported on the NYSE or another national securities exchange, the Fair Market Value of the Common Stock shall be the “Price to the Public” (or equivalent) set forth on the cover page for the final prospectus relating to the Company’s Initial Public Offering.

The term “Initial Public Offering” means the first day when trading prices for the Common Stock are reported on the NYSE or another national securities exchange, pursuant to an effective registration statement under the U.S. Securities Act of 1933, as amended, covering the offer and sale by the Company of its Common Stock.

The term “Parent” means a “parent corporation” with respect to the Company, as defined in Section 424(e) of the Code.

The term “Participant” means an individual who is eligible as determined in Section 3 and who has complied with the provisions of Section 4.

The term “Subsidiary” means a “subsidiary corporation” with respect to the Company, as defined in Section 424(f) of the Code.

12. Rights on Termination of Employment. Unless otherwise required by applicable law, if a Participant’s employment terminates for any reason before the Exercise Date for any Offering, no contributions will be taken from any pay due and owing to the Participant and the balance in the Participant’s account will be paid to such Participant or, in the case of such Participant’s death, if permitted by the Administrator, to his or her designated beneficiary as if such Participant had withdrawn from the Plan under Section 7. An employee will be deemed to have terminated employment, for this purpose, if the corporation that employs him or her, having been a Designated Company, ceases to be an Affiliate or a Subsidiary, as applicable, or if the employee is transferred to any corporation other than the Company or a Designated Company. An employee will not be deemed to have terminated employment for this purpose, if the employee is on an approved leave of absence for military service or sickness or for any other purpose

approved by the Company, if the employee's right to reemployment is guaranteed either by a statute or by contract or under the policy pursuant to which the leave of absence was granted or if the Administrator otherwise provides in writing.

13. Special Rules. Notwithstanding anything herein to the contrary, the Administrator may adopt special rules applicable to the employees of a particular Designated Company, whenever the Administrator determines that such rules are necessary or appropriate for the implementation of the Plan in a jurisdiction where such Designated Company has employees; provided that if such rules are inconsistent with the requirements of Section 423(b) of the Code, these employees will participate in the Non-423 Component. Any special rules established pursuant to this Section 13 shall, to the extent possible, result in the employees subject to such rules having substantially the same rights as other Participants in the Plan.

14. Optionees Not Stockholders. Neither the granting of an Option to a Participant nor the deductions from his or her pay or other contributions shall deem such Participant to be a holder of the shares of Common Stock covered by an Option under the Plan until such shares have been purchased by and issued or transferred to him or her.

15. Rights Not Transferable. Rights under the Plan are not transferable by a Participant other than by will or the laws of descent and distribution, and are exercisable during the Participant's lifetime only by the Participant.

16. Application of Funds. All funds received or held by the Company under the Plan may be combined with other corporate funds and may be used for any corporate purpose; unless otherwise required under applicable law.

17. Adjustment in Case of Changes Affecting Common Stock. In the event of a subdivision of outstanding shares of Common Stock, the payment of a dividend in Common Stock or any other change affecting the Common Stock, the number of shares approved for the Plan and the share limitation set forth in Section 8 shall be equitably or proportionately adjusted to give proper effect to such event.

18. Amendment of the Plan. The Board may at any time and from time to time amend the Plan in any respect, except that without the approval within 12 months of such Board action by the stockholders, no amendment shall be made increasing the number of shares approved for the Plan or making any other change that would require

stockholder approval in order for the 423 Component of the Plan, as amended, to qualify as an “employee stock purchase plan” under Section 423(b) of the Code.

19. Insufficient Shares. If the total number of shares of Common Stock that would otherwise be purchased on any Exercise Date plus the number of shares purchased under previous Offerings under the Plan exceeds the maximum number of shares issuable under the Plan, the shares then available shall be apportioned among Participants in proportion to the amount of payroll deductions accumulated on behalf of each Participant that would otherwise be used to purchase Common Stock on such Exercise Date.

20. Termination of the Plan. The Plan may be terminated at any time by the Board. Upon termination of the Plan, all amounts in the accounts of Participants shall be promptly refunded. The Plan shall automatically terminate on the ten year anniversary of the date of the Company’s Initial Public Offering.

