TWITTER, INC.
Form 10-Q
October 30, 2018

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the quarterly period ended September 30, 2018

OR

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

Commission File Number 001-36164

Twitter, Inc.

(Exact name of registrant as specified in its charter)

Delaware	20-8913779
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

1355 Market Street, Suite 900

San Francisco, California 94103

(Address of principal executive offices and Zip Code)

(415) 222-9670

(Registrant's telephone number, including area code)

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

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

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

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

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

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

The number of shares of the registrant's common stock outstanding as of October 25, 2018 was 761,250,269.

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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, and Section 21E of the Securities Exchange Act of 1934, as amended, 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,” “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 ability to attract and retain users and increase the level of engagement, including ad engagement, of our users and its impact on revenue;
- our plans regarding health and user safety, including our expectations regarding impact on our reported metrics, policies, enforcement and preventing manipulation of our platform;
- our expectations regarding MAUs, changes in DAUs, changes in cost per ad engagement and changes in ad engagements;
- our ability to develop or acquire new products, product features and services, improve our existing products and services, including with respect to Promoted Tweet product features, video and performance advertising, and increase the value of our products and services;
- our business strategies, plans and priorities, including our plans for growth and hiring, investment in our research and development efforts and our plans to scale capacity and enhance capability and reliability of our infrastructure, including capital expenditures relating to infrastructure;
- our ability to provide new content from third parties, including our ability to secure live streaming video content on terms that are acceptable to us;
- our ability to attract advertisers to our platforms, products and services and increase the amount that advertisers spend with us;
- our expectations regarding our user growth and growth rates and related opportunities as well as the continued usage of our mobile applications, including the impact of seasonality;
- our ability to increase our revenue and our revenue growth rate, including by increasing our data licensing revenue through our product and channel segmented go-to-market approach, as well as by increasing our mobile ad exchange revenue;
- our ability to improve user monetization;
- our future financial performance, including trends in cost per ad engagement, revenue (including data licensing revenue), cost of revenue, operating expenses, including stock-based compensation and income taxes;
- our expectations regarding our tax expense and cash taxes;
- the impact of the 2017 Tax Cuts and Jobs Act on our business;
- our expectations regarding outstanding litigation or the decisions of the courts;
- the effects of seasonal trends on our results of operations;
- the impact of our recent financial results on our valuation allowance for federal and state deferred tax assets;
- the sufficiency of our cash and cash equivalents, short-term investment balance and credit facility together with cash generated from operations to meet our working capital and capital expenditure requirements;
- our ability to timely and effectively develop, invest in, scale and adapt our existing technology and network infrastructure;
- our ability to successfully acquire and integrate companies and assets; and
- our expectations regarding international operations and foreign exchange gains and losses.

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, operating results, cash flows or prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties and other factors described in the section titled “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.

NOTE REGARDING KEY METRICS

We review a number of metrics, including monthly active users, or MAUs, changes in daily active users or daily active usage, or DAUs, changes in ad engagements and changes in cost per ad engagement, to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans and make strategic decisions. See the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Metrics" for a discussion of how we calculate MAUs, changes in DAUs, changes in ad engagements and changes in cost per ad engagement.

The numbers of active users presented in this Quarterly Report on Form 10-Q are based on internal company data. While these numbers are based on what we believe to be reasonable estimates for the applicable period of measurement, there are inherent challenges in measuring usage and user engagement across our large user base around the world. Furthermore, our metrics have been, and may continue to be, impacted by our health efforts, which are our overall efforts to reduce malicious activity on the service, inclusive of spam, malicious automation, and fake accounts. For example, there are a number of false or spam accounts in existence on our platform. We have performed an internal review of a sample of accounts and estimate that false or spam accounts during the third quarter of 2018 continues to represent less than 5% of our MAUs during the quarter. The false or spam accounts for a period represents the average of false or spam accounts in the samples during each monthly analysis period during the quarter. In making this determination, we applied significant judgment, so our estimation of false or spam accounts may not accurately represent the actual number of such accounts, and the actual number of false or spam accounts could be higher than we have estimated. We are continually seeking to improve our ability to estimate the total number of spam accounts and eliminate them from the calculation of our active users, and have made improvements in our spam detection capabilities that have resulted in the suspension of a large number of spam, malicious automation and fake accounts. We intend to continue to make such improvements. After we determine an account is spam, malicious automation or fake, we stop counting it in our MAU, DAU or related metrics. Additionally, we rely on third-party SMS aggregators and mobile carriers to deliver SMS messages to certain of our users when we send our SMS messages to such accounts. If, however, we are notified of material deliverability issues because of, for example, infrastructure issues at the service-provider level or governmental restrictions based on content, we do not include the affected users in MAUs. We also treat multiple accounts held by a single person or organization as multiple users for purposes of calculating our active users because we permit people and organizations to have more than one account. Additionally, some accounts used by organizations are used by many people within the organization. As such, the calculations of our active users may not accurately reflect the actual number of people or organizations using our platform.

Certain metrics also include users that access Twitter through applications that automatically contact our servers for regular updates with no discernible user-initiated action involved, which we refer to as third-party auto-polling MAU. This activity causes our system to count MAUs associated with such applications as active users on the day or days such contact occurs. As of December 31, 2017, fewer than 8.5% of MAUs may have been third-party auto-polling MAU.

In addition, our data regarding user geographic location for purposes of reporting the geographic location of our MAUs is based on the IP address or phone number associated with the account when a user initially registered the account on Twitter. The IP address or phone number may not always accurately reflect a user's actual location at the time such user engaged with our platform. For example, a mobile user may appear to be accessing Twitter from the location of the proxy server that the user connects to rather than from a user's actual location.

We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy. Our measures of user growth and user engagement may differ from estimates published by third parties or from similarly-titled metrics of our competitors due to differences in methodology.

Our total audience metrics are based on both internal metrics and data from Google Analytics, which measures logged-out visitors to our properties.

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements

TWITTER, INC.

CONSOLIDATED BALANCE SHEETS

(In thousands, except par value)

(Unaudited)

	September 30, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 1,928,929	$ 1,638,413
Short-term investments	4,027,614	2,764,689
Accounts receivable, net of allowance for doubtful accounts of $4,147 and $5,430	621,943	664,268
Prepaid expenses and other current assets	141,274	254,514
Total current assets	6,719,760	5,321,884
Property and equipment, net	904,027	773,715
Intangible assets, net	44,810	49,654
Goodwill	1,227,939	1,188,935
Deferred tax assets, net	765,708	10,455
Other assets	83,948	67,834
Total assets	$ 9,746,192	$ 7,412,477
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 116,685	$ 170,969
Accrued and other current liabilities	380,567	327,333
Convertible notes, short-term	884,435	—
Capital leases, short-term	75,959	84,976
Total current liabilities	1,457,646	583,278
Convertible notes, long-term	1,710,065	1,627,460
Capital leases, long-term	37,371	81,308
Deferred and other long-term tax liabilities, net	20,732	13,240
Other long-term liabilities	67,806	59,973
Total liabilities	3,293,620	2,365,259
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Preferred stock, $0.000005 par value-- 200,000 shares authorized; none issued and outstanding	—	—
Common stock, $0.000005 par value-- 5,000,000 shares authorized; 760,403 and 746,902 shares issued and outstanding	4	4
Additional paid-in capital	8,225,037	7,750,522
Accumulated other comprehensive loss	(63,093)	(31,579)

Accumulated deficit	(1,709,376)	(2,671,729)
Total stockholders' equity	6,452,572	5,047,218
Total liabilities and stockholders' equity	$ 9,746,192	$ 7,412,477

The accompanying notes are an integral part of these consolidated financial statements.

TWITTER, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share data)

(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Revenue	$758,111	$589,633	$2,133,523	$1,711,739
Costs and expenses				
Cost of revenue	243,644	210,016	696,652	643,263
Research and development	150,764	136,115	412,684	408,014
Sales and marketing	193,496	172,957	559,587	527,847
General and administrative	78,339	63,266	218,183	203,973
Total costs and expenses	666,243	582,354	1,887,106	1,783,097
Income (loss) from operations	91,868	7,279	246,417	(71,358)
Interest expense	(38,336)	(26,732)	(95,333)	(78,537)
Interest income	36,067	12,028	74,208	31,034
Other expense, net	(2,341)	(10,106)	(8,285)	(70,110)
Income (loss) before income taxes	87,258	(17,531)	217,007	(188,971)
Provision (benefit) for income taxes	(701,921)	3,564	(733,286)	10,171
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)
Net income (loss) per share attributable to common stockholders:				
Basic	$1.04	$(0.03)	$1.26	$(0.27)
Diluted	$1.02	$(0.03)	$1.23	$(0.27)
Weighted-average shares used to compute net income (loss) per share attributable to common stockholders:				
Basic	756,537	736,515	752,233	729,626
Diluted	776,002	736,515	771,511	729,626

The accompanying notes are an integral part of these consolidated financial statements.

TWITTER, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

(In thousands)

(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)
Other comprehensive income (loss), net of tax:				
Change in unrealized gain (loss) on investments in available-for-sale securities	594	564	149	404
Change in foreign currency translation adjustment	(7,253)	9,508	(31,663)	32,093
Net change in accumulated other comprehensive loss	(6,659)	10,072	(31,514)	32,497
Comprehensive income (loss)	$782,520	$(11,023)	$918,779	$(166,645)

The accompanying notes are an integral part of these consolidated financial statements.

TWITTER, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

(Unaudited)

	Nine Months Ended September 30, 2018	2017
Cash flows from operating activities		
Net income (loss)	$950,293	$(199,142)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization expense	314,775	303,347
Stock-based compensation expense	244,341	331,352
Amortization of discount on convertible notes	74,909	59,644
Changes in bad debt provision	1,221	26
Deferred income taxes	(23,072)	(1,343)
Deferred tax assets valuation allowance release	(725,294)	—
Impairment of investments in privately-held companies	3,000	62,439
Other adjustments	(7,059)	(1,278)
Changes in assets and liabilities, net of assets acquired and liabilities assumed from acquisitions:		
Accounts receivable	35,389	155,598
Prepaid expenses and other assets	103,234	4,353
Accounts payable	(22,590)	(14,458)
Accrued and other liabilities	58,565	(67,436)
Net cash provided by operating activities	1,007,712	633,102
Cash flows from investing activities		
Purchases of property and equipment	(409,913)	(120,583)
Proceeds from sales of property and equipment	8,127	2,783
Purchases of marketable securities	(4,054,312)	(2,020,115)
Proceeds from maturities of marketable securities	2,750,427	2,023,778
Proceeds from sales of marketable securities	42,131	108,818
Proceeds from sales of long-lived assets	—	35,000
Business combinations, net of cash acquired	(33,572)	—
Other investing activities	(2,175)	(10,927)
Net cash provided by (used in) investing activities	(1,699,287)	18,754
Cash flows from financing activities		
Proceeds from issuance of convertible notes	1,150,000	—
Purchases of convertible note hedges	(267,950)	—
Proceeds from issuance of warrants concurrent with note hedges	186,760	—
Debt issuance costs	(13,483)	—
Taxes paid related to net share settlement of equity awards	(16,180)	(7,049)
Payments of capital lease obligations	(69,504)	(80,685)
Proceeds from exercise of stock options	3,251	7,872
Proceeds from issuances of common stock under employee stock purchase plan	16,337	14,019
Net cash provided by (used in) financing activities	989,231	(65,843)

Net increase in cash, cash equivalents and restricted cash	297,656	586,013
Foreign exchange effect on cash, cash equivalents and restricted cash	(15,211)	8,798
Cash, cash equivalents and restricted cash at beginning of period	1,673,857	1,027,633
Cash, cash equivalents and restricted cash at end of period	$1,956,302	$1,622,444
Supplemental disclosures of non-cash investing and financing activities		
Common stock issued in connection with acquisitions	$19,165	$—
Equipment purchases under capital leases	$16,086	$100,633
Changes in accrued property and equipment purchases	$(28,617)	$(23,521)
Reconciliation of cash, cash equivalents and restricted cash as shown in the consolidated statements of cash flows		
Cash and cash equivalents	$1,928,929	$1,586,558
Restricted cash included in prepaid expenses and other current assets	1,690	8,616
Restricted cash included in other assets	25,683	27,270
Total cash, cash equivalents and restricted cash	$1,956,302	$1,622,444

The accompanying notes are an integral part of these consolidated financial statements.

TWITTER, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(Unaudited)

Note 1. Description of Business and Summary of Significant Accounting Policies

Twitter, Inc. (“Twitter” or the “Company”) was incorporated in Delaware in April 2007, and is headquartered in San Francisco, California. Twitter offers products and services for users, advertisers, developers and platform and data partners.

Basis of Presentation

The consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation.

The accompanying unaudited consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (GAAP). The unaudited interim consolidated financial statements have been prepared on the same basis as the audited consolidated financial statements and reflect, in management’s opinion, all adjustments of a normal, recurring nature that are necessary for the fair statement of the Company’s financial position, results of operations and cash flows for the interim periods, but are not necessarily indicative of the results expected for the full fiscal year or any other period.

The accompanying interim consolidated financial statements and these related notes should be read in conjunction with the consolidated financial statements and related notes included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2017.

Use of Estimates

The preparation of the Company’s consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, as well as related disclosure of contingent assets and liabilities. Actual results could differ materially from the Company’s estimates. To the extent that there are material differences between these estimates and actual results, the Company’s financial condition or operating results will be affected. The Company bases its estimates on past experience and other assumptions that the Company believes are reasonable under the circumstances, and the Company evaluates these estimates on an ongoing basis.

Certain prior period amounts have been reclassified to conform to the current period presentation.

Recent Accounting Pronouncements

Recently adopted accounting pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued a new accounting standard update on revenue recognition from contracts with customers (“Topic 606”). The new guidance replaces all current GAAP guidance on this topic and requires entities to recognize revenue when control of the promised goods or services is transferred to customers at an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. The Company adopted this new accounting standard on January 1, 2018 using the modified retrospective method. See Note 2 – Revenue for further details.

In January 2016, the FASB issued a new accounting standard update on the classification and measurement of financial instruments. The new guidance principally affects accounting standards for equity investments, financial liabilities where the fair value option has been elected, and the presentation and disclosure requirements for financial instruments. The Company adopted this new accounting standard prospectively for its non-marketable equity securities during the three months ended March 31, 2018. The Company has elected to use the measurement alternative for its non-marketable equity securities, defined as cost adjusted for changes from observable transactions for identical or similar investments of the same issuer, less impairment. The Company's investments in privately-held companies are non-marketable equity securities without readily determinable fair values and there was no upward adjustment during the three and nine months ended September 30, 2018. See Note 8 – Acquisitions and Other Investments for further details.

In August 2016, the FASB issued a new accounting standard update on the statement of cash flows. The new guidance clarifies classification of certain cash receipts and cash payments in the statement of cash flows. The Company adopted this new accounting standard retrospectively during the three months ended March 31, 2018 and the adoption did not have a material impact on the Company's financial statements.

In October 2016, the FASB issued a new accounting standard update on simplifying the accounting for income taxes related to intra-entity asset transfers. The new guidance requires an entity to recognize the tax expense from the sale of an asset in the seller's tax jurisdiction when the transfers occurs, even though the pre-tax effects of that transaction are eliminated in consolidation. The Company adopted this new accounting standard on January 1, 2018 using the modified retrospective method. Upon adoption, the Company recognized an additional deferred tax asset of $29.5 million related to a prior period intra-entity transfer, which was offset by a full valuation allowance. Therefore, the recognition of the deferred tax asset upon adoption did not have an impact on the Company's accumulated deficit. See Note 12 – Income Taxes for further details.

In November 2016, the FASB issued a new accounting standard update on the presentation of restricted cash in the statement of cash flows. The new guidance requires an entity to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows, and an entity will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. The Company adopted this new accounting standard retrospectively during the three months ended March 31, 2018. As a result of the adoption, net cash provided by investing activities was adjusted to exclude the changes in restricted cash, resulting in a decrease of $3.2 million in the previously-reported amount for the nine months ended September 30, 2017. Restricted cash balances are primarily cash deposits secured against letters of credit related to certain property leases.

In January 2017, the FASB issued a new accounting standard update on narrowing the definition of a business. The new guidance requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities is not a business. The guidance also requires a business to include at least one substantive process and narrows the definition of outputs. The Company adopted this new accounting standard retrospectively during the three months ended March 31, 2018 and the adoption did not have a material impact on the Company's financial statements.

Recently issued accounting pronouncements not yet adopted

In February 2018, the FASB issued a new accounting standard update to give entities the option to reclassify tax effects stranded in accumulated other comprehensive income as a result of tax reform to retained earnings (accumulated deficits). The new guidance also requires entities to make additional disclosures, regardless of whether reclassification of tax effects is elected. This guidance will be effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted. The Company is evaluating the impact of adopting this new accounting standard update on its financial statements and related disclosures.

In February 2016, the FASB issued a new accounting standard update on leases. The new guidance requires lessees to recognize right-of-use assets and lease liabilities for operating leases, initially measured at the present value of the lease payments, on the balance sheet. In addition, it requires lessees to recognize a single lease cost, calculated so that the cost of the lease is allocated over the lease term, generally on a straight-line basis. This guidance will be effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2018. In July 2018, the FASB issued updated guidance which allows an additional transition method to adopt the new lease standard at the adoption date, as compared to the beginning of the earliest period presented, and recognize a cumulative-effect adjustment to the beginning balance of retained earnings in the period of adoption. The Company plans to elect this transition method on January 1, 2019. The Company is evaluating the impact of adopting these new accounting standard updates on the financial statements and related disclosures. The Company anticipates this new guidance will materially impact its financial statements, given the Company has a significant number of operating leases.

In August 2018, the FASB issued a new accounting standard update which eliminates, adds and modifies certain disclosure requirements for fair value measurements. The update eliminates the requirement to disclose the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, and introduces a requirement to disclose the range and weighted average used to develop significant unobservable inputs for Level 3 fair value measurements. This guidance will be effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. The Company plans to adopt this new accounting standard on January 1, 2020. Adoption is not expected to have a material impact on the Company’s financial statements and related disclosures. In August 2018, the FASB issued a new accounting standard update requiring a customer in a cloud computing arrangement (i.e., hosting arrangement) that is a service contract to capitalize certain implementation costs as if the arrangement was an internal-use software project. Capitalized implementation costs related to a hosting arrangement that is a service contract will be amortized over the term of the hosting arrangement, beginning when the module or component of the hosting arrangement is ready for its intended use. This guidance will be effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Early adoption is permitted. The Company is evaluating the impact of adopting this new accounting standard update on its financial statements and related disclosures.

With the exception of the standards discussed above, there have been no other recent accounting pronouncements or changes in accounting pronouncements during the nine months ended September 30, 2018, as compared to the recent accounting pronouncements described in the Company’s Annual Report on Form 10-K for the fiscal year ended December 31, 2017, that are of significance or potential significance to the Company.

Note 2. Revenue

Adoption of ASC Topic 606, "Revenue from Contracts with Customers"

On January 1, 2018, the Company adopted Topic 606 using the modified retrospective method applied to those contracts not yet substantially completed as of January 1, 2018. Results for reporting periods beginning after January 1, 2018 are presented under the new revenue standard, while prior period amounts are not adjusted and continue to be reported in accordance with the Company's historical accounting practices.

Revenue Recognition

Revenue is recognized when the control of promised goods or services is transferred to customers at an amount that reflects the consideration to which the Company expects to be entitled to in exchange for those goods or services. The Company identifies its contracts with customers and all performance obligations within those contracts. The Company then determines the transaction price and allocates the transaction price to the performance obligations within the Company's contracts with customers, recognizing revenue when, or as, the Company satisfies its performance obligations. While the majority of the Company's revenue transactions are based on standard business terms and conditions, the Company also enters into sales agreements with advertisers and data partners that sometimes involve multiple performance obligations and occasionally include non-standard terms or conditions.

Revenue by geography is based on the billing addresses of the customers. The following table sets forth revenue by services and revenue by geographic area (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017 (1)	2018	2017 (1)
Revenue by services:				
Advertising services	$649,816	$502,802	$1,826,032	$1,465,730
Data licensing and other	108,295	86,831	307,491	246,009
Total revenue	$758,111	$589,633	$2,133,523	$1,711,739

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017 (1)	2018	2017 (1)
Revenue by geographic area:				
United States	$423,443	$332,092	$1,136,670	$1,007,351
Japan	130,425	90,608	369,470	237,455
Rest of World	204,243	166,933	627,383	466,933
Total revenue	$758,111	$589,633	$2,133,523	$1,711,739

(1) Prior period amounts have not been adjusted due to adoption of the new revenue standard under the modified retrospective method.

Revenue Recognition Accounting Policy

The Company generates the substantial majority of its revenue from the sale of advertising services with the balance from data licensing and other arrangements.

The Company generates its advertising revenue primarily from the sale of its Promoted Products: (i) Promoted Tweets, (ii) Promoted Accounts and (iii) Promoted Trends. Promoted Tweets and Promoted Accounts are pay-for-performance advertising products or pay on impressions delivered, each priced through an auction. Promoted Trends are featured by geography and offered on a fixed-fee-per-day basis. Advertisers are obligated to pay when a user engages with a Promoted Tweet, follows a Promoted Account, when an impression is delivered, or when a Promoted Trend is displayed. These advertising services may be sold in combination as a bundled arrangement or separately on a stand-alone basis.

For the Company's Promoted Product arrangements, significant judgments are (i) determining whether the Company is the principal or the agent in arrangements where another party is involved in providing specified services to a customer, (ii) identifying the performance obligations in the contract, (iii) determining the basis for allocating contract consideration to performance obligations, and (iv) estimating the transaction price to be allocated for contracts with tiered rebate provisions.

The Company may generate revenue from the sale of certain Promoted Tweets through placement by Twitter of advertiser ads against third-party publisher content. The Company will pay the third-party publisher a revenue share fee for its right to monetize their content. In such transactions, advertisers are contracting to obtain a single integrated advertising service, the Promoted Tweet combined with the third-party publisher content, and the Company obtains control of the third-party publisher content displayed on Twitter that it then combines with the advertiser ads within the Promoted Tweet. Therefore, the Company reports advertising revenue generated from these transactions on a gross basis and records the related third-party content monetization fees as cost of revenue.

The Company also generates advertising revenue by selling services in which the Company places ads on third-party publishers’ websites, applications or other offerings. To fulfill these transactions, the Company purchases advertising inventory from third-party publishers’ websites and applications where the Company has identified the advertisers’ targeted audience and therefore incurs traffic acquisition costs prior to transferring the advertising service to its customers. At such point, the Company has the sole ability to monetize the third-party publishers advertising inventory. In such transactions, the Company obtains control of a right to a service to be performed by the third-party publishers, which gives the Company the ability to direct those publishers to provide the services to the Company's customers on the Company's behalf. Therefore, the Company reports advertising revenue generated from these transactions on a gross basis and records the related traffic acquisition costs as cost of revenue.

Fees for the advertising services above are recognized in the period when advertising is delivered as evidenced by a user engaging with a Promoted Tweet or an ad on a third-party publisher website or application in a manner satisfying the types of engagement selected by the advertisers, such as Tweet engagements (e.g., retweets, replies and likes), website clicks, mobile application installs or engagements, obtaining new followers, or video views, following a Promoted Account, delivery of impressions, or through the display of a Promoted Trend on the Company's platform.

The Company has concluded that data licensing arrangements, which grant customers a right to access Twitter intellectual property for a defined period of time, may contain a single performance obligation or may contain multiple performance obligations satisfied over the same period of time. In some of the Company's data licensing arrangements, pricing is a fixed monthly fee over a specified term. In such arrangements, data licensing revenue is recognized on a straight-line basis over the period in which the Company provides data access. In other data licensing arrangements, the Company charges customers based on the amount of sales they generate from downstream customers using Twitter data. Certain of those royalty-based data licensing arrangements are subject to minimum guarantees. The Company recognizes revenue for minimum guarantees on a straight-line basis over the period in which the Company provides data access. Royalties in excess of minimum guarantees, if any, are recognized as revenue in the period that the related downstream sales occur.

Other revenue is primarily generated from service fees from transactions completed on the Company's mobile ad exchange. The Company's mobile ad exchange enables buyers and sellers to purchase and sell advertising inventory by matching them in the exchange. The Company has determined it is not the principal in the purchase and sale of advertising inventory in transactions between third-party buyers and sellers on the exchange because the Company does not obtain control of the advertising inventory. The Company reports revenue related to its ad exchange services on a net basis for the fees paid by buyers, net of costs related to acquiring the advertising inventory paid to sellers.

Arrangements involving multiple performance obligations primarily consist of combinations of the Company's pay-for-performance products, Promoted Tweets and Promoted Accounts, which are priced through an auction, and Promoted Trends, which are priced on a fixed-fee-per day, per geography basis. For arrangements that include a combination of these products, the Company develops an estimate of the standalone selling price for these products in order to allocate any potential discount to all performance obligations in the arrangement. The estimate of standalone selling price for pay-for-performance auction based products is determined based on the winning bid price. The estimate of standalone selling price for Promoted Trends is based on Promoted Trends sold on a standalone basis and/or separately priced in a bundled arrangement by reference to a list price by geography, which is updated and approved periodically. For other arrangements involving multiple performance obligations where neither auction pricing nor standalone sales provide sufficient evidence of standalone selling price, the Company estimates standalone selling price using either an adjusted market assessment approach or an expected cost plus margin approach. The Company believes the use of its estimation approach and allocation of the transaction price on a relative standalone selling price basis to each performance obligation results in revenue recognition in a manner consistent with the underlying economics of the transaction and the allocation principle included in Topic 606.

Impact of Adoption

The Company recorded a net reduction to opening accumulated deficit of $12.1 million, an increase to unbilled revenue of $8.0 million, and a reduction to deferred revenue of $4.1 million as of January 1, 2018 due to the cumulative impact of adopting Topic 606, with the impact primarily related to its data licensing arrangements.

As a result of applying the new standard, the impact for the three months ended September 30, 2018 was an increase to revenue of $3.1 million, and an increase to unbilled revenue of $3.1 million. The impact for the nine months ended September 30, 2018 was an increase to revenue of $12.7 million, an increase to unbilled revenue of $10.6 million, and a reduction to deferred revenue of $2.1 million, with the impact primarily related to the Company’s data licensing arrangements.

Practical Expedients and Exemptions

The Company expenses sales commissions as incurred when the amortization period is one year or less. Sales commission expenses are recorded within sales and marketing in the consolidated statements of operations.

The Company applied the practical expedient to not disclose the value of remaining performance obligations not yet satisfied as of period end for contracts with an original expected duration of one year or less.

The Company applied the practical expedient to not disclose the value of remaining performance obligations not yet satisfied as of period end for variable consideration in the form of sales-based royalties promised in exchange for access licenses to its intellectual property in data licensing contracts.

Contract Balances

The Company enters into contracts with its customers, which may give rise to contract liabilities (deferred revenue) and contract assets (unbilled revenue). The payment terms and conditions within the Company's contracts vary by the type and location of its customer and products or services purchased, the substantial majority of which are due in less than one year. When the timing of revenue recognition differs from the timing of payments made by customers, the Company recognizes either unbilled revenue (its performance precedes billing date) or deferred revenue (customer payment is received in advance of performance).

Deferred Revenue (Contract Liabilities)

The Company records deferred revenue within accrued and other current liabilities in the consolidated balance sheets. The Company's deferred revenue balance primarily consists of cash payments due in advance of satisfying its performance obligations relating to data licensing contracts and performance obligations given to customers based on their spend relating to advertising contracts, for which the Company defers, as they represent material rights. The Company recognizes deferred revenue relating to its data licensing contracts on a straight-line basis over the period in which the Company provides data access. The Company recognizes deferred revenue relating to its advertising contracts based on the amount of customer spend and the relative standalone selling price of the material rights.

Unbilled Revenue (Contract Assets)

The Company records unbilled revenue within prepaid expenses and other current assets and other assets in the consolidated balance sheets. The Company's unbilled revenue primarily consists of amounts that have yet to be billed under contracts with escalating fee structures. Specifically, because the Company generally recognizes revenue on a straight-line basis for data licensing arrangements with escalating fee structures, revenue recognized exceeds amounts the Company has a right to bill during early portions of such contracts, resulting in unbilled revenue.

The following table presents contract balances (in thousands):

	January 1, 2018	September 30, 2018
Unbilled Revenue	$7,980	$ 19,138
Deferred Revenue	$25,869	$ 50,739

The amount of revenue recognized in the three and nine months ended September 30, 2018 that was included in the opening deferred revenue balance was $22.3 million and $25.9 million, respectively. This revenue consists primarily of revenue recognized as a result of the utilization of bonus media inventory earned by and material rights provided to customers in prior periods.

The amount of revenue recognized from obligations satisfied (or partially satisfied) in prior periods was not material.

The increase in unbilled revenue balance from January 1, 2018 to September 30, 2018 was primarily attributable to differences between revenue recognized and amounts billed in the Company's data licensing arrangements with escalating fee structures due to recognizing such fees as revenue on a straight-line basis.

The increase in deferred revenue balance from January 1, 2018 to September 30, 2018 was primarily due to cash payments due in advance of satisfying the Company’s performance obligations relating to data licensing contracts and bonus and make good media inventory offered to customers during the period, offset by the utilization of such media inventory issued in prior periods.

Remaining Performance Obligations

As of September 30, 2018, the aggregate amount of the transaction price allocated to remaining performance obligations in contracts with an original expected duration exceeding one year is $522.8 million. This total amount primarily consists of long-term data licensing contracts and excludes deferred revenue related to the Company's short-term Promoted Products arrangements. The Company expects to recognize this amount as revenue over the following time periods (in thousands):

	Remaining Performance Obligations			
	Total	Remainder of 2018	2019	2020 and Thereafter
Revenue expected to be recognized on remaining performance obligations	$522,765	$ 52,280	$188,569	$281,916

Note 3. Cash, Cash Equivalents and Short-term Investments

Cash, cash equivalents and short-term investments consist of the following (in thousands):

	September 30, 2018	December 31, 2017
Cash and cash equivalents:		
Cash	$ 227,693	$ 301,684
Money market funds	1,154,954	981,681
Corporate notes, commercial paper and certificates of deposit	546,282	355,048
Total cash and cash equivalents	$ 1,928,929	$ 1,638,413
Short-term investments:		
U.S. government and agency securities including treasury bills	$ 1,172,126	$ 1,064,957
Corporate notes, commercial paper and certificates of deposit	2,855,488	1,699,732
Total short-term investments	$ 4,027,614	$ 2,764,689

The contractual maturities of securities classified as available-for-sale as of September 30, 2018 were as follows (in thousands):

	September 30, 2018
Due within one year	$ 3,122,955
Due after one year through five years	904,659
Total	$ 4,027,614

The following tables summarize unrealized gains and losses related to available-for-sale securities classified as short-term investments on the Company's consolidated balance sheets (in thousands):

	September 30, 2018			
	Gross Amortized Costs	Gross Unrealized Gains	Gross Unrealized Losses	Aggregated Estimated Fair Value
U.S. government and agency securities including treasury bills	$1,173,045	$ 85	$ (1,004)	$1,172,126
Corporate notes, commercial paper and certificates of deposit	2,857,947	424	(2,883)	2,855,488
Total available-for-sale securities classified as short-term investments	$4,030,992	$ 509	$ (3,887)	$4,027,614

	December 31, 2017			
	Gross Amortized Costs	Gross Unrealized Gains	Gross Unrealized Losses	Aggregated Estimated Fair Value
U.S. government and agency securities including treasury bills	$1,067,047	$ 133	$ (2,223)	$1,064,957
Corporate notes, commercial paper and certificates of deposit	1,701,168	72	(1,508)	1,699,732
Total available-for-sale securities classified as short-term investments	$2,768,215	$ 205	$ (3,731)	$2,764,689

The gross unrealized loss on securities in a continuous loss position for 12 months or longer was not material as of September 30, 2018 and December 31, 2017.

Investments are reviewed periodically to identify possible other-than-temporary impairments. No impairment loss has been recorded on the securities included in the tables above as the Company believes that the decrease in fair value of these securities is temporary and expects to recover the initial cost of investment for these securities.

Note 4. Fair Value Measurements

The Company measures its cash equivalents, short-term investments and derivative financial instruments at fair value. The Company classifies its cash equivalents, short-term investments and derivative financial instruments within Level 1 or Level 2 because the Company values these investments using quoted market prices or alternative pricing sources and models utilizing market observable inputs. The fair value of the Company's Level 1 financial assets is based on quoted market prices of the identical underlying security. The fair value of the Company's Level 2 financial assets is based on inputs that are directly or indirectly observable in the market, including the readily-available pricing sources for the identical underlying security that may not be actively traded.

The following tables set forth the fair value of the Company's financial assets and liabilities measured at fair value on a recurring basis as of September 30, 2018 and December 31, 2017 based on the three-tier fair value hierarchy (in thousands):

	September 30, 2018			
	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents:				
Money market funds	$1,154,954	$—	$ —	$1,154,954
Commercial paper	—	527,187	—	527,187
Certificates of deposit	—	19,095	—	19,095
Short-term investments:				
Treasury bills	—	288,398	—	288,398
U.S. government securities	—	603,847	—	603,847
Agency securities	—	279,881	—	279,881
Corporate notes	—	1,359,553	—	1,359,553
Commercial paper	—	729,248	—	729,248
Certificates of deposit	—	766,687	—	766,687
Other current assets:				
Foreign currency contracts	—	3,460	—	3,460
Total	$1,154,954	$4,577,356	$ —	$5,732,310
Liabilities				
Other current liabilities:				
Foreign currency contracts	—	1,379	—	1,379
Total	$—	$1,379	$ —	$1,379

	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Assets				
Cash equivalents:				
Money market funds	$981,681	$—	$ —	$981,681
Commercial paper	—	346,968	—	346,968
Certificates of deposit	—	8,080	—	8,080
Short-term investments:				
U.S. government securities	—	669,552	—	669,552
Agency securities	—	395,405	—	395,405
Corporate notes	—	745,915	—	745,915
Commercial paper	—	299,675	—	299,675
Certificates of deposit	—	654,142	—	654,142
Other current assets:				
Foreign currency contracts	—	2,237	—	2,237
Total	$981,681	$3,121,974	$ —	$4,103,655
Liabilities				
Other current liabilities:				
Foreign currency contracts	—	601	—	601
Total	$—	$601	$ —	$601

In June 2018, the Company issued $1.15 billion principal amount of 0.25% convertible senior notes due in 2024 in a private placement to qualified institutional buyers pursuant to Rule144A under the Securities Act of 1933, as amended. In 2014, the Company issued $935.0 million principal amount of 0.25% convertible senior notes due in 2019 (the “2019 Notes”) and $954.0 million principal amount of 1.00% convertible senior notes due in 2021 (the “2021 Notes” and together with the 2019 Notes and the 2024 Notes, the “Notes”) in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended. Refer to Note 9 – Convertible Notes for further details on the Notes.

The estimated fair value of the 2019 Notes, 2021 Notes, and 2024 Notes, based on a market approach as of September 30, 2018 was approximately $905.7 million, $879.1 million, and $1.01 billion, respectively, which represents a Level 2 valuation. The estimated fair value was determined based on the estimated or actual bids and offers of the Notes in an over-the-counter market on the last business day of the period.

Derivative Financial Instruments

The Company enters into foreign currency forward contracts with financial institutions to reduce the risk that its earnings may be adversely affected by the impact of exchange rate fluctuations on monetary assets or liabilities denominated in currencies other than the functional currency of a subsidiary. These contracts do not subject the Company to material balance sheet risk due to exchange rate movements because gains and losses on these derivatives are intended to offset gains and losses on the hedged foreign currency denominated assets and liabilities. These foreign currency forward contracts are not designated as hedging instruments.

The Company recognizes these derivative instruments as either assets or liabilities in the consolidated balance sheets at fair value based on a Level 2 valuation. The Company records changes in the fair value (i.e., gains or losses) of the derivatives as other expense, net in the consolidated statements of operations. The notional principal of foreign currency contracts outstanding was equivalent to $460.2 million and $326.1 million at September 30, 2018 and December 31, 2017, respectively.

The fair values of outstanding derivative instruments for the periods presented on a gross basis are as follows (in thousands):

	Balance Sheet Location	September 30, 2018	December 31, 2017
Assets			
Foreign currency contracts not designated as hedging instruments	Other current assets	$ 3,460	$ 2,237
Liabilities			
Foreign currency contracts not designated as hedging instruments	Other current liabilities	$ 1,379	$ 601

The Company recognized $1.2 million of net gains and $5.4 million of net losses on its foreign currency contracts in the three and nine months ended September 30, 2018, respectively. The Company recognized $2.7 million and $5.1 million of net gains on its foreign currency contracts in the three and nine months ended September 30, 2017, respectively.

Note 5. Property and Equipment, Net

The following table presents the detail of property and equipment, net for the periods presented (in thousands):

	September 30, 2018	December 31, 2017
Property and equipment, net		
Equipment	$ 1,284,545	$ 1,091,672
Furniture and leasehold improvements	319,113	314,852
Capitalized software	523,811	472,147
Construction in progress	105,045	49,417
Total	2,232,514	1,928,088
Less: Accumulated depreciation and amortization	(1,328,487)	(1,154,373)
Property and equipment, net	$ 904,027	$ 773,715

The Company reviews the remaining estimated useful lives of its property and equipment on an ongoing basis. Management is required to use judgment in determining the estimated useful lives of such assets. Changes in circumstances such as technological advances, changes to the Company’s business model, changes in the Company’s business strategy, or changes in the planned use of property and equipment could result in the actual useful lives differing from the Company’s current estimates. In cases where the Company determines that the estimated useful life of property and equipment should be shortened or extended, the Company would depreciate the remaining net book value at the time of the change in excess of the estimated salvage value over its revised remaining useful life.

Note 6. Goodwill and Intangible Assets

The following table presents the goodwill activities for the periods presented (in thousands):

Goodwill	
Balance as of December 31, 2017	$1,188,935
Acquisition	44,014
Foreign currency translation adjustment and other	(5,010)
Balance as of September 30, 2018	$1,227,939

For each of the periods presented, gross goodwill balance equaled the net balance since no impairment charges have been recorded.

The following table presents the detail of intangible assets for the periods presented (in thousands):

	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
September 30, 2018:			
Patents and developed technologies	$102,378	$ (58,653)	$43,725
Publisher and advertiser relationships	9,300	(8,215)	1,085
Total	$111,678	$ (66,868)	$44,810
December 31, 2017:			
Patents and developed technologies	$93,511	$ (46,337)	$47,174
Publisher and advertiser relationships	9,300	(6,820)	2,480
Total	$102,811	$ (53,157)	$49,654

Amortization expense associated with intangible assets for the three months ended September 30, 2018 and 2017 was $4.4 million and $11.1 million, respectively, and for the nine months ended September 30, 2018 and 2017 was $14.2 million and $41.6 million, respectively.

Estimated future amortization expense as of September 30, 2018 is as follows (in thousands):

Remainder of 2018	$4,380
2019	13,187
2020	8,459
2021	5,867
2022	4,290
Thereafter	8,627
Total	$44,810

Note 7. Accrued and Other Current Liabilities

The following table presents the detail of accrued and other current liabilities for the periods presented (in thousands):

	September 30, 2018	December 31, 2017
Accrued compensation	$ 134,876	$ 98,553
Accrued tax liabilities	36,486	36,097
Accrued publisher, content and ad network costs	30,346	32,462
Deferred revenue	50,739	27,824
Accrued other	128,120	132,397
Total	$ 380,567	$ 327,333

Note 8. Acquisitions and Other Investments

2018 Acquisition

During the nine months ended September 30, 2018, the Company acquired a company, which was accounted for as a business combination. The purchase price of $53.7 million (paid in shares of the Company's common stock having a total fair value of $19.1 million and cash of $34.6 million) for this acquisition was allocated as follows: $9.3 million to developed technology, $0.4 million to net tangible assets acquired based on their estimated fair value on the acquisition date, and the excess $44.0 million of the purchase price over the fair value of net assets acquired to goodwill. The goodwill from the acquisition is mainly attributable to assembled workforce, expected synergies and other benefits. The goodwill is not tax deductible for U.S. income tax purposes. The developed technology is amortized on a straight-line basis over its estimated useful life of 24 months.

The results of operations for this acquisition have been included in the Company’s consolidated statements of operations since the date of acquisition. Actual and pro forma revenue and results of operations for this acquisition have not been presented because they do not have a material impact on the consolidated revenue and results of operations.

Investments in Privately-Held Companies

The Company makes strategic investments in privately-held companies. The Company also evaluates each investee to determine if the investee is a variable interest entity and, if so, whether the Company is the primary beneficiary of the variable interest entity. The Company has determined, as of September 30, 2018, there were no variable interest entities required to be consolidated in the Company’s consolidated financial statements. The Company’s investments in privately-held companies are primarily non-marketable equity securities without readily determinable fair values. Prior to January 1, 2018, the Company accounted for its non-marketable equity securities at cost less impairment. Realized gains and losses on non-marketable securities sold or impaired were recognized in other income (expense), net. On January 1, 2018, the Company adopted the new standard which changed the way it accounts for non-marketable securities. The Company now adjusts the carrying value of its non-marketable equity securities to fair value upon observable transactions for identical or similar investments of the same issuer or upon impairment (referred to as the measurement alternative). All gains and losses on non-marketable equity securities, realized and unrealized, are recognized in other income (expense), net. The Company’s non-marketable equity securities had a carrying value of $24.6 million as of September 30, 2018 and $27.6 million as of December 31, 2017. The maximum loss the Company can incur for its investments is their carrying value. These investments in privately-held companies are included within Other Assets on the consolidated balance sheets.