21. Compliance with Law. The Company’s obligation to sell and deliver Common Stock under the Plan is subject to completion of any registration or qualification of the Common Stock under any U.S. or non-U.S. local, state or federal securities or exchange control law or under rulings or regulations of the U.S. Securities and Exchange Commission (“SEC”) or of any other governmental regulatory body, and to obtaining any approval or other clearance from any U.S. and non-U.S. local, state or federal governmental agency, which registration, qualification or approval the Company shall, in its absolute discretion, deem necessary or advisable. The Company is under no obligation to register or qualify the Common Stock with the SEC or any other U.S. or non-U.S. securities commission or to seek approval or clearance from any governmental authority for the issuance or sale of such stock.

22. Governing Law. This Plan and all Options and actions taken thereunder shall be governed by, and construed in accordance with, the laws of the State of California, applied without regard to conflict of law principles.

23. Issuance or Transfer of Shares. Shares may be issued upon exercise of an Option from authorized but unissued shares of Common Stock or, in the alternative, the Company may arrange for the transfer of shares of Common Stock (including from shares of Common Stock held in the treasury of the Company, or from any other proper source).

24. Tax Withholding. Each Participant agrees, by participating in the Plan, that the Company and its Affiliates and Subsidiaries shall have the right to deduct any Tax Liability from any payment of any kind otherwise

due to the Participant, including shares of Common Stock issuable under the Plan. Where a Tax Liability arises in connection with the Plan, the Company and/or a Designated Company may require that, as a condition of exercise of an Option and purchase of shares of Common Stock, a Participant must either:

- (a) make a payment to the Company, or otherwise as the Company directs, of an amount equal to the Company's estimate of the amount of the Tax Liability; or
- (b) enter into arrangements acceptable to the Company to secure that such payment is made (whether by surrender of shares of Common Stock, net share issuance, the sale of shares of Common Stock or otherwise).

For these purposes, "Tax Liability" shall mean any amount of U.S. or non-U.S. federal, state or local income tax, social security (or similar) contributions, payroll tax, fringe benefits tax, payment on account and/or other tax-related items related to the participation in the Plan and legally applicable to the Participant, which the Company and/or an Affiliate or Subsidiary become liable to pay on the Participant's behalf to the relevant authorities in any jurisdiction.

25. Notification Upon Sale of Shares. Each Participant who is subject to tax in the United States with respect to his or her participation in the Plan agrees, by entering the Plan, to give the Company prompt notice of any disposition of shares purchased under the Plan where such disposition occurs within two years after the date of grant of the Option pursuant to which such shares were purchased.

26. Effective Date and Approval of Shareholders. The Plan shall take effect on the date immediately preceding the date on which the Company's Registration Statement on Form S-1 becomes effective, subject to approval by the holders of a majority of the votes cast at a meeting of stockholders at which a quorum is present or by written consent of the stockholders.

APPENDIX A

Designated Companies

Twilio UK Limited (England and Wales)
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)
Twilio Sweden AB (Sweden)
Twilio Australia Pty Ltd (Australia)
Twilio Berlin GmbH (Germany)
Twilio Czechia (Czechia)
Twilio Japan GK (Japan)
Twilio Netherland BV (The Netherlands)
SendGrid, Inc.
Twilio France
Twilio Netherlands

TWILIO INC.
2016 STOCK OPTION AND INCENTIVE PLAN

2019 SUB-PLAN FOR FRANCE

This sub-plan includes additional terms applicable to Grantees providing services to the Company or a Subsidiary in France.

These terms and conditions are in addition to those set forth in the Twilio Inc. 2016 Stock Option and Incentive Plan (the “Plan”) and to the extent there are any inconsistencies between these terms and conditions and those set forth in the Plan or any award agreement, these terms and conditions shall prevail.

Any capitalized term used in this sub-plan without definition shall have the meaning ascribed to such term in the Plan or award agreement, as applicable.

1. Definitions.

The definition of “Restricted Stock Units” (“RSU”) shall be considered within the meaning of the French Commercial Code (articles L 225-197-1 to L 225-197-5).