The Company periodically evaluates the carrying value of the investments in privately-held companies when events and circumstances indicate that the carrying amount of the investment may not be recovered. The Company estimates the fair value of the investments to assess whether impairment losses shall be recorded using Level 3 inputs. These investments include the Company’s holdings in privately-held companies that are not exchange traded and therefore not supported with observable market prices; hence, the Company may determine the fair value by reviewing equity valuation reports, current financial results, long-term plans of the privately-held companies, the amount of cash that the privately-held companies have on-hand, the ability to obtain additional financing and overall market conditions in which the privately-held companies operate or based on the price observed from the most recent completed financing. No impairment charge was recorded in the three months ended September 30, 2018. In the nine months ended September 30, 2018, the Company recorded a $3.0 million impairment charge within other expense, net in the consolidated statements of operations. In the three and nine months ended September 30, 2017, the Company recorded a $7.4 million and $62.4 million impairment charge, respectively, within other expense, net in the consolidated statements of operations.

Note 9. Convertible Notes

2024 Notes

In June 2018, the Company issued $1.15 billion in principal amount of the 2024 Notes in a private placement to qualified institutional buyers pursuant to Rule144A under the Securities Act of 1933, as amended. The total net proceeds from this offering were approximately $1.14 billion, after deducting $12.3 million of debt issuance costs in connection with the 2024 Notes.

The 2024 Notes represent senior unsecured obligations of the Company. The interest rate is fixed at 0.25% per annum and are payable semi-annually in arrears on June 15 and December 15 of each year, commencing on December 15, 2018.

Each $1,000 of principal of these notes will initially be convertible into 17.5001 shares of the Company's common stock, which is equivalent to an initial conversion price of approximately $57.14 per share, subject to adjustment upon the occurrence of specified events. Holders of these notes may convert their notes at their option at any time on or after March 15, 2024 until close of business on the second scheduled trading day immediately preceding the maturity date of June 15, 2024. Further, holders of these notes may convert all or any portion of their notes at their option prior to the close of business on the business day immediately preceding March 15, 2024, only under the following circumstances:

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

2) during the five business day period after any five consecutive trading day period (the "measurement period") in which the trading price (as defined in the Indenture governing the 2024 Notes) per $1,000 principal amount of notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of Twitter's common stock and the conversion rate for the notes on each such trading day; or
3) upon the occurrence of certain specified corporate events.

Upon conversion of the 2024 Notes, the Company will pay or deliver, as the case may be, cash, shares of its common stock or a combination of cash and shares of its common stock, at the Company's election. If the Company satisfies its conversion obligation solely in cash or through payment and delivery, as the case may be, of a combination of cash and shares of its common stock, the amount of cash and shares of common stock, if any, due upon conversion will be based on a daily conversion value (as set forth in the indenture governing the 2024 Notes) calculated on a proportionate basis for each trading day in a 30 trading day observation period.

If a fundamental change (as defined in the indenture governing the 2024 Notes) occurs prior to the maturity date, holders of the 2024 Notes may require the Company to repurchase all or a portion of their notes for cash at a repurchase price equal to 100% of the principal amount of the notes, plus any accrued and unpaid interest to, but excluding, the repurchase date. In addition, if specific corporate events occur prior to the maturity date of the 2024 Notes, the Company will be required to increase the conversion rate for holders who elect to convert their notes in certain circumstances.

In accordance with accounting guidance on embedded conversion features, the Company valued and bifurcated the conversion option associated with the 2024 Notes from the respective host debt instrument, which is referred to as debt discount, and initially recorded the conversion option of $255.0 million for the 2024 Note in stockholders' equity. The resulting debt discount on the 2024 Notes is amortized to interest expense at an effective interest rate of 4.46% over the contractual terms of the Notes. The Company allocated $2.7 million of debt issuance costs to the equity component and the remaining debt issuance costs of $9.6 million are amortized to interest expense under the effective interest rate method over the contractual terms of the notes.

Concurrently with the offering of the 2024 Notes in June 2018, the Company entered into convertible note hedge transactions with certain bank counterparties whereby the Company has the option to purchase initially (subject to adjustment for certain specified events) a total of approximately 20.1 million shares of its common stock at a price of approximately $57.14 per share. The total cost of the convertible note hedge transactions was $268.0 million. In addition, the Company sold warrants to certain bank counterparties whereby the holders of the warrants have the option to purchase initially (subject to adjustment for certain specified events) a total of approximately 20.1 million shares of the Company's common stock at a price of $80.20. The Company received $186.8 million in cash proceeds from the sale of these warrants.

Taken together, the purchase of the convertible note hedges and the sale of warrants are intended to offset any actual dilution from the conversion of these notes and to effectively increase the overall conversion price from approximately $57.14 to $80.20 per share. As these transactions meet certain accounting criteria, the convertible note hedges and warrants are recorded in stockholders' equity and are not accounted for as derivatives. The net cost incurred in connection with the convertible note hedge and warrant transactions was recorded as a reduction to additional paid-in capital in the consolidated balance sheet as of September 30, 2018.

2019 Notes and 2021 Notes

In 2014, the Company issued $935.0 million principal amount of 2019 Notes and $954.0 million principal amount of 2021 Notes. The total net proceeds from this offering were approximately $1.86 billion, after deducting $28.3 million of debt discount and $0.5 million debt issuance costs in connection with the 2019 Notes and the 2021 Notes.

The interest rates are fixed at 0.25% and 1.00% per annum for the 2019 Notes and the 2021 Notes, respectively, and are payable semi-annually in arrears on March 15 and September 15 of each year, commencing on March 15, 2015.

The Notes consisted of the following (in thousands):

	September 30, 2018			December 31, 2017	
	2019 Notes	2021 Notes	2024 Notes	2019 Notes	2021 Notes
Principal amounts:					
Principal	$935,000	$954,000	$1,150,000	$935,000	$954,000
Unamortized debt discount and issuance costs [1]	(50,565)	(141,177)	(252,758)	(88,359)	(173,181)
Net carrying amount	$884,435	$812,823	$897,242	$846,641	$780,819
Carrying amount of the equity component [2]	$222,826	$283,283	$254,981	$222,826	$283,283

[1] Included in the consolidated balance sheets within convertible notes and amortized over the remaining lives of the Notes.

[2] Included in the consolidated balance sheets within additional paid-in capital.

During the three months ended September 30, 2018 and 2017, the Company recognized $33.6 million and $22.5 million, respectively, of interest expense related to the amortization of debt discount and issuance costs prior to capitalization of interest, and $3.8 million and $3.0 million, respectively, of coupon interest expense. During the nine months ended September 30, 2018 and 2017, the Company recognized $81.6 million and $66.0 million, respectively, of interest expense related to the amortization of debt discount and issuance costs prior to capitalization of interest, and $9.8 million and $8.9 million, respectively, of coupon interest expense.

As of September 30, 2018, the remaining life of the 2019 Notes, 2021 Notes, and 2024 Notes is approximately 11 months, 35 months, and 68 months, respectively.

Note 10. Net Income (Loss) per Share

Basic net income (loss) per share is computed by dividing total net income (loss) attributable to common stockholders by the weighted-average common shares outstanding during the period. The weighted-average common shares outstanding is adjusted for shares subject to repurchase such as unvested restricted stock granted to employees in connection with acquisitions, contingently returnable shares and escrowed shares supporting indemnification obligations that are issued in connection with acquisitions and unvested stock options exercised.

Diluted net income (loss) per share is computed by dividing the net income (loss) attributable to common stockholders by the weighted-average number of common shares outstanding, during the period, including potential dilutive common stock instruments. In the three and nine months ended September 30, 2017, the Company's potential common stock instruments such as stock options, restricted stock units (RSUs), shares to be purchased under the 2013 Employee Stock Purchase Plan (ESPP), shares subject to repurchases, conversion feature of the Notes and the warrants were not included in the computation of diluted net income (loss) per share as the effect of including these shares in the calculation would have been anti-dilutive.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Basic net income (loss) per share:				
Numerator				
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)
Denominator				
Weighted-average common shares outstanding	759,322	740,290	754,866	733,698
Weighted-average restricted stock subject to repurchase	(2,785)	(3,775)	(2,633)	(4,072)
Weighted-average shares used to compute basic net income (loss) per share	756,537	736,515	752,233	729,626
Basic net income (loss) per share attributable to common stockholders	$1.04	$(0.03)	$1.26	$(0.27)
Dilutive net income (loss) per share:				
Numerator				
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)
Denominator				
Number of shares used in basic computation	756,537	736,515	752,233	729,626
Weighted-average effect of dilutive securities:				
RSUs	14,301	—	14,289	—
Stock options	2,709	—	2,727	—
Other	2,455	—	2,262	—
Weighted-average shares used to compute diluted net income (loss) per share	776,002	736,515	771,511	729,626
Dilutive net income (loss) per share attributable to common stockholders	$1.02	$(0.03)	$1.23	$(0.27)

The following number of potential common shares at the end of each period were excluded from the calculation of diluted net income (loss) per share attributable to common stockholders because their effect would have been anti-dilutive for the periods presented (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
RSUs	3,928	32,153	15,534	32,153
Warrants	44,454	24,329	44,454	24,329
Stock options	21	5,002	844	5,002
Shares subject to repurchase and others	1,790	6,133	2,436	6,133

Since the Company expects to settle the principal amount of the outstanding Notes in cash, 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. For the 2019 Notes and 2021 Notes, the conversion spread of 24.3 million shares will have a dilutive impact on diluted net income per share of common stock when the average market price of the Company's common stock for a given period exceeds the conversion price of $77.64 per share. For the 2024 Notes, the conversion spread of 20.1 million shares will have a dilutive impact on diluted net income per share of common stock when the average market price of the Company's common stock for a given period exceeds the conversion price of $57.14 per share.

If the average market price of the common stock exceeds the exercise price of the warrants, $105.28 for the 2019 Notes and 2021 Notes, and $80.20 for the 2024 Notes, the warrants will have a dilutive effect on the earnings per share assuming that the Company is profitable. Since the average market price of the common stock is below $80.20 for all periods presented, all of the warrants are anti-dilutive.

Note 11. Stockholders' Equity

Equity Incentive Plans

The Company's 2013 Equity Incentive Plan became effective upon the completion of the Company's initial public offering and serves as the successor to the 2007 Equity Incentive Plan. Initially, 68.3 million shares were reserved under the 2013 Equity Incentive Plan and any shares subject to options or other similar awards granted under the 2007 Equity Incentive Plan that expire, are forfeited, are repurchased by the Company or otherwise terminate unexercised will become available under the 2013 Equity Incentive Plan. The number of shares of the Company's common stock available for issuance under the 2013 Equity Incentive Plan were and will be increased on the first day of each fiscal year beginning with the 2014 fiscal year, in an amount equal to the least of (i) 60,000,000 shares, (ii) 5% of the outstanding shares on the last day of the immediately preceding fiscal year or (iii) such number of shares determined by the Company's Board of Directors. No additional awards were issued under the 2007 Equity Incentive Plan or the 2016 Equity Incentive Plan during the three and nine months ended September 30, 2018.

Employee Stock Purchase Plan

The number of shares available for sale under the ESPP were and will be increased on the first day of each fiscal year beginning with the 2014 fiscal year, in an amount equal to the least of (i) 11.3 million shares, (ii) 1% of the outstanding shares of the Company's common stock as of the last day of the immediately preceding fiscal year or (iii) such other amount as determined by the Company's Board of Directors.

During the nine months ended September 30, 2018, employees purchased an aggregate of 1.0 million shares under the ESPP at a weighted-average price of $16.51 per share. During the nine months ended September 30, 2017, employees purchased an aggregate of 1.1 million shares under the ESPP at a weighted-average price of $12.43 per share.

Restricted Common Stock

The Company has granted restricted common stock to certain continuing employees in connection with certain of its acquisitions. Vesting of this stock is dependent on the respective employee's continued employment at the Company during the requisite service period, which is generally up to four years from the issuance date, and the Company has the right to repurchase the unvested shares upon termination of employment. The fair value of the restricted common stock issued to employees is recorded as compensation expense on a straight-line basis over the requisite service period.

During the nine months ended September 30, 2018, the Company granted 0.7 million shares of restricted common stock with a weighted-average grant date fair value of $25.62 per share in connection with an acquisition. The Company had 2.5 million and 2.8 million shares of unvested restricted common stock as of September 30, 2018 and December 31, 2017, respectively. The Company's restricted common stock activity was not material during the nine months ended September 30, 2018.

Stock Option Activity

The Company had 3.8 million and 4.8 million shares of stock options outstanding as of September 30, 2018 and December 31, 2017, respectively. The Company's stock option activity was not material during the nine months ended September 30, 2018.

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Performance Restricted Stock Units Activity

The Company grants restricted stock units to certain of its executive officers periodically that vest based on the Company's attainment of the annual financial performance goals and the executives' continued employment through the vesting date, approximately one year (PRSUs). These PRSUs are granted when the annual performance targets are set and the awards are approved by the Compensation Committee of the Board of Directors, generally in the first quarter of each financial year.

The following table summarizes the activity related to the Company's PRSUs for the nine months ended September 30, 2018 (in thousands, except per share data):

	PRSUs Outstanding	
	Shares	Weighted-Average Grant-Date Fair Value Per Share
Unvested and outstanding at December 31, 2017	346	$ 15.39
Granted (100% target level)	519	$ 35.25
Additional earned performance shares related to 2017 grants	300	$ 15.39
Vested (187% target level)	(646)	$ 15.39
Unvested and outstanding at September 30, 2018	519	$ 35.25

The total fair value of PRSUs vested during the nine months ended September 30, 2018 was $20.4 million.

The Company also grants restricted stock units to certain of its executive officers that vest based on Twitter stock price performance relative to a broad-market index over a performance period of two calendar years and the executives' continued employment through the vesting date (TSR RSUs).

The following table summarizes the activity related to the Company's TSR RSUs for the nine months ended September 30, 2018 (in thousands, except per share data):

	TSR RSUs Outstanding	
	Shares	Weighted-Average Grant-Date Fair Value Per Share
Unvested and outstanding at December 31, 2017	146	$ 13.02
Granted (100% target level)	414	$ 53.71
Canceled	(14)	$ 13.02
Unvested and outstanding at September 30, 2018	546	$ 43.87

In addition, there are 1,608,311 additional PRSUs and TSR RSUs at the 100% target level that will vest based on performance goals and Total Shareholder Return (TSR) targets to be granted in 2019 and 2020 at target levels from 0% to 200%.

RSU Activity

The following table summarizes the activity related to the Company's RSUs, excluding PRSUs and TSR RSUs, for the nine months ended September 30, 2018. For purposes of this table, vested RSUs represent the shares for which the service condition had been fulfilled as of each respective date (in thousands, except per share data):

	RSUs Outstanding	
	Shares	Weighted-Average Grant-Date Fair Value Per Share
Unvested and outstanding at December 31, 2017	33,123	$ 19.80
Granted	18,035	$ 30.45
Vested	(11,097)	$ 21.69
Canceled	(5,330)	$ 22.53
Unvested and outstanding at September 30, 2018	34,731	$ 24.31

The total fair value of RSUs vested during the three months ended September 30, 2018 and 2017 was $126.3 million and $88.3 million, respectively, and $338.4 million and $275.3 million during the nine months ended September 30, 2018 and 2017, respectively.

Stock-Based Compensation Expense

Stock-based compensation expense is allocated based on the cost center to which the award holder belongs. Total stock-based compensation expense by function is as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Cost of revenue	$4,247	$5,625	$12,384	$17,830
Research and development	53,195	57,174	140,210	185,185
Sales and marketing	19,634	22,433	52,681	68,216
General and administrative	14,530	15,727	39,066	60,121
Total stock-based compensation expense	$91,606	$100,959	$244,341	$331,352

The Company capitalized $10.7 million and $12.0 million of stock-based compensation expense associated with the cost for developing software for internal use in the three months ended September 30, 2018 and 2017, respectively, and $33.5 million and $42.3 million in the nine months ended September 30, 2018 and 2017, respectively.

As of September 30, 2018, there was $822.4 million of gross unamortized stock-based compensation expense related to unvested awards which is expected to be recognized over a weighted-average period of 3.2 years. The Company accounts for forfeitures as they occur.

Note 12. Income Taxes

The Company’s tax provision or benefit from income taxes for interim periods is determined using an estimate of its annual effective tax rate, adjusted for discrete items, if any. Each quarter the Company updates its estimate of the annual effective tax rate and makes a year-to-date adjustment to the provision.

The Company recorded an income tax benefit of $701.9 million and $733.3 million for the three and nine months ended September 30, 2018, respectively, and an income tax provision of $3.6 million and $10.2 million for the three and nine months ended September 30, 2017, respectively. The primary difference between the effective tax rate and the federal statutory tax rate relates to the release of the valuation allowance related to most of the United States federal and all states deferred tax assets with the exception of California and Massachusetts during the three months ended September 30, 2018, the release of the Brazilian valuation allowance during the three months ended June 30, 2018, excess share-based compensation tax deductions, and foreign tax rate differences.

During the three months ended September 30, 2018, the Company released $797.4 million of the valuation allowance related to most of the United States federal and all states deferred tax assets with the exception of California and Massachusetts. The valuation allowance release resulted in a net benefit to tax expense of $681.5 million during the three months ended September 30, 2018 due to income tax accounting treatment in interim periods. The Company continues to maintain a valuation allowance related to specific net deferred tax assets where it is not more likely than not that the deferred tax assets will be realized, which include all capital losses, California, and Massachusetts net deferred tax assets. The Company concluded, based upon the preponderance of positive evidence (i.e. cumulative profit before tax adjusted for permanent items over the previous twelve quarters, a history of taxable income in recent periods, and the current forecast of income before taxes for the United States going forward) over negative evidence and the anticipated ability to use the deferred tax assets, that it was more likely than not that the deferred tax assets could be realized. If there are unfavorable changes to actual operating results or to projections of future income, the Company may determine that it is more likely than not such deferred tax assets may not be realizable.

During the nine months ended September 30, 2018, the Company released the valuation allowance related to deferred tax assets of its Brazilian operations that resulted in a net benefit to tax expense of $43.4 million. The Company reported cumulative profit before tax (adjusted for permanent items) over the previous twelve quarters in its Brazilian operations based on U.S. GAAP and expects that net operating loss carryovers and other deductible amounts in Brazil will ultimately be realizable against future profits. The Company concluded, based upon the preponderance of positive evidence over negative evidence and the anticipated ability to use the deferred tax assets, that it was more likely than not that the deferred tax assets in Brazil would be realizable due to U.S. GAAP forecasted profits for Twitter Brazil. If there are unfavorable changes to actual operating results or to projections of future income, the Company may determine that it is more likely than not such deferred tax assets may not be realizable.

During the three and nine months ended September 30, 2018, the amount of gross unrecognized tax benefits increased by $24.3 million and $52.5 million, respectively. As of September 30, 2018, the Company has $312.9 million of unrecognized tax benefits, of which $258.4 million will affect its effective tax rate, if recognized.

The Company is subject to taxation in the United States and various state and foreign jurisdictions. The material jurisdictions in which the Company is subject to potential examination by taxing authorities include the United States, California and Ireland. The Company is currently under examination in California for tax years 2013 through 2015. The Company believes that adequate amounts have been reserved in this jurisdiction.

In December 2017, the Tax Cuts and Jobs Act (the “Tax Act”) was enacted into law and the new legislation contains several key tax provisions that impact the Company, including a reduction of the federal corporate income tax rate to 21% effective January 1, 2018, among others. The Company is required to recognize the effect of the tax law changes in the period of enactment, such as re-measuring its United States deferred tax assets and liabilities. In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the 2017 Tax Cuts and Jobs Act (SAB 118), which allows the Company to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. The Company will complete its analysis in the fourth quarter of 2018 within the measurement period provided by SAB 118.

As of September 30, 2018, the Company is still determining its policy with respect to whether to record the taxes for Global Intangible Low-Taxed Income, or GILTI, as deferred taxes or period costs and will make a determination in the fourth quarter of 2018 within the measurement period provided by SAB 118. The Company has concluded on the policy of tax law ordering for reflecting the realization of the net operating losses related to GILTI as a permanent adjustment as reflected in the United States valuation allowance release in the third quarter of 2018.

Note 13. Commitments and Contingencies

Credit Facility

In August 2018, the Company entered into a revolving credit agreement with certain lenders, which provides for a $500.0 million unsecured revolving credit facility maturing on August 7, 2023. The Company is obligated to pay interest on loans under the credit facility and other customary fees for a credit facility of this size and type, including an upfront fee and an unused commitment fee. The interest rate for the credit facility is determined based on calculations using certain market rates as set forth in the credit agreement. As of September 30, 2018, no amounts had been drawn under the credit facility. In connection with entering into the $500.0 million credit facility, the Company also terminated its $1.0 billion unsecured revolving credit facility that was scheduled to mature on October 22, 2018. No amounts had been drawn on the $1.0 billion credit facility at the time of its termination.

Operating and Capital Leases

The Company has entered into various non-cancelable operating lease agreements for certain offices and data center facilities with contractual lease periods expiring through 2028. Under the terms of certain leases, the Company is committed to pay for certain taxes, insurance, maintenance and management expenses. Certain of these arrangements have free rent periods or escalating rent payment provisions, and the Company recognizes rent expense under such arrangements on a straight-line basis. The Company also entered into several sublease agreements for office space that the Company is not fully utilizing. The Company also has lease arrangements for certain server and networking equipment that are accounted for as capital leases and included in property and equipment on the consolidated balance sheets.

A summary of gross lease commitments and sublease income as of September 30, 2018 is as follows (in thousands):

	Operating Leases	Sublease Income	Capital Leases
Years Ending December 31,			
Remainder of 2018	$38,643	$(6,568)	$22,179
2019	160,107	(21,524)	70,133
2020	149,511	(12,537)	23,845
2021	108,277	(11,781)	569
2022	83,532	(1,329)	—
Thereafter	212,321	—	—
	$752,391	$(53,739)	116,726
Less: Amounts representing interest			3,396
Total capital lease obligation			113,330
Less: Short-term portion			75,959
Long-term portion			$37,371

Rent expense, net of sublease income, under the Company’s operating leases, including co-location arrangements for the Company’s data centers, was $35.5 million and $29.5 million for the three months ended September 30, 2018 and 2017, respectively, and $102.9 million and $88.8 million for the nine months ended September 30, 2018 and 2017, respectively.

Contractual Obligations

Our principal commitments consist of obligations under the Notes (including principal and coupon interest), capital and operating leases for equipment, office space and co-located data center facilities, as well as non-cancellable contractual commitments. The following table summarizes our commitments to settle contractual obligations in cash as of September 30, 2018:

	Payments Due by Fiscal Year				
	Total	Remainder of 2018	2019-2020	2021-2022	Thereafter
	(In thousands)				
2019 Notes	$937,338	$ —	$937,338	$—	$—
2021 Notes	982,646	—	19,106	963,540	—
2024 Notes	1,167,250	1,469	5,742	5,734	1,154,305
Operating lease obligations [1]	752,391	38,643	309,618	191,809	212,321
Capital lease obligations	116,726	22,179	93,978	569	—
Other contractual commitments [2]	336,715	37,536	84,797	135,594	78,788
Total contractual obligations	$4,293,066	$ 99,827	$1,450,579	$1,297,246	$1,445,414

(1) The Company entered into several sublease agreements for office space that it is not fully utilizing. Under the sublease agreements, the Company will receive approximately $53.7 million in sublease income over the next five years.

(2) Other contractual commitments are non-cancelable contractual commitments primarily related to the Company's infrastructure services, bandwidth and other services arrangements.

Legal Proceedings

Beginning in September 2016, multiple putative class actions and derivative actions were filed in state and federal courts in the United States against Twitter, Twitter's directors, and/or certain officers alleging false and misleading statements in violation of securities laws and breach of fiduciary duty. The Company disputes the claims and intends to continue to defend the lawsuits vigorously. The putative class actions were consolidated in the U.S. District Court for the Northern District of California. On October 16, 2017, the court granted in part and denied in part the Company's motion to dismiss. On July 17, 2018, the court granted plaintiffs' motion for class certification in the consolidated securities action.

The Company is also currently involved in, and may in the future be involved in, legal proceedings, claims, investigations, and government inquiries arising in the ordinary course of business. These proceedings, which include both individual and class action litigation and administrative proceedings, have included, but are not limited to matters involving content on the platform, intellectual property, privacy, securities, employment and contractual rights. Legal fees and other costs associated with such actions are expensed as incurred. The Company assesses, in conjunction with its legal counsel, the need to record a liability for litigation and contingencies. Litigation accruals are recorded when and if it is determined that a loss related matter is both probable and reasonably estimable. Material loss contingencies that are reasonably possible of occurrence, if any, are subject to disclosure. As of September 30, 2018 and December 31, 2017, there was no litigation or contingency with at least a reasonable possibility of a material loss. No material losses have been recorded during the three and nine months ended September 30, 2018 and 2017 with respect to litigation or loss contingencies.

Non-Income Taxes

The Company is under audit by various domestic and foreign tax authorities and currently involved in a number of tax disputes related to non-income tax matters. The subject matter of non-income tax audits primarily arises from disputes on the tax treatment and tax rate applied to the sale of the Company’s products and services in these jurisdictions and the tax treatment of certain employee benefits. The Company accrues non-income taxes that may result from examinations by, or any negotiated agreements with, these tax authorities when a loss is probable and reasonably estimable. If the Company determines that a loss is reasonably possible and the loss or range of loss can be estimated, it discloses the reasonably possible loss or range of loss. The Company believes these matters are without merit and it is defending itself vigorously. Due to the inherent complexity and uncertainty of these matters and judicial process in certain jurisdictions, the final outcome may be materially different from the Company’s expectations.

Indemnification

In the ordinary course of business, the Company often includes standard indemnification provisions in its arrangements with its customers, partners, suppliers and vendors. Pursuant to these provisions, the Company may be obligated to indemnify such parties for losses or claims suffered or incurred in connection with its service, breach of representations or covenants, intellectual property infringement or other claims made against such parties. These provisions may limit the time within which an indemnification claim can be made. It is not possible to determine the maximum potential amount under these indemnification obligations due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement. The Company has never incurred significant expense defending its licensees against third-party claims, nor has it ever incurred significant expense under its standard service warranties or arrangements with its customers, partners, suppliers and vendors. Accordingly, the Company had no liabilities recorded for these provisions as of September 30, 2018 and December 31, 2017.

Note 14. Geographical Information

Revenue

See Note 2 – Revenue for further details.

Property and Equipment, net

The following table sets forth property and equipment, net by geographic area (in thousands):

	September 30, 2018	December 31, 2017
Property and equipment, net:		
United States	$ 870,962	$ 730,262
International	33,065	43,453
Total property and equipment, net	$ 904,027	$ 773,715

Note 15. Related Party Transactions

The Company has a partnership agreement for no consideration with Square, Inc., for which Jack Dorsey (the Company's Chief Executive Officer) serves as Chief Executive Officer, to enable U.S. political donations through Tweets. Neither Square, Inc. nor the Company will pay each other any amounts in connection with the agreement. The agreement has no impact on the Company's financial statements.

Certain of the Company's directors have affiliations with customers of the Company. The Company recognized revenue under contractual obligations from such customers of $6.7 million and $6.2 million for the three months ended September 30, 2018 and 2017, respectively, and $20.4 million and $16.2 million for the nine months ended September 30, 2018 and 2017, respectively. The Company had outstanding receivable balances of $4.2 million from such customers as of September 30, 2018 and December 31, 2017.

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Note 16. Restructuring Charges

On October 25, 2016, the Board of Directors of the Company approved a reduction in force plan (“2016 Plan”) of up to approximately 9% of the Company’s positions globally. The reduction in force was undertaken to eliminate investment in noncore areas and drive toward greater efficiency, while allowing the Company to continue to invest in its highest priorities. The Company completed the reduction in force in 2017.

On December 17, 2016, the Board of Directors of the Company approved a lease abandonment plan (“2016 Lease Plan”) to abandon excess office space with lease terms expiring through 2028.

The following table summarizes the activities related to the 2016 Lease Plan restructuring charges, as discussed above (in thousands):

	2016 Lease Plan
Accrued as of December 31, 2017	$31,929
Charges [1]	(1,266)
Cash payment	(12,558)
Non-cash and other adjustments	(34)
Accrued as of September 30, 2018	$18,071
Reflected in consolidated balance sheets as of September 30, 2018:	
Accrued and other current liabilities	$15,251
Other long-term liabilities	$2,820

[1] For the three and nine months ended September 30, 2018, the Company recorded a reduction to restructuring charges related to its 2016 Lease Plan of $0.1 million and $1.3 million in the consolidated statements of operations, respectively.

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 the consolidated financial statements and related notes thereto included in Item 1 "Financial Statements" in this Quarterly Report on Form 10-Q. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below and those discussed in the section titled "Risk Factors" included elsewhere in this Quarterly Report on Form 10-Q.

Overview and Highlights of Quarterly Results

Revenue in the third quarter of 2018 totaled $758.1 million, an increase of 29% compared to $589.6 million in the third quarter of 2017.

•Advertising revenue totaled $649.8 million, an increase of 29% year-over-year.

•Data licensing and other revenue totaled $108.3 million, an increase of 25% year-over-year.

•U.S. revenue totaled $423.4 million, an increase of 28% year-over-year.

•International revenue totaled $334.7 million, an increase of 30% year-over-year.

Net income was $789.2 million. Excluding the net benefit to tax expense of $683.3 million due to deferred tax asset valuation allowance releases, net income was $105.9 million, compared to net loss of $21.1 million for the three months ended September 30, 2017.

Non-GAAP net income was $162.7 million, an increase of 109% year-over-year.

Adjusted EBITDA was $295.4 million, an increase of 43% year-over-year.

Cash, cash equivalents and short-term investments in marketable securities totaled $5.96 billion as of September 30, 2018.

Ad engagements increased 50% year-over-year.

Cost per ad engagement decreased 14% year-over-year.

Average daily active usage for the three months ended September 30, 2018 grew 9% year-over-year.

Average monthly active users were 326 million for the three months ended September 30, 2018, a decrease of 4 million year-over-year and a decrease of 9 million compared to the three months ended June 30, 2018.

Key Metrics

We review a number of metrics, including the following key metrics, to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans and make strategic decisions.

Changes in Daily Active Users/Daily Active Usage (DAU). We define daily active users or daily active usage as Twitter users who logged in or were otherwise authenticated and accessed Twitter through our website, mobile website or mobile applications on any given day. Average DAU for a period represents the number of DAUs on each day of such period divided by the number of days for such period. Changes in DAU are a measure of changes in the size of our daily logged in or otherwise authenticated active user base. To calculate the year-over-year change in DAUs, we subtract the average DAU for the three months ended in the previous year from the average DAU for the same three months ended in the current year and divide the result by the average DAU for the three months ended in the previous year. For additional information on how we calculate changes in DAUs and factors that can affect this metric, see the section titled “Note Regarding Key Metrics.”

Monthly Active Users (MAUs). We define MAUs as Twitter users who logged in or were otherwise authenticated and accessed Twitter through our website, mobile website, desktop or mobile applications, SMS or registered third-party applications or websites in the 30-day period ending on the date of measurement. Average MAUs for a period represent the average of the MAUs at the end of each month during the period. MAUs are a measure of the size of our logged in or otherwise authenticated active user base. In the three months ended September 30, 2018, we had 326 million average MAUs, which represents a 4 million decrease from the three months ended September 30, 2017 and a 9 million decrease from the three months ended June 30, 2018. The decreases in average MAUs were impacted by a number of factors, including GDPR, decisions we have made to prioritize the health of the platform and not move to paid SMS carrier relationships in certain markets, as well as a product change that reduced automated usage and a technical issue that temporarily reduced the number of notifications sent. In the three months ended September 30, 2018, we had 67 million average MAUs in the United States and 259 million average MAUs in the rest of the world, which represent a decrease of 3% and 0%, respectively, from the three months ended September 30, 2017. For additional information on how we calculate MAUs and factors that can affect this metric, see the section titled “Note Regarding Key Metrics.”

[1] In the three months ended March 31, 2018, we discovered that a software change made in the second quarter of 2017 resulted in a non-material overstatement of our historical MAU in 2017. The differences were between 30,000 and 400,000 in each period presented for total MAU. After rounding, the only impact to our prior disclosures was to reduce international MAU from 261 million to 260 million in the third quarter of 2017 due to a change of approximately 175,000 international MAUs.

DAU grew faster than MAU in the third quarter of 2018 as we continued to benefit from organic growth, product and marketing investments made in this quarter and in prior periods. Our DAU to MAU ratio remains well below 50%. We have a significant opportunity to grow DAU, not just from our existing MAU base, but also from new users who come to Twitter every day.

Changes in Ad Engagements and Changes in Cost per Ad Engagement. We define an ad engagement as a user interaction with one of our pay-for-performance advertising products. Ad engagements with our advertising products are based on a user completing an objective set out by an advertiser such as expanding, Retweeting, liking or replying to a Promoted Tweet, viewing an embedded video, downloading or engaging with a promoted mobile application, clicking on a website link, signing up for marketing emails from advertisers, following the account that Tweets a Promoted Tweet, or completing a transaction on an external website. We believe changes in ad engagements is one way to measure user engagement with our advertising products. We believe changes in cost per ad engagement is one way to measure demand.

In the three months ended September 30, 2018, ad engagements increased 50% from the three months ended September 30, 2017. The increase was driven by increased demand, a continuing mix shift toward video ads, and improved click-through rates. In the three months ended September 30, 2018, average cost per ad engagement decreased 14% from the three months ended September 30, 2017. The decrease in cost per ad engagement was primarily driven by the ongoing mix shift to video ad engagements (which have overall lower cost per ad engagement compared to other ad formats).

Non-GAAP Financial Measures

To supplement our consolidated financial statements presented in accordance with generally accepted accounting principles in the United States, or GAAP, we consider certain financial measures that are not prepared in accordance with GAAP, including Adjusted EBITDA, non-GAAP income before income taxes, non-GAAP provision for income taxes as it relates to the calculation of non-GAAP net income, non-GAAP net income, revenue excluding foreign exchange effect and advertising revenue excluding foreign exchange effect. These non-GAAP financial measures are not based on any standardized methodology prescribed by GAAP and are not necessarily comparable to similarly-titled measures presented by other companies.

Revenue Measures Excluding the Impact of Changes in Foreign Exchange Rates (Constant Currency)

In order to present revenue and advertising revenue excluding the impact of changes in foreign exchange rates for the quarter ended September 30, 2018, we translated the applicable measure using the prior year's monthly exchange rates for our settlement currencies other than the U.S. dollar, which is also referred to as constant currency.

Adjusted EBITDA

We define Adjusted EBITDA as net income (loss) adjusted to exclude stock-based compensation expense, depreciation and amortization expense, interest and other expenses, net, provision (benefit) for income taxes, restructuring charges and one-time nonrecurring gain, if any.

The following table presents a reconciliation of net income (loss) to Adjusted EBITDA for each of the periods indicated (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Reconciliation of Net Income (Loss) to Adjusted EBITDA				
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)
Stock-based compensation expense	91,606	100,959	244,341	331,352
Depreciation and amortization expense	111,947	97,492	314,775	303,347
Interest and other expense, net	4,610	24,810	29,410	117,613
Provision (benefit) for income taxes	(701,921)	3,564	(733,286)	10,171
Restructuring charges and one-time nonrecurring gain	(18)	1,269	(1,266)	(8,529)
Adjusted EBITDA	$295,403	$206,999	$804,267	$554,812

Non-GAAP Net Income

We define non-GAAP net income as net income (loss) adjusted to exclude stock-based compensation expense, amortization of acquired intangible assets, non-cash interest expense related to convertible notes, non-cash expense related to acquisitions, impairment of investments in privately-held companies, restructuring charges and one-time nonrecurring gain, and adjustment to income tax expense based on the non-GAAP measure of profitability using our blended U.S. federal and state statutory tax rate, which was 24% for the current periods presented and 37% for the historical periods presented as a result of the 2017 Tax Cuts and Jobs Act.

Non-GAAP Income before Income Taxes. We define non-GAAP income before income taxes as income (loss) before income taxes adjusted to exclude stock-based compensation expense, amortization of acquired intangible assets, non-cash interest expense related to convertible notes, non-cash expense related to acquisitions, impairment of investments in privately-held companies, and restructuring charges and one-time nonrecurring gain.

Non-GAAP Provision for Income Taxes. We define non-GAAP provision for income taxes as the current and deferred income tax expense commensurate with the non-GAAP measure of profitability using our blended U.S. federal and state statutory tax rate.

The following table presents a reconciliation of net income (loss) to non-GAAP net income for each of the periods indicated (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Reconciliation of Net Income (Loss) to Non-GAAP Net Income				
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)
Exclude: Provision (benefit) for income taxes	(701,921)	3,564	(733,286)	10,171
Income (loss) before income taxes	87,258	(17,531)	217,007	(188,971)
Stock-based compensation expense	91,606	100,959	244,341	331,352
Amortization of acquired intangible assets	4,380	11,077	14,198	41,608
Non-cash interest expense related to convertible notes	30,878	20,355	74,909	59,644
Impairment of investments in privately-held companies	—	7,439	3,000	62,439
Restructuring charges and one-time nonrecurring gain	(18)	1,269	(1,266)	(8,529)
Non-GAAP income before income taxes	214,104	123,568	552,189	297,543
Non-GAAP provision for income taxes	51,386	45,720	132,526	110,091
Non-GAAP net income	$162,718	$77,848	$419,663	$187,452

We use non-GAAP financial measures of revenue excluding foreign exchange effect, advertising revenue excluding foreign exchange effect, Adjusted EBITDA, non-GAAP income before income taxes, non-GAAP provision for income taxes, and non-GAAP net income in evaluating our operating results and for financial and operational decision-making purposes. We believe that Adjusted EBITDA, non-GAAP income before income taxes and non-GAAP net income help identify underlying trends in our business that could otherwise be masked by the effect of the expenses that we exclude in Adjusted EBITDA, non-GAAP income before income taxes and non-GAAP net income. We believe that revenue excluding foreign exchange effect, advertising revenue excluding foreign exchange effect, Adjusted EBITDA, non-GAAP income before income taxes and non-GAAP net income provide useful information about our operating results, enhance the overall understanding of our past performance and future prospects and allow for greater transparency with respect to key metrics used by our management in its financial and operational decision-making. We also use these measures to establish budgets and operational goals for managing our business and evaluating our performance.

These non-GAAP financial measures should not be considered in isolation from, or as a substitute for, financial information prepared in accordance with GAAP. There are a number of limitations related to the use of these non-GAAP financial measures rather than net income (loss), which is the nearest GAAP equivalent of these financial measures. Some of these limitations are:

- Adjusted EBITDA, non-GAAP income before income taxes, non-GAAP provision for income taxes as it relates to the calculation of non-GAAP net income and non-GAAP net income exclude restructuring charges and one-time nonrecurring gain and certain recurring, non-cash charges such as stock-based compensation expense, amortization of acquired intangible assets, non-cash interest expense related to convertible notes and impairment of investments in privately-held companies;
- Stock-based compensation expense has been, and will continue to be for the foreseeable future, a significant recurring expense in our business and an important part of our compensation strategy;
- Adjusted EBITDA and non-GAAP income before income taxes do not reflect tax payments that reduce cash available to us;
- Non-GAAP net income reflects an estimate of taxes calculated in accordance with the SEC’s Non-GAAP Financial Measures Compliance and Disclosure Interpretation, not actual taxes due or payable;

- Adjusted EBITDA excludes depreciation and amortization expense and although these are non-cash charges, the property and equipment being depreciated and amortized may have to be replaced in the future; and
- The expenses that we exclude in our calculation of these non-GAAP financial measures may differ from the expenses, if any, that our peer companies may exclude from similarly-titled non-GAAP measures when they report their results of operations.