“**Termination of Employment**” shall mean the time when the employee-employer relationship between Grantee and the Company or any Subsidiary is terminated for any reason, including, but not by way of limitation, a termination by resignation, discharge, death, disability or retirement; but excluding terminations where there is a simultaneous reemployment or continuing employment of Grantee by the Company or any Subsidiary. The Administrator, in its absolute discretion, shall determine the effect of all matters and questions relating to Termination of Employment, including, but not by way of limitation, the question of whether a particular leave of absence constitutes a Termination of Employment.

2. Notice to Grantees.

This sub-plan for France amends the terms of the Plan and any award agreement for Grantees based in France. Only employees in France of the Company or a Subsidiary are eligible to be granted RSUs or be issued shares of Stock under this sub-plan. Other service providers in France (including Consultants and Non-Employee Directors) who are not employees are not eligible to receive RSUs under this sub-plan. Accordingly, all references in the Plan or any award agreement to the Grantee’s service or termination of service shall be interpreted as references to the Grantee’s employment or Termination of Employment.

The RSUs are intended to qualify for the tax treatment provided for under the French Finance bill for 2018 (article 28 of the French Finance law n° 2017-1837 dated 30 December 2017).

The RSUs shall be granted within the individual and the global limits set by article L.225-197-1 of the French Commercial Code.

3. Terms and Conditions.

◦ **Vesting Restrictions.**

Grant Date means the effective date of the RSU Award as approved by the Board, or the duly appointed committee, which has also approved the exact terms and conditions of such Awards.

Vesting Date means the Date when the restrictions lapse and the shares of Stock become issuable as to the Grantee’s Award.

Vesting Period means the period of time from the Grant Date to the Vesting Date. For this sub-plan, no Award may vest earlier than one (1) year after the Grant Date.

As a holder of RSUs Grantees are not, and do not have any of the rights or privileges of, a stockholder of the Company, including, without limitation, any dividend rights or voting rights, in respect of the RSUs and any shares of Stock issuable upon vesting thereof unless and until such shares shall have been actually issued by the Company to the Grantee. No adjustment will be made for a dividend or other right for which the record date is prior to the date the shares of Stock are issued, except as provided in Section 3(c) of the Plan.

◦ **Sale Restrictions.**

Any shares of Stock delivered to a Grantee upon vesting of RSUs before the second anniversary of the Grant Date may not be sold until after the second anniversary of the Grant Date. The Company may enforce this restriction.

Any shares of Stock a Grantee receives upon vesting of RSUs may not be sold during the following “closed periods” under French law and the Company may enforce this restriction:

- During the 10 trading days before and 2 trading days following the publication of the Company’s annual financial statements, and
- During the period beginning when the Company’s board of directors become aware of any information, which, were it to be public knowledge, could have a significant impact on the market price of Shares, and ending 2 full trading days after the information becomes public knowledge.

◦ **Treatment upon Death or Disability.**

Notwithstanding anything to the contrary in the Plan or any award agreement, if a Grantee’s Termination of Employment occurs as a result of the Grantee’s death, any outstanding RSUs shall vest immediately. The shares of Stock issued upon such vesting shall not be subject to the restrictions on sale described under “Sale Restrictions” above.

If a Grantee’s Termination of Employment occurs as a result of the Grantee’s disability as per the definition given by second (2nd) or third (3rd) category of article L. 341-4 of the French Social Security Code, then any shares of Stock issued upon vesting of the RSUs shall not be subject to the restrictions on sale described under “Sale Restrictions” above.

4. **Special Tax Consequences.**

The Grantees agree to indemnify the Company, any Subsidiary and the employing Company, if different, from and against any liability for or obligation to pay any Tax Liability (a “**Tax Liability**” being any liability for income tax, withholding tax and any other employment related taxes or social insurance or social security contributions in any jurisdiction) that is attributable to the loss of the tax qualification described above that occurs as a result of the Grantee’s action.

**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 Quarterly Report on Form 10-Q 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: October 31, 2019

/s/ JEFFREY LAWSON

Jeffrey Lawson

Chief Executive Officer (Principal Executive Officer)

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14(a) OF
THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Khozema Shipchandler certify that:

1. I have reviewed this Quarterly Report on Form 10-Q 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: October 31, 2019

/s/ KHOZEMA SHIPCHANDLER

Khozema Shipchandler

Chief Financial Officer (Principal Accounting and Financial Officer)

**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 Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, 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: October 31, 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)