Results of Operations

The following tables set forth our consolidated statement of operations data for each of the periods presented (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Revenue				
Advertising services	$649,816	$502,802	$1,826,032	$1,465,730
Data licensing and other	108,295	86,831	307,491	246,009
Total revenue	758,111	589,633	2,133,523	1,711,739
Costs and expenses [(1)]				
Cost of revenue	243,644	210,016	696,652	643,263
Research and development	150,764	136,115	412,684	408,014
Sales and marketing	193,496	172,957	559,587	527,847
General and administrative	78,339	63,266	218,183	203,973
Total costs and expenses	666,243	582,354	1,887,106	1,783,097
Income (loss) from operations	91,868	7,279	246,417	(71,358)
Interest expense	(38,336)	(26,732)	(95,333)	(78,537)
Interest income	36,067	12,028	74,208	31,034
Other expense, net	(2,341)	(10,106)	(8,285)	(70,110)
Income (loss) before income taxes	87,258	(17,531)	217,007	(188,971)
Provision (benefit) for income taxes	(701,921)	3,564	(733,286)	10,171
Net income (loss)	$789,179	$(21,095)	$950,293	$(199,142)

(1) Costs and expenses include stock-based compensation expense as follows (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Cost of revenue	$4,247	$5,625	$12,384	$17,830
Research and development	53,195	57,174	140,210	185,185
Sales and marketing	19,634	22,433	52,681	68,216
General and administrative	14,530	15,727	39,066	60,121
Total stock-based compensation expense	$91,606	$100,959	$244,341	$331,352

The following table sets forth our consolidated statement of operations data for each of the periods presented as a percentage of revenue:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Revenue				
Advertising services	86 %	85 %	86 %	86 %
Data licensing and other	14	15	14	14
Total revenue	100	100	100	100
Costs and expenses				
Cost of revenue	32	36	33	38
Research and development	20	23	19	24
Sales and marketing	26	29	26	31
General and administrative	10	11	10	12
Total costs and expenses	88	99	88	104
Income (loss) from operations	12	1	12	(4)
Interest expense	(5)	(5)	(4)	(5)
Interest income	5	2	3	2
Other expense, net	(0)	(2)	(0)	(4)
Income (loss) before income taxes	12	(3)	10	(11)
Provision (benefit) for income taxes	(93)	1	(34)	1
Net income (loss)	104 %	(4)%	45 %	(12)%

Revenue

We generate the substantial majority of our revenue from the sale of advertising services. We also generate revenue by licensing our data to third parties and providing mobile advertising exchange services.

Advertising Services

We generate most of our advertising revenue by selling our Promoted Products. Currently, our Promoted Products consist of the following:

- Promoted Tweets. Promoted Tweets, which are labeled as “promoted,” appear within a user’s timeline, search results or profile pages just like an ordinary Tweet regardless of device, whether it be desktop or mobile. Using our proprietary algorithms and understanding of the interests of each user, we can deliver Promoted Tweets that are intended to be relevant to a particular user. We enable our advertisers to target an audience based on our users’ Interest Graphs. Our Promoted Tweets are pay-for-performance or pay-for-impression delivered advertising that are priced through an auction. Our Promoted Tweets include objective-based features that allow advertisers to pay only for the types of engagement selected by the advertisers, such as Tweet engagements (e.g., Retweets, replies and likes), website clicks, mobile application installs or engagements, obtaining new followers, or video views.
- Promoted Accounts. Promoted Accounts, which are labeled as “promoted,” provide a way for our advertisers to grow a community of users who are interested in their business, products or services. Our Promoted Accounts are pay-for-performance advertising that is priced through an auction.
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Promoted Trends. Promoted Trends, which are labeled as "promoted," appear at the top of the list of trending topics or timeline for an entire day in a particular country or on a global basis. We sell our Promoted Trends on a fixed-fee-per-day basis.

While the majority of the Promoted Products we sell to our advertisers are placed on Twitter, we also generate advertising revenue by placing advertising products that we sell to advertisers on third-party publishers' websites, applications or other offerings.

Data Licensing and Other

We generate data licensing and other revenue by (i) offering data products and data licenses that allow our data partners to access, search and analyze historical and real-time data on our platform (which consists of public Tweets and their content), and (ii) providing mobile advertising exchange services through our MoPub exchange. Our data partners generally purchase licenses to access all or a portion of our data for a fixed period. We recognize data licensing revenue over time as we grant customers a right to access our data for a defined period. In addition, we operate a mobile ad exchange and receive service fees from transactions completed on the exchange. Our mobile ad exchange enables buyers and sellers to purchase and sell advertising inventory and matches buyers and sellers. We have determined we are not the principal in the purchase and sale of advertising inventory in transactions between third-party buyers and sellers on the exchange. Therefore we report revenue related to our ad exchange services on a net basis.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Advertising services	$649,816	$502,802	29 %	$1,826,032	$1,465,730	25 %
Data licensing and other	108,295	86,831	25 %	307,491	246,009	25 %
Total revenue	$758,111	$589,633	29 %	$2,133,523	$1,711,739	25 %

Revenue in the three and nine months ended September 30, 2018 increased by $168.5 million or 29% and $421.8 million or 25% respectively, compared to the three and nine months ended September 30, 2017. On a constant currency basis, revenue in the three and nine months ended September 30, 2018 would have increased by $173.6 million or 29% and $406.0 million or 24% compared to the three and nine months ended September 30, 2017, respectively.

In the three and nine months ended September 30, 2018, advertising revenue increased by 29% and 25%, respectively, compared to the three and nine months ended September 30, 2017. On a constant currency basis, advertising revenue in the three and nine months ended September 30, 2018 would have increased by $152.2 million or 30% and $344.5 million or 24% compared to the three and nine months ended September 30, 2017, respectively. The substantial majority of our advertising revenue was generated from our owned and operated platform. Advertising revenue generated from the sale of our advertising products on our owned and operated platform in the three and nine months ended September 30, 2018 was $616.6 million and $1.71 billion, respectively, as compared to $454.6 million and $1.31 billion in the three and nine months ended September 30, 2017, respectively. Advertising revenue generated from the sale of our advertising products placed on third-party publishers' websites, applications and other offerings in the three and nine months ended September 30, 2018 was $33.2 million and $112.3 million, respectively, as compared to $48.2 million and $159.9 million in the three and nine months ended September 30, 2017, respectively. The decrease in advertising revenue from the sale of our advertising products placed on third-party publishers' websites, applications and other offerings in the three and nine months ended September 30, 2018 was mainly driven by the lack of contribution from TellApart (which was fully deprecated in 2017) and lower revenue from Twitter Audience Platform. TellApart revenue was $7.5 million and $44.5 million in the three and nine months ended September 30, 2017, respectively, with the last TellApart revenue generated in the three months ended September 30, 2017.

The overall increase in advertising revenue was primarily attributable to a 50% and 66% increase in the number of ad engagements in the three and nine months ended September 30, 2018, respectively, offset by a 14% and 25% decrease in average cost per ad engagement in the three and nine months ended September 30, 2018, respectively, compared to the same periods in 2017. The increase in ad engagements was driven by increased demand, including demand around the World Cup during the first two weeks of July, a continuing mix shift toward video ads, and improved click-through rates. The decrease in average cost per ad engagement was primarily driven by the ongoing mix shift to video ad engagements (which have overall lower cost per ad engagement compared to other ad formats).

Advertising revenue was driven by broad-based growth across most products and geographies. As we continue to improve our sales execution, drive ad relevance, and grow our user base and the level of engagement of our users, we believe the potential to increase our revenue grows.

In the three and nine months ended September 30, 2018, data licensing and other revenue increased by 25% compared to the three months and nine months ended September 30, 2017. The increase was mainly attributable to data licensing fees from the offering of data products, driven by new and expanded relationships, as well as steady revenue contribution from MoPub. We expect to generate increased revenue in MoPub while also growing our data revenue through our product and channel segmented go-to-market approach.

Cost of Revenue

Cost of revenue includes infrastructure costs, other direct costs including content costs, amortization of acquired intangible assets and amortization of capitalized labor costs for internally developed software, allocated facilities costs, as well as traffic acquisition costs, or TAC. Infrastructure costs consist primarily of data center costs related to our co-located facilities, which include lease and hosting costs, related support and maintenance costs and energy and bandwidth costs; as well as depreciation of servers and networking equipment; and personnel-related costs, including salaries, benefits and stock-based compensation, for our operations teams. TAC consists of costs we incur with third parties in connection with the sale to advertisers of our advertising products that we place on third-party publishers' websites, applications or other offerings collectively resulting from acquisitions, and from our organically-built advertising network, Twitter Audience Platform. Many of the elements of our cost of revenue are fixed, and cannot be reduced in the near term.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Cost of revenue	$243,644	$210,016	16 %	$696,652	$643,263	8 %
Cost of revenue as a percentage of revenue	32 %	36 %		33 %	38 %	

In the three months ended September 30, 2018, cost of revenue increased by $33.6 million compared to the three months ended September 30, 2017. The increase was attributable to an $18.8 million increase in depreciation and amortization expense primarily related to additional internally developed software, server and networking equipment, an $18.0 million increase in content costs, and a $4.8 million increase in other direct costs. These increases were offset by an $8.0 million decrease in TAC substantially due to the decrease in advertising revenue generated from TellApart, which we fully deprecated in 2017.

In the nine months ended September 30, 2018, cost of revenue increased by $53.4 million compared to the nine months ended September 30, 2017. The increase was attributable to a $56.0 million increase in content costs, a $30.2 million increase in depreciation and amortization expense primarily related to additional internally developed software, server and networking equipment, and a $7.6 million increase in other direct costs. These increases were offset by a $32.8 million decrease in TAC substantially due to the decrease in advertising revenue generated from TellApart, which we fully deprecated in 2017, and a $7.6 million decrease in infrastructure costs.

We plan to continue to scale the capacity and enhance the capability and reliability of our infrastructure to support user growth and increased activity on our platform. We expect that cost of revenue will vary in absolute dollar amounts for the foreseeable future and vary in the near term from period to period as a percentage of revenue.

Research and Development

Research and development expenses consist primarily of personnel-related costs, including salaries, benefits and stock-based compensation, for our engineers and other employees engaged in the research and development of our products and services. In addition, research and development expenses include amortization of acquired intangible assets, allocated facilities and other supporting overhead costs.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Research and development	$150,764	$136,115	11 %	$412,684	$408,014	1 %
Research and development as a percentage of revenue	20 %	23 %		19 %	24 %	

In the three months ended September 30, 2018, research and development expenses increased by $14.7 million compared to the three months ended September 30, 2017. The increase was attributable to a $12.5 million increase in personnel-related costs driven by an increase in average employee headcount offset by a decrease in stock-based compensation expense, and an $8.3 million increase in allocated facilities and other supporting overhead expenses, as well as other expenses. These increases were offset by a $6.1 million increase in the capitalization of costs associated with developing software for internal use.

In the nine months ended September 30, 2018, research and development expenses increased by $4.7 million compared to the nine months ended September 30, 2017. The increase was attributable to a $13.1 million increase in allocated facilities and other supporting overhead expenses, as well as other expenses, and the absence of a $10.7 million one-time nonrecurring gain on sale of assets that occurred in the nine months ended September 30, 2017, net of restructuring charges. These increases were offset by a $15.8 million decrease in personnel-related costs driven by a decrease in stock-based compensation expense offset by an increase in average employee headcount, and a $3.3 million increase in the capitalization of costs associated with developing software for internal use and other expenses.

We plan to continue to invest in key areas of our business to ensure that we have the right level of engineering, product management and design personnel and related resources to support our research and development efforts. We expect that research and development costs in absolute dollars will increase in the near term but will vary from period to period as a percentage of revenue.

Sales and Marketing

Sales and marketing expenses consist primarily of personnel-related costs, including salaries, commissions, benefits and stock-based compensation for our employees engaged in sales, sales support, business development and media, marketing, corporate communications and customer service functions. In addition, marketing and sales-related expenses also include advertising costs, market research, tradeshows, branding, marketing, public relations costs, amortization of acquired intangible assets, as well as allocated facilities and other supporting overhead costs.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Sales and marketing	$193,496	$172,957	12 %	$559,587	$527,847	6 %
Sales and marketing as a percentage of revenue	26 %	29 %		26 %	31 %	

In the three months ended September 30, 2018, sales and marketing expenses increased by $20.5 million compared to the three months ended September 30, 2017. The increase was attributable to a $15.0 million increase in allocated facilities and other supporting overhead expenses, as well as other expenses, and a $10.3 million increase in personnel-related costs driven by an increase in average employee headcount offset by a decrease in stock-based compensation expense. These increases were offset by a $2.8 million decrease in marketing and sales-related expenses and other expenses, and a $2.0 million decrease in amortization of acquired intangible assets.

In the nine months ended September 30, 2018, sales and marketing expenses increased by $31.7 million compared to the nine months ended September 30, 2017. The increase was attributable to a $31.8 million increase in allocated facilities and other supporting overhead expenses, as well as other expenses, and a $19.4 million increase in personnel-related costs driven by an increase in average employee headcount offset by a decrease in stock-based compensation expense. These increases were offset by a $15.6 million decrease in amortization of acquired intangible assets, a $2.3 million decrease in restructuring charges, and a $1.6 million decrease in marketing and sales-related expenses.

We continue to evaluate key areas in our business to ensure we have the right level of sales and marketing to execute on our key priorities and objectives. We expect that sales and marketing costs will vary in absolute dollar amounts for the foreseeable future and vary in the near term from period to period as a percentage of revenue.

General and Administrative

General and administrative expenses consist primarily of personnel-related costs, including salaries, benefits and stock-based compensation, for our executive, finance, legal, information technology, human resources and other administrative employees. In addition, general and administrative expenses include fees and costs for professional services, including consulting, third-party legal and accounting services and facilities and other supporting overhead costs that are not allocated to other departments.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
General and administrative	$78,339	$63,266	24 %	$218,183	$203,973	7 %
General and administrative as a percentage of revenue	10 %	11 %		10 %	12 %	

In the three months ended September 30, 2018, general and administrative expense increased by $15.1 million compared to the three months ended September 30, 2017. The increase was attributable to a $20.7 million increase in personnel-related costs driven by an increase in average employee headcount offset by a decrease in stock-based compensation expense, and a $4.9 million increase in professional service fees. These increases were offset by a $10.5 million increase in allocated facilities and other supporting overhead expenses.

In the nine months ended September 30, 2018, general and administrative expense increased by $14.2 million compared to the nine months ended September 30, 2017. The increase was attributable to a $14.9 million increase in personnel-related costs driven by an increase in average employee headcount offset by a decrease in stock-based compensation expense, and a $13.8 million increase in professional service fees. The increases were offset by a $13.2 million increase in allocated facilities and other supporting overhead expenses, and a $1.3 million decrease in other expenses.

We plan to continue to invest in key areas of our business and ensure that we have the right level of general and administrative support on our key priorities and objectives. We expect that general and administrative expenses will vary in absolute dollar amounts for the foreseeable future and vary in the near term from period to period as a percentage of revenue.

Interest Expense

Interest expense consists primarily of interest expense incurred in connection with the $935.0 million principal amount of 0.25% convertible senior notes due 2019, or the 2019 Notes, the $954.0 million principal amount of 1.00% convertible senior notes due 2021, or the 2021 Notes, and the $1.15 billion principal amount of 0.25% convertible senior notes due 2024, or the 2024 Notes, and together with the 2019 Notes and 2021 Notes, the Notes, and interest expense related to capital leases and other financing facilities.

	Three Months Ended	Nine Months Ended

	September 30,			September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Interest expense	$38,336	$26,732	43 %	$95,333	$78,537	21 %

In the three and nine months ended September 30, 2018, interest expense increased by $11.6 million and $16.8 million, respectively, compared to the three and nine months ended September 30, 2017. The increase was primarily attributable to our Notes, including the offering of our 2024 Notes in June 2018. Interest expense in the three and nine months ended September 30, 2018 was comprised of $37.2 million and $91.4 million, respectively, of total interest expense related to the Notes as well as the credit facility, and $1.1 million and $3.9 million, respectively, related to capital leases of equipment.

Interest Income

Interest income is generated from our cash equivalents and short-term investments net of the related amortization of premium paid on such investments.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Interest income	$36,067	$12,028	200 %	$74,208	$31,034	139 %

Interest income increased by $24.0 million and $43.2 million in the three and nine months ended September 30, 2018, respectively, compared to the three and nine months ended September 30, 2017. The increase was primarily attributable to higher invested cash balances and higher interest rates.

Other Income (Expense), Net

Other income (expense), net, consists primarily of unrealized foreign exchange gains and losses due to re-measurement of monetary assets and liabilities denominated in non-functional currencies and realized foreign exchange gains and losses on foreign exchange transactions. We expect our foreign exchange gains and losses will vary depending upon movements in the underlying exchange rates.

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	% Change	2018	2017	% Change
	(in thousands)			(in thousands)		
Other expense, net	$2,341	$10,106	(77)%	$8,285	$70,110	(88)%

Other expense, net, decreased by $7.8 million and $61.8 million in the three and nine months ended September 30, 2018, respectively, compared to the three and nine months ended September 30, 2017. The decrease was primarily attributable to no impairment charge in the three months ended September 30, 2018 and a $3.0 million impairment charge in the nine months ended September 30, 2018, compared to a $7.4 million and $62.4 million impairment charge in the three and nine months ended September 30, 2017, respectively, and the more favorable foreign currency exchange impacts from foreign currency-denominated assets and liabilities as well as derivative financial instruments.

Provision (Benefit) for Income Taxes

Provision (benefit) for income taxes consists of federal and state income taxes in the United States and income taxes in certain foreign jurisdictions. We released the valuation allowance related to most of the United States federal and all states deferred tax assets with the exception of California and Massachusetts, as well as in Brazil, which resulted in a net tax benefit. Our future effective tax rate will also be affected by the changes in tax rates and tax regulations, the impact of tax examinations, the impact of business combinations, and changes in valuation allowance. In addition, the provision is impacted by deferred income taxes and changes in the related valuation allowance reflecting the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
	(in thousands)		(in thousands)	
Provision (benefit) for income taxes	$(701,921)	$3,564	$(733,286)	$10,171

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Our benefit for income taxes in the three and nine months ended September 30, 2018 was $701.9 million and $733.3 million, respectively. Excluding the net benefit to tax expense of $683.3 million and $725.3 million, our benefit for income taxes in the three and nine months ended September 30, 2018 was $18.6 million and $8.0 million, respectively, compared to provision of $3.6 million and $10.2 million in the three and nine months ended September 30, 2017, respectively. The change was primarily due to the release of our valuation allowance related to most of the United States federal and all states deferred tax assets with the exception of California and Massachusetts during the three months ended September 30, 2018 and the release of the Brazilian valuation allowance during the three months ended June 30, 2018. Our future effective tax rate could be affected by our jurisdictional mix of income before taxes, including our allocation of centrally incurred costs to foreign jurisdictions, changes in tax rates and tax regulations, the impact of tax examinations, the impact of business combinations, tax effects of share based compensation, and changes in valuation allowance.

During the three months ended September 30, 2018, we released $797.4 million of the valuation allowance related to most of the United States federal and all states deferred tax assets with the exception of California and Massachusetts. The valuation allowance release resulted in a net benefit to tax expense of $681.5 million during the three months ended September 30, 2018 due to income tax accounting treatment in interim periods. We continue to maintain a valuation allowance related to specific net deferred tax assets where it is not more likely than not that the deferred tax assets will be realized, which include all capital losses, California, and Massachusetts net deferred tax assets. We concluded, based upon the preponderance of positive evidence (i.e. cumulative profit before tax adjusted for permanent items over the previous twelve quarters, a history of taxable income in recent periods, and the current forecast of income before taxes for the United States going forward) over negative evidence and the anticipated ability to use the deferred tax assets, that it was more likely than not that the deferred tax assets could be realized. If there are unfavorable changes to actual operating results or to projections of future income, we may determine that it is more likely than not such deferred tax assets may not be realizable.

During the nine months ended September 30, 2018, we released the valuation allowance related to deferred tax assets of our Brazilian operations that resulted in a net benefit to tax expense of $43.4 million. We reported cumulative profit before tax adjusted for permanent items over the previous twelve quarters in its Brazilian operations based on U.S. GAAP and expects that net operating loss carryovers and other deductible amounts in Brazil will ultimately be realizable against future profits. We concluded, based upon the preponderance of positive evidence over negative evidence and the anticipated ability to use the deferred tax assets, that it was more likely than not that the deferred tax assets in Brazil would be realizable due to U.S. GAAP forecasted profits for Twitter Brazil. If there are unfavorable changes to actual operating results or to projections of future income, we may determine that it is more likely than not such deferred tax assets may not be realizable.

In December 2017, the Tax Cuts and Jobs Act (the “Tax Act”), was signed into law. Among other provisions, the Tax Act reduces the United States federal statutory corporate income tax rate from 35% to 21%. Due to the magnitude of the changes enacted by the Tax Act, along with the pending status of the laws and guidance from the United States and state regulatory and standard-setting bodies, the accounting for the tax impacts of the Tax Act has been reported as provisional and may be subject to material change. There may be significant changes to our future effective tax rate, which may result in a material adverse effect on our business as a result of the Tax Act. We are not subject to the one-time transition tax due to net cumulative losses in our foreign operations. We are still assessing the impact of the international tax provisions provided for in the Tax Act that applies to calendar years 2018 onwards. We will complete our analysis in the fourth quarter of 2018 within the measurement period provided by SAB 118. Going forward, as a result of the Tax Act, our GAAP tax rate will be higher than our tax rate for our actual cash tax liabilities until we utilize all of our net operating loss carryforwards. Due to the mechanics of the Global Intangible Low-Taxed Income (GILTI) provisions, we will continue to calculate GAAP taxes on worldwide earnings in the U.S. without the benefit of foreign taxes paid.

Liquidity and Capital Resources

	Nine Months Ended September 30, 2018	2017
	(in thousands)	
Consolidated Statements of Cash Flows Data:		
Net income (loss)	$950,293	$(199,142)
Net cash provided by operating activities	1,007,712	633,102
Net cash provided by (used in) investing activities	(1,699,287)	18,754
Net cash provided by (used in) financing activities	989,231	(65,843)

Our principal sources of liquidity are our cash, cash equivalents, and short-term investments in marketable securities. Our cash equivalents and marketable securities are invested primarily in short-term fixed income securities, including government and investment-grade debt securities and money market funds. In June 2018, we also received net proceeds of approximately $1.14 billion from the issuance of 2024 Notes, after deducting the debt issuance costs. Concurrently with the sales of the 2024 Notes, we entered into privately-negotiated convertible note hedge transactions with respect to our common stock for which we paid approximately $268.0 million and sold warrants for which we received approximately $186.8 million. We expect that we will incur additional cash interest expense for the term of the 2024 Notes. In addition, we have access to funds under our credit facility (as described below) and have accessed the capital markets.

As of September 30, 2018, we had $5.96 billion of cash, cash equivalents and short-term investments in marketable securities, of which $205.5 million was held by our foreign subsidiaries. Under the current tax laws, if these funds are needed for our operations in the U.S., we would be required to accrue and pay additional taxes to repatriate certain of these funds. However, our intent is to indefinitely reinvest these funds outside of the U.S. and our current plans do not demonstrate a need to repatriate them to fund our U.S. operations. In addition, we have a revolving unsecured credit facility (described below) available to borrow up to $500.0 million. We believe that our existing cash, cash equivalents and short-term investment balance, and our credit facility, together with cash generated from operations will be sufficient to meet our working capital and capital expenditure requirements for at least the next 12 months. The Tax Act is not expected to have a material impact on our liquidity and capital resources going forward.

Credit Facility

In August 2018, we entered into a revolving credit agreement with certain lenders, which provides for a $500.0 million unsecured revolving credit facility maturing on August 7, 2023. We are obligated to pay interest on loans under the credit facility and other customary fees for a credit facility of this size and type, including an upfront fee and an unused commitment fee. The interest rate for the credit facility is determined based on calculations using certain market rates as set forth in the credit agreement. As of September 30, 2018, no amounts had been drawn under the credit facility. In connection with entering into the $500.0 million credit facility, we also terminated our $1.0 billion unsecured revolving credit facility that was scheduled to mature on October 22, 2018. No amounts had been drawn on the $1.0 billion credit facility at the time of its termination.

Operating Activities

Cash provided by operating activities consists of net income (loss) adjusted for certain non-cash items including depreciation and amortization, stock-based compensation, amortization of discount on our Notes, deferred income taxes, valuation allowance release, impairment of investments in privately-held companies, non-cash restructuring charges, as well as the effect of changes in working capital and other activities. We expect that cash provided by operating activities will fluctuate in future periods as a result of a number of factors, including fluctuations in our revenue, increases in operating expenses and costs related to acquisitions. For additional discussion, see “Part II—Other Information, Item 1A. Risk Factors.”

Cash provided by operating activities in the nine months ended September 30, 2018 was $1.01 billion, an increase in cash inflow of $374.6 million compared to the nine months ended September 30, 2017. Cash provided by operating activities was driven by net income of $950.3 million, as adjusted for the exclusion of non-cash expenses and other adjustments totaling $117.2 million, of which $725.3 million was related to a net benefit to tax expense associated with the release of the valuation allowance related to deferred tax assets, $314.8 million was related to depreciation and amortization expense, $244.3 million was related to stock-based compensation expense, and the effect of changes in working capital and other carrying balances that resulted in cash inflows of $174.6 million, which was in part driven by a one-time refund of prepaid employment taxes of $119.5 million.

Cash provided by operating activities in the nine months ended September 30, 2017 was $633.1 million. Cash provided by operating activities was driven by a net loss of $199.1 million, as adjusted for the exclusion of non-cash expenses totaling $754.2 million, of which $331.4 million was related to stock-based compensation expense, $303.3 million was related to depreciation and amortization expense and $62.4 million was related to an impairment charge on an investment in a privately-held company, and the effect of changes in working capital and other carrying balances that resulted in cash inflows of $78.0 million.

Investing Activities

Our primary investing activities consist of purchases of property and equipment, particularly purchases of servers and networking equipment, leasehold improvements for our facilities, purchases and disposal of marketable securities, strategic investments in privately-held companies, acquisitions of businesses and other activities.

Cash used in investing activities in the nine months ended September 30, 2018 was $1.70 billion, compared to $18.8 million cash provided by investing activities in the nine months ended September 30, 2017. The change was primarily due to a $2.03 billion increase in purchases of marketable securities, a $289.3 million increase in purchases of property and equipment, a $35.0 million decrease in proceeds from sale of long-lived assets, and a net increase of $33.6 million in cash used in business combinations, offset by a $660.0 million increase in proceeds from sales and maturities of marketable securities, an $8.8 million decrease in expenditures on other investing activities and $5.3 million increase in proceeds from sales of property and equipment.

We anticipate making capital expenditures of approximately $60 million to $85 million in the fourth quarter of 2018, as we invest in our infrastructure equipment.

Financing Activities

Our primary financing activities consist of issuances of securities, including common stock issued under our employee stock purchase plan, capital lease financing and stock option exercises by employees and other service providers.

Cash provided by financing activities in the nine months ended September 30, 2018 was $989.2 million, compared to $65.8 million cash used in financing activities in the nine months ended September 30, 2017. The change was due to net proceeds of $1.14 billion from the issuance of convertible notes net of issuance costs, reduced by the net cash outflow of $81.2 million from the purchase of convertible note hedges and sale of warrants closed in connection with the issuance of convertible notes, an $11.2 million decrease in payments of capital lease obligations, and a $2.3 million increase in proceeds from the issuance of shares of stock from the ESPP, offset by a $9.1 million increase in tax payments related to net share settlements of equity awards and a $4.6 million decrease in proceeds from option exercises.

Off Balance Sheet Arrangements

We do not have any off-balance sheet arrangements and did not have any such arrangements as of September 30, 2018.

Contractual Obligations

Our principal commitments consist of obligations under the Notes (including principal and coupon interest), capital and operating leases for equipment, office space and co-located data center facilities, as well as non-cancellable contractual commitments. Refer to Note 13 – Commitments and Contingencies for more details.

Critical Accounting Policies and Estimates

We prepare our consolidated financial statements in accordance with GAAP. In doing so, we make estimates and assumptions that affect our reported amounts of assets, liabilities, revenue and expenses, as well as related disclosure of contingent assets and liabilities. To the extent that there are material differences between these estimates and actual results, our financial condition or operating results would be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. We refer to accounting estimates of this type as critical accounting policies and estimates.

Income Taxes

We recognize deferred tax assets and liabilities for both the expected impact of differences between the financial statement amount and the tax basis of assets and liabilities and for the expected future tax benefit to be derived from tax losses and tax credit carryforwards. We record a valuation allowance against deferred tax assets when it is considered more likely than not that all or a portion of our deferred tax assets will not be realized. In making this determination, we are required to give significant weight to evidence that can be objectively verified. It is generally difficult to conclude that a valuation allowance is not needed when there is significant negative evidence, such as cumulative losses in recent years. Forecasts of future taxable income are considered to be less objective than past results, particularly in light of the previous years’ economic environment. Therefore, cumulative losses weigh heavily in the overall assessment.

In addition to considering forecasts of future taxable income, we are also required to evaluate and quantify other possible sources of taxable income in order to assess the realization of our deferred tax assets, namely the reversal of existing deferred tax liabilities, the carryback of losses and credits as allowed under current tax law, and the implementation of tax planning strategies. Evaluating and quantifying these amounts involves significant judgments. Each source of income must be evaluated based on all positive and negative evidence; this evaluation involves assumptions about future activity. Certain taxable temporary differences that are not expected to reverse during the carryforward periods permitted by tax law cannot be considered as a source of future taxable income that may be available to realize the benefit of deferred tax assets.

In order for us to realize our deferred tax assets, we must be able to generate sufficient taxable income in those jurisdictions where the deferred tax assets are located. We consider anticipated future growth, forecasted earnings, anticipated future taxable income, the mix of earnings in the jurisdictions in which we operate, historical earnings, taxable income in prior years, if carryback is permitted under the law and prudent and feasible tax planning strategies in determining the need for a valuation allowance. In the event we were to determine that we would not be able to realize all or part of our net deferred tax assets in the future, an adjustment to the deferred tax assets valuation allowance would be charged to earnings in the period in which we make such a determination. If we later determine that it is more likely than not that the net deferred tax assets would be realized, we would reverse the applicable portion of the previously provided valuation allowance as an adjustment to earnings at such time.

Once we determine that we are more likely than not to utilize deferred tax assets, we assess the amount of the valuation allowance we can utilize and release such valuation allowance. To determine the amount of deferred tax assets we can utilize in the future requires management to make significant estimates and assumptions, including estimate of future expected taxable income for each tax jurisdiction. We have also elected to treat the realization of net operating losses related to the Global Intangible Low-taxed Income, or GILTI under the tax law ordering approach when applying the impacts of GILTI to determine the amount of deferred tax asset we can utilize. Our election to use tax law ordering when applying the impact of GILTI is based on management’s interpretation of the tax rules; if the tax rules or our estimate of future expected taxable income changes, the amount of deferred tax assets we expect to utilize may be impacted.

Please refer to “Management’s Discussion and Analysis of Financial Condition and Results of Operations” contained in Part II, Item 7 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2017 for a more complete discussion of our critical accounting policies and estimates.

There have been no material changes to our critical accounting policies and estimates as compared to the critical accounting policies and estimates described in our Annual Report on Form 10-K for the fiscal year ended December 31, 2017, except as described in regards to our accounting policy related to revenue in Note 2 of Part I, Item 1, and income taxes above, of this Quarterly Report on Form 10-Q.

Recent Accounting Pronouncements

For information with respect to recent accounting pronouncements and the impact of these pronouncements on our consolidated financial statements, see Note 1 – “Description of Business and Summary of Significant Accounting Policies” in the notes to the consolidated financial statements included in Part I of this Quarterly Report on Form 10-Q.

Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We have operations both within the United States and internationally, and we are exposed to market risks in the ordinary course of our business. These risks include primarily interest rate and foreign exchange risks.

Interest Rate Fluctuation Risk

Our investment portfolio mainly consists of short-term fixed income securities, including government and investment-grade debt securities and money market funds. These securities are classified as available-for-sale and, consequently, are recorded in the consolidated balance sheets at fair value with unrealized gains or losses, net of tax reported as a separate component of accumulated other comprehensive loss. Our investment policy and strategy is focused on the preservation of capital and supporting our liquidity requirements. We do not enter into investments for trading or speculative purposes.

A rise in interest rates could have a material adverse impact on the fair value of our investment portfolio. Based on our investment portfolio balance as of September 30, 2018, a hypothetical increase in interest rates of 100 basis points would result in a decrease of approximately $19.1 million in the fair value of our available-for-sale securities. We currently do not hedge these interest rate exposures.

In 2014 and 2018, we issued convertible senior notes with an aggregate principal amount of $1.89 billion and $1.15 billion, respectively. We carry the Notes at face value less amortized discount on the consolidated balance sheet. Since the Notes bear interest at fixed rates, we have no financial statement risk associated with changes in interest rates. However, the fair value of the Notes changes when the market price of our stock fluctuates or interest rates change.

Foreign Currency Exchange Risk

Transaction Exposure

We transact business in various foreign currencies and have international revenue, as well as costs denominated in foreign currencies, primarily the Euro, British Pound, Singapore Dollar and Japanese Yen. This exposes us to the risk of fluctuations in foreign currency exchange rates. Accordingly, changes in exchange rates, and in particular a continuing strengthening of the U.S. dollar, would negatively affect our revenue and other operating results as expressed in U.S. dollars.

We have experienced and will continue to experience fluctuations in our net loss as a result of transaction gains or losses related to revaluing and ultimately settling certain asset and liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. Net realized and unrealized foreign currency gains were immaterial for the three and nine months ended September 30, 2018 and 2017. We currently utilize foreign currency forward contracts with financial institutions to reduce the risk that our earnings may be adversely affected by the impact of exchange rate fluctuations on monetary assets or liabilities denominated in currencies other than the local currency of a subsidiary. These contracts are not designated as hedging instruments. We may in the future enter into other derivative financial instruments if it is determined that such hedging activities are appropriate to further reduce our foreign currency exchange risk. Based on our foreign currency exposures from monetary assets and liabilities net of our open hedge position, we estimated that a 10% change in exchange rates against the U.S. dollars would have resulted in a gain or loss of approximately $1.4 million as of September 30, 2018.

Translation Exposure

We are also exposed to foreign exchange rate fluctuations as we translate the financial statements of our foreign subsidiaries into U.S. dollars in consolidation. If there is a change in foreign currency exchange rates, the translating adjustments resulting from the conversion of our foreign subsidiaries’ financial statements into U.S. dollars would result in a gain or loss recorded as a component of accumulated other comprehensive loss which is part of stockholders' equity.

Item 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this Quarterly Report on Form 10-Q. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. The design of disclosure controls and procedures and internal control over financial reporting must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of September 30, 2018, our disclosure controls and procedures were designed at a reasonable assurance level and were effective to provide reasonable assurance.

Changes in Internal Control over Financial Reporting

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

PART II – OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS

Beginning in September 2016, multiple putative class actions and derivative actions were filed in state and federal courts in the United States against Twitter, Twitter's directors, and/or certain officers alleging false and misleading statements in violation of securities laws and breach of fiduciary duty. The Company disputes the claims and intends to continue to defend the lawsuits vigorously. The putative class actions were consolidated in the U.S. District Court for the Northern District of California. On October 16, 2017, the court granted in part and denied in part the Company's motion to dismiss. On July 17, 2018, the court granted plaintiffs' motion for class certification in the consolidated securities action.

We are also currently involved in, and may in the future be involved in, legal proceedings, claims, investigations, and government inquiries arising in the ordinary course of business. These proceedings, which include both individual and class action litigation and administrative proceedings, have included, but are not limited to matters involving content on the platform, intellectual property, privacy, securities, employment and contractual rights. Legal risk is enhanced in certain jurisdictions outside the United States where our protection from liability for content published on our platform by third parties may be unclear and where we may be less protected under local laws than we are in the United States. Future litigation may be necessary, among other things, to defend ourselves, and our users, by determining the scope, enforceability, and validity of third-party rights or to establish our rights.

Although the results of the legal proceedings, claims, investigations, and government inquiries in which we are involved cannot be predicted with certainty, we do not believe that there is a reasonable possibility that the final outcome of these matters will have a material adverse effect on our business, financial condition, operating results, or prospects. However, the final results of any current or future proceeding cannot be predicted with certainty, and until there is final resolution on any such matter that we may be required to accrue for, we may be exposed to loss in excess of the amount accrued. 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

Investing in our common stock involves a high degree of risk. 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 the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, before making a decision to invest in our common stock. The risks and uncertainties described below may not be the only ones we face. If any of the risks actually occurs, our business, financial condition, operating results, cash flows and prospects could be materially and adversely affected. In that event, the market price of our common stock could decline, and you could lose part or all of your investment.

Risks Related to Our Business and Our Industry

If we fail to increase the growth rate of our DAUs, or if user engagement or ad engagement on our platform decline, our revenue, business and operating results may be harmed.

The size of our user base and our users' level of engagement are critical to our success. DAUs for the three months ended September 30, 2018 increased 9% year-over-year. We had 326 million average MAUs in the three months ended September 30, 2018, reflecting a 9 million decrease from 335 million average MAUs in the three months ended June 30, 2018. Our financial performance has been and will continue to be significantly determined by our success in increasing the growth rate of our DAUs and increasing their overall level of engagement on our platform as well as the number of ad engagements. We anticipate that our DAU growth rate will continue to slow over time as the size of our user base increases. For example, in general, a higher proportion of Internet users in the United States uses Twitter than Internet users in other countries and, in the future, we expect our user growth rate in certain international markets to continue to be higher than our user growth rate in the United States. To the extent our DAU growth rate slows, our success will become increasingly dependent on our ability to increase levels of ad engagement on Twitter. We generate a substantial majority of our revenue based upon engagement by our users with the ads that we display. If people do not perceive our products and services to be useful, reliable and trustworthy, we may not be able to attract users or increase the frequency of their engagement with our platform and the ads that we display. A number of consumer-oriented websites or platforms that achieved early popularity have seen their user bases or levels of engagement decline, in some cases precipitously. There is no guarantee that we will not experience a similar erosion of our user base or engagement levels. A number of factors could potentially negatively affect user growth and engagement, including if:

- users, including influential users, such as world leaders, government officials, celebrities, athletes, journalists, sports teams, media outlets and brands or certain age demographics, engage with other products, services or activities as an alternative to ours;
- we are unable to convince potential or new users of the value and usefulness of our products and services;
- there is a decrease in the perceived quantity, quality, usefulness or relevance of the content generated by our users or content partners;
- there could also be a perception that actions we take to better foster a healthy conversation or to improve relevancy on the platform negatively impact the content or ranking of content posted by certain users;
- our content partners terminate their relationships with us or do not renew their agreements on economic or other terms that are favorable to us;
- there are user concerns related to privacy and communication, safety, security, spam, manipulation or other hostile or inappropriate usage or other factors, or our health efforts result in the removal of certain accounts;
- we fail to introduce new and improved products or services or if we introduce new or improved products or services that are not favorably received or that negatively affect user engagement;
- technical or other problems prevent us from delivering our products or services in a rapid and reliable manner or otherwise affect the user experience, including issues with connecting to the Internet;
- users have difficulty installing, updating, or otherwise accessing our products or services on mobile devices as a result of actions by us or third parties that we rely on to distribute our products and deliver our services;
- we are unable to manage and prioritize information to ensure users are presented with content that is interesting, useful and relevant to them;
- users believe that their experience is diminished as a result of the decisions we make with respect to the frequency, format, relevance and prominence of ads or other content that we display;
- changes in our products or services that are mandated by, or that we elect to make to address, laws (such as the General Data Protection Regulation, or the GDPR) or legislation, inquiries from legislative bodies, regulatory authorities or litigation (including settlements or consent decrees) adversely affect our products or users;
- we fail to provide adequate customer service to users; or
- we do not maintain our brand image or our reputation is damaged.

We believe that meaningful improvement in audience growth rate and engagement is dependent on improving our product and feature offerings to demonstrate our value proposition to a larger audience. If we are unable to increase our user base, user growth rate or user engagement, or if these metrics decline, our products and services could be less attractive to potential or new users, as well as to advertisers, content partners and platform partners, which would have a material and adverse impact on our business, financial condition and operating results.

If our users or content partners do not continue to contribute content or such content is not viewed as unique or engaging by other users, we may experience a decline in users accessing our products and services and user engagement, which could result in the loss of content partners, advertisers, platform partners and revenue.

Our success depends on our ability to provide users of our products and services with unique and engaging content, which in turn depends on the content contributed by our users. We believe that one of our competitive advantages is the quality, quantity and real-time nature of the content on Twitter, and that access to unique or real-time content is one of the main reasons users visit Twitter. We seek to foster a broad and engaged user community, and we encourage world leaders, government officials, celebrities, athletes, journalists, sports teams, media outlets and brands to use our products and services to express their views to broad audiences. We also encourage media outlets to use our products and services to distribute their content. In addition, we license our premium live streaming video content from a variety of content providers. If these content providers are no longer willing or able to license us content upon economic and other terms that are acceptable to us, our ability to stream such content will be adversely affected and/or our costs could increase. If users, including influential users, do not continue to contribute content or content providers do not license content to Twitter, and we are unable to provide users with unique, engaging and timely content, our user base and user engagement may decline. Additionally, if we are not able to address user concerns regarding the safety and security of our products and services or if we are unable to successfully prevent or mitigate spammy, abusive or other disruptive or detracting behavior on our platform, the size of our user base and user engagement may decline. We rely on the sale of advertising services for the substantial majority of our revenue and a decline in the number of users, user growth rate, or user engagement, including as a result of the loss of world leaders, government officials, celebrities, athletes, journalists, sports teams, media outlets and brands who generate content on Twitter, advertisers may deter new advertisers from using our products or services or cause current advertisers to reduce their spending with us or cease doing business with us, which would harm our business and operating results.

We generate the substantial majority of our revenue from advertising. The loss of advertising revenue could harm our business.

The substantial majority of our revenue is currently generated from third parties advertising on Twitter. We generated approximately 86% of our revenue from advertising in the fiscal year ended December 31, 2017 and the nine months ended September 30, 2018. We generate substantially all of our advertising revenue through the sale of our Promoted Products: Promoted Tweets, Promoted Accounts and Promoted Trends. As is common in our industry, our advertisers do not have long-term advertising commitments with us. In addition, many of our advertisers purchase our advertising services through one of several large advertising agency holding companies. To sustain or increase our revenue, we must add new advertisers and encourage existing advertisers to maintain or increase the amount of advertising inventory purchased through our platform and adopt new features and functionalities that we add to our platform. However, advertising agencies and potential new advertisers may view our Promoted Products or any new products or services we offer as experimental and unproven, and we may need to devote additional time and resources to educate them about our products and services. Advertisers also may choose to reach users through our free products and services, instead of our Promoted Products. Advertisers will not continue to do business with us, or they will reduce the prices they are willing to pay to advertise with us, if we do not deliver ads in an effective manner, or if they do not believe that their investment in advertising with us will generate a competitive return on investment relative to alternatives, including online, mobile and traditional advertising platforms. In addition, competition for advertising is becoming increasingly more intense and our advertising revenue could be further impacted by escalating competition for digital ad spending as well as the re-evaluation of our revenue product feature portfolio, which could result in the de-emphasis of certain product features. Since our initial public offering, our revenue growth has been primarily driven by increases in the number of our users and increases in our ad load driven by strong advertiser demand as well as other factors. To date, our available advertising inventory has been greater than demand. Our future revenue growth, however, may be limited by available advertising inventory for specific ad types on certain days if we do not increase the number of our users, their engagement or monetize our larger global audience. Our advertising revenue also could be adversely affected by a number of other factors, including:

- decreases in user engagement with the ads on our platform and those that we serve off of our platform;
- decreases in the size of our user base or user growth rate;

- if we are unable to demonstrate the value of our Promoted Products to advertisers and advertising agencies or if we are unable to measure the value of our Promoted Products in a manner which advertisers and advertising agencies find useful or reliable;
- if we are unable to demonstrate the value of, or attract video and video advertisements, on our platform;
- decreases in the perceived quantity, quality, usefulness or relevance of our users or the content generated by our users or content partners;
- if our Promoted Products are not cost effective or not valued by certain types of advertisers or if we are unable to develop cost effective or valuable advertising services for different types of advertisers;
- if we are unable to convince advertisers and brands to invest resources in learning to use our products and services and maintaining a brand presence on Twitter;
- our advertisers' ability to optimize their campaigns or effectively and reliably measure the results of their campaigns;
- product or service changes we may make that change the frequency or relative prominence of ads displayed on Twitter or that detrimentally impact revenue in the near term with the goal of achieving long-term benefits;
- our inability to increase advertiser demand and spend from new and existing advertisers as well as advertising inventory;
- our inability to increase the relevance of ads shown to users;
- our inability to help advertisers effectively target ads, including as a result of the fact that we do not collect extensive personal information from our users and that we do not have real-time geographic information for all of our users particularly for ads served through our app mobile-focused advertising exchange;
- decreases in the cost per ad engagement;
- failure to effectively monetize our growing international user base, our logged-out audience or our syndicated audience;
- loss of advertising market share to our competitors;
- the degree to which users access Twitter content through applications that do not contain our ads;
- any arrangements or other partnerships with third parties to share our revenue;
- if our new advertising strategies do not gain traction;
- the impact of new technologies that could block or obscure the display of our ads;
- adverse legal developments relating to advertising or measurement tools related to our metrics or the effectiveness of advertising, including legislative and regulatory developments, such as GDPR and other privacy regulations, and developments in litigation;
- our inability to create new products, product features and services that sustain or increase the value of our advertising services to both our advertisers and our users;
- changes to our products or development of new products or product features that decrease users' ad engagements or limit the types of user interactions that we count as ad engagements;
- the impact of fraudulent clicks or spam on our Promoted Products and our users;
- changes in the way our advertising is priced; and
- the impact of macroeconomic conditions and conditions in the advertising industry in general.

The occurrence of any of these or other factors could result in a reduction in demand for our ads, which may reduce the prices we receive for our ads, either of which would negatively affect our revenue and operating results.

If we are unable to compete effectively for users and advertiser spend, our business and operating results could be harmed.

Competition for users of our products and services is intense. Although we have developed a global platform that we believe is the best and fastest place to see what's happening and what people are talking about all around the world, we face strong competition in our business. We compete against many companies to attract and engage users, including companies which have greater financial resources and substantially larger user bases, such as Facebook (including Instagram and WhatsApp), Alphabet (including Google and YouTube), Microsoft (including LinkedIn), Snap and Oath (formerly known as Yahoo), which offer a variety of Internet and mobile device-based products, services and content. For example, Facebook operates a social networking site with significantly more users than Twitter and has been introducing features similar to those of Twitter. In addition, Alphabet may use its strong position in one or more markets to gain a competitive advantage over us in areas in which we operate, including by integrating competing features into products or services they control. As a result, our competitors may draw users towards their products or services and away from ours. This could decrease the growth or engagement of our user base, which, in turn, would negatively affect our business. We also compete against largely regional social media and messaging companies that have strong positions in particular countries such as Kakao and Line.

We believe that our ability to compete effectively for users depends upon many factors both within and beyond our control, including:

- the popularity, usefulness, ease of use, performance and reliability of our products and services compared to those of our competitors;
- the amount, quality and timeliness of content generated by our users and content partners;
- the timing and market acceptance of our products and services;
- our ability, in and of itself, and in comparison to the ability of our competitors, to develop new products and services and enhancements to existing products and services;
- the frequency and relative prominence of the ads displayed by us or our competitors;
- our ability to establish and maintain relationships with content partners;
- our ability to develop a reliable, scalable, secure, high-performance technology infrastructure that can efficiently handle increased usage globally;
- changes mandated by, or that we elect to make to address, legislation, regulatory authorities or litigation, including settlements, consent decrees and the GDPR, some of which may have a disproportionate effect on us;
- the application of antitrust laws both in the United States and internationally;
- the continued adoption of our products and services internationally;
- our ability to establish and maintain relationships with platform partners that integrate with our platform;
- acquisitions or consolidation within our industry, which may result in more formidable competitors; and
- our reputation and brand strength relative to our competitors.

We also face significant competition for advertiser spend. The substantial majority of our revenue is currently generated through third parties advertising on Twitter, and we compete against online and mobile businesses, including those referenced above, and traditional media outlets, such as television, radio and print, for advertising budgets. In addition, many advertisers, particularly branded advertisers, use marketing mix analyses to determine how to allocate their advertising budgets on an annual or bi-annual basis. Accordingly, if we fail to demonstrate to such advertisers during the appropriate time period that we provide a better return on investment than our competitors do, we may lose the opportunity to secure, increase or sustain our share of the advertising budget allocated for a significant portion of the year until the next budget cycle.

We also compete with advertising networks, exchanges, demand side platforms and other platforms, such as Google AdSense, DoubleClick Ad Exchange, Nexage and Brightroll Ad Exchanges, Oath (formerly known as AOL's Ad.com) and Microsoft Media Network, for marketing budgets and in the development of the tools and systems for managing and optimizing advertising campaigns. In order to grow our revenue and improve our operating results, we must increase our share of spending on advertising relative to our competitors, many of which are larger companies that offer more traditional and widely accepted advertising products. In addition, some of our larger competitors have substantially broader product or service offerings and leverage their relationships based on other products or services to gain additional share of advertising budgets.

We believe that our ability to compete effectively for advertiser spend depends upon many factors both within and beyond our control, including:

- the size and composition of our user base relative to those of our competitors;
- our ad targeting and measurement capabilities, and those of our competitors;
- the timing and market acceptance of our advertising services, and those of our competitors;
- our marketing and selling efforts, and those of our competitors;
- the pricing of our advertising products and services relative to those of our competitors;
- the actual or perceived return our advertisers receive from our advertising services, and those of our competitors; and
- our reputation and the strength of our brand relative to our competitors.

In recent years, there have been significant acquisitions and consolidation by and among our actual and potential competitors. We anticipate this trend of consolidation will continue, which will present heightened competitive challenges for our business. Acquisitions by our competitors may result in reduced functionality of our products and services. For example, following Facebook's acquisition of Instagram, Facebook disabled Instagram's photo integration with Twitter such that Instagram photos were no longer viewable within Tweets and users are instead re-directed to Instagram to view Instagram photos through a link within a Tweet. As a result, our users may be less likely to click on links to Instagram photos in Tweets, and Instagram users may be less likely to Tweet or remain active users of Twitter. Any similar elimination of integration with Twitter in the future, whether by Facebook or others, may adversely impact our business and operating results.

Consolidation may also enable our larger competitors to offer bundled or integrated products that feature alternatives to our platform. Reduced functionality of our products and services, or our competitors' ability to offer bundled or integrated products that compete directly with us, may cause our user growth, user engagement and ad engagement to decline and advertisers to reduce their spend with us.

If we are not able to compete effectively for users and advertiser spend our business and operating results would be materially and adversely affected.

Our operating results may fluctuate from quarter to quarter, which makes them difficult to predict.

Our quarterly operating results have fluctuated in the past and will fluctuate in the future. As a result, our past quarterly operating results are not necessarily indicators of future performance. Our operating results in any given quarter can be influenced by numerous factors, many of which we are unable to predict or are outside of our control, including:

- our ability to grow our user base and user engagement;
- our ability to attract and retain advertisers, content partners and platform partners;
- the occurrence of planned significant events, such as the World Cup, Super Bowl, Champions League Final, World Series, Olympics and the Oscars, or unplanned significant events, such as natural disasters and political revolutions;
- the pricing of our products and services;
- the development and introduction of new products or services, changes in features of existing products or services or de-emphasis or termination of existing products, product features or services;

- the impact of competitors or competitive products and services;
- our ability to maintain or increase revenue;

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- our ability to maintain or improve gross margins and operating margins;
- increases in research and development, marketing and sales and other operating expenses that we may incur to grow and expand our operations and to remain competitive;
- stock-based compensation expense;
- costs related to the acquisition of businesses, talent, technologies or intellectual property, including potentially significant amortization costs;
- system failures resulting in the inaccessibility of our products and services;
- breaches of security or privacy, and the costs associated with remediating any such breaches;
- adverse litigation judgments, settlements or other litigation-related costs, and the fees associated with investigating and defending claims;
- changes in the legislative or regulatory environment, including with respect to security, tax, privacy or enforcement by government regulators, including fines, orders or consent decrees;
- changes in reserves or other non-cash credits or charges, such as releases of deferred tax asset valuation allowances, impairment charges or purchase accounting adjustments;
- changes in our expected estimated useful life of property and equipment and intangible assets;
- fluctuations in currency exchange rates and changes in the proportion of our revenue and expenses denominated in foreign currencies;
- changes in U.S. generally accepted accounting principles; and
- changes in global business or macroeconomic conditions.

Given our limited operating history and the rapidly evolving markets in which we compete, our historical operating results may not be useful to you in predicting our future operating results. If our revenue growth rate slows, we expect that the seasonality in our business may become more pronounced and may in the future cause our operating results to fluctuate. For example, advertising spending is traditionally seasonally strong in the fourth quarter of each year and we believe that this seasonality affects our quarterly results, which generally reflect higher sequential advertising revenue growth from the third to fourth quarter compared to sequential advertising revenue growth from the fourth quarter to the subsequent first quarter. In addition, global economic concerns continue to create uncertainty and unpredictability and add risk to our future outlook. An economic downturn in any particular region in which we do business or globally could result in reductions in advertising revenue, as our advertisers reduce their advertising budgets, and other adverse effects that could harm our operating results.

Our priority as a company is to improve the health of the public conversation on Twitter. Focusing our efforts on this priority may negatively impact our business operations in the short term.

We believe that our long-term success depends on our ability to improve the health of the public conversation on Twitter. We have made this our priority and have focused our efforts on improving the quality of that conversation, including by devoting substantial internal resources to our strategy. These efforts include the reduction of abuse, harassment, spam, manipulation and malicious automation on the platform, as well as a focus on improving information quality and the civility of conversation on Twitter. For example, we recently announced that we were removing certain locked accounts from follower counts across profiles globally. While that specific change did not affect our previously-disclosed MAU or DAU metrics, some of the health initiatives that we have implemented as part of our ongoing commitment to a healthy public conversation have negatively impacted, and may in the future negatively impact, our publicly reported metrics in a few ways. First, our health efforts include the removal of accounts pursuant to our terms and services that are abusive, spammy, fake or malicious, and these accounts may be monthly active or daily active users, as well as actions taken to detect and challenge potentially automated, spammy, or malicious accounts during the sign-up process. For example, in the third quarter of 2018, average MAUs were 326 million, a decrease of 4 million users year-over-year and a decrease of 9 million quarter-over-quarter, reflecting, in part, the impact from decisions we have made to prioritize the health of the platform. Second, we are also making active decisions to prioritize health related initiatives over other near-term product improvements that may drive more usage of Twitter as a daily utility. These decisions may not be consistent with the short-term expectations of our advertising customers or investors and may not produce the long-term benefits that we expect, in which case our user growth and user engagement, our relationships with advertisers and our business and operating results could be harmed.

We depend on highly skilled personnel to grow and operate our business, and have seen high levels of attrition. If we are unable to hire, retain and motivate our personnel, we may not be able to grow effectively.

Our future success and strategy will depend upon our continued ability to identify, hire, develop, motivate and retain highly skilled personnel, including senior management, engineers, designers and product managers. We depend on contributions from our employees, and in particular our senior management team, to execute efficiently and effectively. We do not have employment agreements other than offer letters with any member of our senior management or other key employee, and we do not maintain key person life insurance for any employee. We also face significant competition for employees, particularly in the San Francisco Bay Area (where our headquarters is located) and other key markets, for engineers, designers and product managers from other Internet and high-growth companies, which include both publicly-traded and privately-held companies. As a result, we may not be able to retain our existing employees or hire new employees quickly enough to meet our needs. At the same time, we have also experienced high voluntary attrition, and the resulting influx of new leaders and other employees has required us to expend the time, attention and resources necessary to recruit and retain talent, restructure parts of our organization, and train and integrate new employees. In addition, to attract highly and retain skilled personnel, we have had to offer, and believe we will need to continue to offer, highly competitive compensation packages. We may need to invest significant amounts of cash and equity to attract and retain new employees and we may not realize sufficient return on these investments. In addition, changes to U.S. immigration and work authorization laws and regulations can be significantly affected by political forces and levels of economic activity. Our business may be materially adversely affected if legislative or administrative changes to immigration or visa laws and regulations impair our hiring processes or projects involving personnel who are not citizens of the country where the work is to be performed. If we are not able to effectively attract and retain employees, we may not be able to innovate or execute quickly on our strategy and our ability to achieve our strategic objectives will be adversely impacted, and our business will be harmed.

We also believe that our culture and core values have been, and will continue to be, a key contributor to our success and our ability to foster the innovation, creativity and teamwork we believe we need to support our operations. If we fail to effectively manage our hiring needs and successfully integrate our new hires, our efficiency and ability to meet our forecasts and our culture, employee morale, productivity and retention could suffer, and our business and operating results could be adversely affected.

If we fail to monetize effectively in international markets, our revenue and our business will be harmed.

We may not be able to monetize our products and services internationally as effectively as in the United States as a result of competition, advertiser demand, differences in the digital advertising market and digital advertising conventions, as well as differences in the way that users in different countries access or utilize our products and services. For example, a significant portion of users in emerging markets like India and Pakistan use feature phones and communicate via SMS messaging, both of which have limited functionality and neither of which may be able to take full advantage of our products and services offered on smartphone or our website or desktop applications. Users who access Twitter through SMS messaging may monetize at lower rates than other users. Differences in the competitive landscape in international markets may impact our ability to monetize our products and services. For example, in South Korea we face intense competition from a messaging service offered by Kakao, which offers some of the same communication features as Twitter. The existence of a well-established competitor in an international market may adversely affect our ability to increase our user base, attract content partners, advertisers and platform partners and monetize our products in such market. We may also experience differences in advertiser demand in international markets. For example, during times of political upheaval, advertisers may choose not to advertise on Twitter. Certain international markets are also not as familiar with digital advertising in general, or in new forms of digital advertising such as our Promoted Products. Further, we face challenges in providing certain advertising products, features or analytics in certain international markets, such as the European Union, due to government regulation. Our products and services may also be used differently abroad than in the United States. In particular, in certain international markets where Internet access is not as rapid or reliable as in the United States, users tend not to take advantage of certain features of our products and services, such as rich media included in Tweets, video or live streaming video. The limitation of mobile devices of users in emerging and other markets limits our ability to deliver certain features to those users and may limit the ability of advertisers to deliver compelling advertisements to users in these markets which may result in reduced ad engagements which would adversely affect our business and operating results.

If our revenue from our international operations, and particularly from our operations in the countries and regions where we have focused our spending, does not exceed the expense of establishing and maintaining these operations, our business and operating results will suffer. In addition, our user base may expand more rapidly in international regions where we are less successful in monetizing our products and services. As our user base continues to expand internationally, we will need to increase revenue from the activity generated by our international users in order to grow our business. For example, users outside the United States constituted 79% of our average MAUs in the three months ended September 30, 2018, but our international revenue, as determined based on the billing location of our customers, was only 44% of our consolidated revenue in the three months ended September 30, 2018. Our inability to successfully expand our business internationally could adversely affect our business, financial condition and operating results.

User growth and engagement depend upon effective interoperation with operating systems, networks, devices, web browsers and standards that we do not control.

We make our products and services available across a variety of operating systems and through websites. We are dependent on the interoperability of our products and services with popular devices, desktop and mobile operating systems and web browsers that we do not control, such as Mac OS, Windows, Android, iOS, Chrome and Firefox. Any changes, bugs or technical issues in such systems, devices or web browsers or changes in our relationships with mobile operating system partners or mobile carriers, or in their terms of service or policies that diminish the functionality of our products and services, make it difficult for our users to access our content, limit our ability to target or measure the effectiveness of ads, impose fees related to our products or services or give preferential treatment to competitive products or services could adversely affect usage of our products and services. For example, many of our relationships with our mobile carriers to deliver our SMS messages were originally negotiated as free or low-cost connections, but recently some of the mobile carriers have been proposing fee increases for these arrangements, which may not be cost-effective for us. This may, in turn, adversely affect the number of users who receive our SMS messages. Additionally, some of our mobile carriers have experienced infrastructure issues due to natural disasters, which have caused deliverability errors or poor quality communications with our products. Any such errors, regardless of whether caused by our infrastructure or that of the service provider, may result in the loss of our existing users or may make it difficult to attract new users. Further, if the number of platforms for which we develop our product expands, it will result in an increase in our operating expenses. In order to deliver high quality products and services, it is important that our products and services work well with a range of operating systems, networks, devices, web browsers and standards that we do not control. In addition, because a majority of our users access our products and services through mobile devices, we are particularly dependent on the interoperability of our products and services with mobile devices and operating systems in order to deliver our products and services. For example, a change was made to Safari’s integration with third-party applications including Twitter that resulted in a decrease of approximately 1 million MAUs in the first quarter of 2018 who accessed Twitter by using registered third-party applications when those applications automatically contact our servers for regular updates without discernible user-initiated action. We also may not be successful in developing relationships with key participants in the mobile industry or in developing products or services that operate effectively with these operating systems, networks, devices, web browsers and standards. In the event that it is difficult for our users to access and use our products and services, particularly on their mobile devices, our user growth and engagement could be harmed, and our business and operating results could be adversely affected.

Our products and services may contain undetected software errors, which could harm our business and operating results.

Our products and services incorporate complex software and we encourage employees to quickly develop and help us launch new and innovative features. Our software, including any open source software that is incorporated into our code, has contained, and may now or in the future contain, errors, bugs or vulnerabilities. For example, in May 2018, we announced that an internal bug had resulted in the storage of passwords unmasked in an internal log. When users set a password for their Twitter accounts, we secure those passwords in a format that prevents anyone at Twitter from seeing or knowing the actual password through a password hashing function, which replaces the actual password with a random set of numbers and letters that are stored in Twitter's system. Due to a bug, passwords were written to a service log before completing the hashing process. We found this error ourselves, removed the passwords from the logs, and are implementing plans to prevent this bug from happening again. Our investigation shows no indication of breach or misuse by anyone. In September 2018, we announced an internal bug related to our Account Activity API, which allows registered developers to build customer support and engagement tools for businesses and others on Twitter. This bug may have caused some of the customer communications and engagements with businesses and others on Twitter to be unintentionally sent to another registered developer. Although our initial analysis indicates that a complex series of technical circumstances had to occur at the same time for this bug to have resulted in account information definitively being shared with the wrong recipient, we contacted our developer partners to ensure that they are complying with their obligations to delete information they should not have in their possession. As was the case with these errors, errors in our software code may only be discovered after the product or service has been released. Errors, vulnerabilities, or other design defects within the software on which we rely may result in a negative experience for users, partners and advertisers who use our products, delay product introductions or enhancements, result in targeting, measurement, or billing errors, compromise our ability to protect the data of our users and/or our intellectual property or lead to reductions in our ability to provide some or all of our services. For example, in December 2016, we discovered and corrected a technical error in our Android application that resulted in incorrect reporting of certain video advertisement metrics for approximately one month. Any errors, bugs or vulnerabilities discovered in our code after release could result in damage to our reputation, loss of users, loss of content or platform partners, loss of advertisers or advertising revenue or liability for damages or other relief sought in lawsuits, regulatory inquiries or other proceedings, any of which could adversely affect our business and operating results.

Our ability to convince potential and new users of the value of our products and services is critical to increasing our user base and to the success of our business.

We have developed a global platform that we believe is the best and fastest place to see what's happening and what people are talking about all around the world, but the market for our products and services is relatively new and may not develop as expected, if at all. Despite our efforts to reduce barriers to consumption, people who are not our users may not understand the value of our products and services and new users may initially find our products confusing, which may make retention of such users more difficult. There may be a perception that our products and services are only useful to users who Tweet, or to influential users with large audiences. Convincing potential and new users of the value of our products and services is critical to increasing our user base, user engagement and to the success of our business.

If we fail to educate potential users and potential advertisers about the value of our products and services, if the market for our platform does not develop as we expect or if we fail to address the needs of this market, our business will be harmed. Failure to adequately address these risks and challenges could harm our business and cause our operating results to suffer.

We have incurred significant operating losses in the past, and we may not be able to maintain profitability.

Since our inception, we have incurred significant operating losses, and, as of September 30, 2018, we had an accumulated deficit of $1.71 billion. Although our revenue has grown rapidly, increasing from $664.9 million in 2013 to $2.44 billion in 2017, our revenue growth rate has slowed as a result of a variety of factors. We believe that our future revenue growth will depend on, among other factors, our ability to attract new users, increase user engagement and ad engagement, increase our brand awareness, compete effectively, maximize our sales efforts, demonstrate a positive return on investment for advertisers, and successfully develop new products and services. Accordingly, you should not rely on the revenue growth of any prior quarterly or annual period as an indication of our future performance. Our costs may increase in future periods as we continue to expend substantial financial resources on:

- our technology infrastructure;
- research and development for our products and services;
- sales and marketing;
- attracting and retaining talented employees;

- strategic opportunities, including commercial relationships and acquisitions; and
- general administration, including personnel costs and legal and accounting expenses related to being a public company.

These investments may not result in increased revenue or growth in our business. Additionally, certain new revenue products or product features may carry higher costs relative to our other products, which may decrease our margins. If we are unable to generate adequate revenue growth and to manage our expenses, we may continue to incur significant losses in the future and may not be able to maintain profitability.

Our business depends on continued and unimpeded access to our products and services on the Internet by our users, content partners, advertisers, and platform partners. If we or our users experience disruptions in Internet service or if Internet service providers are able to block, degrade or charge for access to our products and services, we could incur additional expenses and the loss of users and advertisers.

We depend on the ability of our users, content partners, advertisers and platform partners to access the Internet. Currently, this access is provided by companies that have significant market power in the broadband and Internet access marketplace, including incumbent telephone companies, cable companies, mobile communications companies, government-owned service providers, device manufacturers and operating system providers, any of whom could take actions that degrade, disrupt or increase the cost of user access to our products or services, which would, in turn, negatively impact our business. The adoption or repeal of any laws or regulations that adversely affect the growth, popularity or use of the Internet, including laws or practices limiting Internet neutrality, could decrease the demand for, or the usage of, our products and services, increase our cost of doing business and adversely affect our operating results. For example, access to Twitter is blocked in China and has been intermittently blocked in Turkey in the last three years and certain of our SMS messages have been blocked in Saudi Arabia. We also rely on other companies to maintain reliable network systems that provide adequate speed, data capacity and security to us and our users. As the Internet continues to experience growth in the number of users, frequency of use and amount of data transmitted, the Internet infrastructure that we and our users rely on may be unable to support the demands placed upon it. The failure of the Internet infrastructure that we or our users rely on, even for a short period of time, could undermine our operations and harm our operating results.

Our new products, product features, services and initiatives and changes to existing products, services and initiatives could fail to attract users, content partners, advertisers and platform partners or generate revenue.

Our industry is subject to rapid and frequent changes in technology, evolving customer needs and the frequent introduction by our competitors of new and enhanced offerings. We must constantly assess the playing field and determine whether we need to improve or re-allocate resources amongst our existing products and services or create new ones (independently or in conjunction with third parties). Our ability to increase the size and engagement of our user base, attract content partners, advertisers and platform partners and generate revenue will depend on those decisions. We may introduce significant changes to our existing products and services or develop and introduce new and unproven products and services, including technologies with which we have little or no prior development or operating experience. For example, in 2015, we introduced Periscope, a mobile application that lets users share and experience live video from their mobile phones and in 2013, we introduced Vine, a mobile application that enabled users to create and distribute videos that are up to six seconds in length, which we discontinued in January 2017 but transitioned certain product features to the Vine Camera app. Also, we introduced new features to Twitter such as "Moments", a curated collection of Tweets, photos, videos, and Periscope broadcasts about current news stories or events; "In Case You Missed It," which surfaces Tweets a logged-in user may have missed since last accessing Twitter; expanding our character limit to 280 characters for more people around the world; and "Threads," a new feature that allows people to more easily thread Tweets together. If new or enhanced products, product features or services fail to engage users, content partners and advertisers, we may fail to attract or retain users or to generate sufficient revenue or operating profit to justify our investments, and our business and operating results could be adversely affected. In addition, we have launched and expect to continue to launch strategic initiatives that do not directly generate revenue but which we believe will enhance our attractiveness to users, content partners and advertisers, such as our investments in the health of public conversation on Twitter. In the future, we may invest in new products, product features, services and initiatives to generate revenue, but there is no guarantee these approaches will be successful. We may not be successful in future efforts to generate revenue from our new products or services. If our strategic initiatives do not enhance our ability to monetize our existing products and services, enable us to develop new approaches to monetization or meet the expectations of our users or third-party business partners, we may not be able to maintain or grow our revenue or recover any associated development costs and our operating results could be adversely affected.

If we fail to effectively manage changes to our business and operations, our business and operating results could be harmed.

Providing our products and services to our users is costly and we expect certain of our expenses to continue to increase in the future as we broaden our user base and increase user engagement, as users increase the amount of content they contribute, and as we develop and implement new features, products and services that require more infrastructure, in particular our video product features. Historically, our operating expenses, such as our research and development expenses and sales and marketing expenses, have grown each year as we have expanded our business. As a result, our costs have increased each year due to these factors and we expect to continue to incur increasing costs to support our operations. We expect to continue to invest in our infrastructure so that we can provide our products and services rapidly and reliably to users around the world, including in countries where we do not expect significant near-term monetization.

We intend to fully invest in our highest priorities, while eliminating investment in noncore areas. Finding and maintaining the appropriate balance will require significant expenditures and allocation of valuable management resources. If we fail to achieve the necessary level of efficiency in our organization, our business, operating results and financial condition would be harmed.

We focus on product innovation and user engagement rather than short-term operating results.

We encourage employees to quickly develop and help us launch new and innovative features. We focus on improving the user experience for our products and services, which includes protecting user privacy, and on developing new and improved products and services for the advertisers on our platform. For example, we are making investments in improving the health of the public conversation on Twitter, focusing on the long-term health of the platform over near-term metrics. We prioritize innovation and the experience for users and advertisers on our platform over short-term operating results. We frequently make product, product feature and service decisions that may reduce our short-term operating results if we believe that the decisions are consistent with our goals to improve the user experience and performance for advertisers, which we believe will improve our operating results over the long term. For example, we are investing in our live-streaming video experiences, and we may not successfully monetize such experiences. These decisions may not be consistent with the short-term expectations of investors and may not produce the long-term benefits that we expect, in which case our user growth and user engagement, our relationships with advertisers and our business and operating results could be harmed. In addition, our focus on the user experience may negatively impact our relationships with our existing or prospective advertisers. This could result in a loss of advertisers, which could harm our revenue and operating results.

Our business and operating results may be harmed by a disruption in our service, or by our failure to timely and effectively scale and adapt our existing technology and infrastructure.

One of the reasons people come to Twitter is for real-time information. We have experienced, and may in the future experience, service disruptions, outages and other performance problems due to a variety of factors, including infrastructure changes, human or software errors, hardware failure, capacity constraints due to an overwhelming number of people accessing our products and services simultaneously, computer viruses and denial of service or fraud or security attacks. For instance, in January 2016, we experienced a brief service outage during which Twitter.com and Twitter mobile clients were inaccessible as a result, in part, of a software misconfiguration in one of our infrastructure components. Additionally, although we are investing significantly to improve the capacity, capability and reliability of our infrastructure, we are not currently serving traffic equally through our co-located data centers that support our platform. Accordingly, in the event of a significant issue at the data center supporting most of our network traffic, some of our products and services may become inaccessible to the public or the public may experience difficulties accessing our products and services. Any disruption or failure in our infrastructure could hinder our ability to handle existing or increased traffic on our platform, which could significantly harm our business.

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As our user base expands and our users generate more content, including photos and videos hosted by Twitter, we may be required to expand and adapt our technology and infrastructure to continue to reliably store, serve and analyze this content. It may become increasingly difficult to maintain and improve the performance of our products and services, especially during peak usage times, as our products and services become more complex and our user traffic increases. In addition, because we lease our data center facilities, we cannot be assured that we will be able to expand our data center infrastructure to meet user demand in a timely manner, or on favorable economic terms. If our users are unable to access Twitter or we are not able to make information available rapidly on Twitter, users may seek other channels to obtain the information, and may not return to Twitter or use Twitter as often in the future, or at all. This would negatively impact our ability to attract users, content partners and advertisers and increase engagement of our users. We expect to continue to make significant investments to maintain and improve the capacity, capability and reliability of our infrastructure. To the extent that we do not effectively address capacity constraints, upgrade our systems as needed and continually develop our technology and infrastructure to accommodate actual and anticipated changes in technology, our business and operating results may be harmed.

If we are unable to maintain and promote our brand, our business and operating results may be harmed.

We believe that maintaining and promoting our brand is critical to expanding our base of users, content partners and advertisers. Maintaining and promoting our brand will depend largely on our ability to continue to provide useful, reliable and innovative products and services with a focus on a positive user experience, which we may not do successfully. We may introduce new features, products, services or terms of service that users, content partners, advertisers or platform partners do not like, which may negatively affect our brand. Additionally, the actions of content partners may affect our brand if users do not have a positive experience using third-party applications or websites integrated with Twitter or that make use of Twitter content. We will also continue to experience media, legislative or regulatory scrutiny of our decisions regarding user privacy, security, content and other issues, which may adversely affect our reputation and brand. For example, we previously announced our discovery of content (including some advertisements) displayed on our products that may be relevant to government investigations relating to Russian interference in the 2016 U.S. presidential election, which continues to draw media and regulatory scrutiny of our actions with respect to such content. Our brand may also be negatively affected by the actions of users that are hostile or inappropriate to other people, by users impersonating other people, by users identified as spam, by use or perceived use, directly or indirectly, of our products or services by users (including governments and government-sponsored actors) to disseminate information that may be viewed as misleading (or intended to manipulate the opinions of our users), by users introducing excessive amounts of spam on our platform, by third parties obtaining control over users’ accounts or by other security or cybersecurity incidents. For example, certain actions taken by a social media marketing company in the past to sell followers and engagement, which were in violation of our policies, but that drew media and regulatory scrutiny on us. Maintaining and enhancing our brand may require us to make substantial investments and these investments may not achieve the desired goals. If we fail to successfully promote and maintain our brand or if we incur excessive expenses in this effort, our business and operating results could be adversely affected.

Negative publicity could adversely affect our business and operating results.

We receive a high degree of media coverage around the world. Negative publicity about our company, including about the quality and reliability of our products or of content shared on our platform, changes to our products and services, our privacy and security practices (including actions taken with respect to certain users or accounts or reports regarding government surveillance), litigation, regulatory activity, the actions of our users (including actions taken by prominent users on our platform or the dissemination of information that may be viewed as misleading or as intended to manipulate the opinions of our users) or user experience with our products and services, even if inaccurate, could adversely affect our reputation and the confidence in and the use of our products and services. Such negative publicity could also have an adverse effect on the size, engagement and loyalty of our user base and result in decreased revenue, which could adversely affect our business and operating results.

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Spam and fake accounts could diminish the user experience on our platform, which could damage our reputation and deter our current and potential users from using our products and services.

“Spam” on Twitter refers to a range of abusive activities that are prohibited by our terms of service and is generally defined as unsolicited, repeated actions that negatively impact other users with the general goal of drawing user attention to a given account, site, product or idea. This includes posting large numbers of unsolicited mentions of a user, duplicate Tweets, malicious automation, misleading links (e.g., to malware or “click-jacking” pages) or other false or misleading content, and aggressively following and un-following accounts, adding users to lists, sending invitations, Retweeting and liking Tweets to inappropriately attract attention. Our terms of service also prohibit the creation of serial or bulk accounts, both manually or using automation, for disruptive or abusive purposes, such as to Tweet spam or to artificially inflate the popularity of users seeking to promote themselves on Twitter. Although we continue to invest resources to reduce spam and fake accounts on Twitter, which includes our investments to improve the health of the public conversation on Twitter, we expect spammers will continue to seek ways to act inappropriately on our platform. In addition, we expect that increases in the number of users on our platform will result in increased efforts by spammers to misuse our platform. We continuously combat spam and fake accounts, including by suspending or terminating accounts we believe to be spammers and launching algorithmic changes focused on curbing abusive activities. Our actions to combat spam and fake accounts require the diversion of significant time and focus of our engineering team from otherwise improving our products and services. If spam and fake accounts increase on Twitter, this could hurt our reputation for delivering relevant content or reduce user growth rate and user engagement and result in continuing operational cost to us.

Action by governments to restrict access to our products and services or censor Twitter content could harm our business and operating results.

Governments have sought, and may in the future seek, to censor content available through our products and services, restrict access to our products and services from their country entirely or impose other restrictions that may affect the accessibility of our products and services for an extended period of time or indefinitely. For example, domestic Internet service providers in China have blocked access to Twitter, and other countries, including Iran, Libya, Pakistan, Turkey and Syria, have intermittently restricted access to Twitter, and we believe that access to Twitter has been blocked in these countries primarily for political reasons. In addition, governments in these or other countries may seek to restrict access to our products and services based on our decisions around user content, providing user information in response to governmental requests, or other matters. In the event that access to our products and services is restricted, in whole or in part, in one or more countries or our competitors are able to successfully penetrate geographic markets that we cannot access, our ability to retain or increase our user base and user engagement may be adversely affected, and our operating results may be harmed.

If our security measures are breached, or if our products and services are subject to attacks that degrade or deny the ability of users to access our products and services, our products and services may be perceived as not being secure, users and advertisers may curtail or stop using our products and services and our business and operating results could be harmed.

Our products and services involve the storage and transmission of users’ and advertisers’ information, and security breaches expose us to a risk of loss of this information, litigation, increased security costs and potential liability. We also work with third-party vendors to process credit card payments by our customers and are subject to payment card association operating rules. We and our third-party service providers experience cyber-attacks of varying degrees on a regular basis. For example, in October 2016, we experienced a service outage as a result of several distributed denial of service attacks on our domain name service provider, Dyn.

Our products operate in conjunction with, and we are dependent upon, third-party products and components across a broad ecosystem. Additionally, the natural sunsetting of third-party products and operating systems that we use requires that our infrastructure teams reallocate time and attention to migration and updates, during which period potential security vulnerabilities could be exploited. If there is a security vulnerability (such as the Spectre and Meltdown vulnerabilities) in one of these components and if there is a security exploit targeting it, we could face increased costs, liability claims, reduced revenue, or harm to our reputation or competitive position.

Third parties may also gain access to Twitter user names and passwords without attacking Twitter directly by combining credential information from other recent breaches, using malware on victim machines that are stealing passwords for all sites, or a combination of both. In addition, some of our developers or other partners, such as third-party applications to which our users have given permission to Tweet on their behalf, may receive or store information provided by us or by our users through mobile or web applications integrated with us. If these third parties or developers fail to adopt or adhere to adequate data security practices, or in the event of a breach of their networks, our data or our users' data may be improperly accessed, used, or disclosed.

As a result, unauthorized parties have obtained, and may in the future obtain, access to our data or our users' or advertisers' data. For example, we have previously disclosed that sophisticated unknown third parties had attacked our systems and may have had access to limited information for small subset of our users. In addition, a breach of a third-party application that has been trusted by a user could result in the account issuing Tweets, Likes, Retweets, or Direct Messages without such user's knowledge or consent. Any systems failure or actual or perceived compromise of our security that results in the unauthorized access to or release of our users' or advertisers' data, such as credit card data, could significantly limit the adoption of our products and services, as well as harm our reputation and brand and, therefore, our business.

Our security measures may also be breached due to employee error, malfeasance or otherwise. Additionally, outside parties may attempt to fraudulently induce employees, users or advertisers to disclose sensitive information in order to gain access to our data or our users' or advertisers' data or accounts, or may otherwise obtain access to such data or accounts. Since our users and advertisers may use their Twitter accounts to establish and maintain online identities, unauthorized communications from Twitter accounts that have been compromised may damage their personal security, reputations and brands as well as our reputation and brand. Because the techniques used to obtain unauthorized access, disable or degrade service or sabotage systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. If an actual or perceived breach of our security occurs, the market perception of the effectiveness of our security measures could be harmed, our users and advertisers may be harmed, lose trust and confidence in us, decrease the use of our products and services or stop using our products and services in their entirety. We may also incur significant legal and financial exposure, including legal claims, higher transaction fees and regulatory fines and penalties. Any of these actions could have a material and adverse effect on our business, reputation and operating results.

Our future performance depends in part on support from our content partners and data partners.

We believe user engagement with our products and services depends in part on the availability of applications and content generated by our content or platform partners. For instance, in July 2016, we partnered with the Major League Baseball Advanced Media to deliver a free live digital video stream of weekly MLB baseball games on Twitter. If our content or platform partners focus their efforts on other platforms, the availability and quality of applications and content for our products and services may suffer. There is no assurance that our content or platform partners will continue to develop and maintain applications and content for our products and services. If our content or platform partners cease to develop and maintain applications and content for our products and services, user engagement may decline. In addition, we generate revenue from licensing our historical and real-time data to third parties. If any of these relationships are terminated or not renewed on economic and other terms that are acceptable to us, or if we are unable to enter into similar relationships in the future, our operating results could be adversely affected.

Our international operations are subject to increased challenges and risks.

We have offices around the world and our products and services are available in multiple languages. However, our ability to manage our business and conduct our operations internationally requires considerable management attention and resources and is subject to the particular challenges of supporting a rapidly growing business in an environment of multiple languages, cultures, customs, legal and regulatory systems, alternative dispute systems and commercial markets. Our international operations have required and will continue to require us to invest significant funds and other resources. Operating internationally subjects us to new risks and may increase risks that we currently face, including risks associated with:

- recruiting and retaining talented and capable employees in foreign countries and maintaining our company culture across all of our offices;
- providing our products and services and operating across a significant distance, in different languages and among different cultures, including the potential need to modify our products, services, content and features to ensure that

they are culturally relevant in different countries;

- increased competition from largely regional websites, mobile applications and services that provide real-time communications and have strong positions in particular countries, which have expanded and may continue to expand their geographic footprint;
- differing and potentially lower levels of user growth, user engagement and ad engagement in new and emerging geographies;
- different levels of advertiser demand;
- greater difficulty in monetizing our products and services;

- compliance with applicable foreign laws and regulations, including laws and regulations with respect to privacy, data security, consumer protection, fake news, hate speech, spam and content, and the risk of penalties to our users and individual members of management if our practices are deemed to be out of compliance;
- longer payment cycles in some countries;
- credit risk and higher levels of payment fraud;
- operating in jurisdictions that do not protect intellectual property rights to the same extent as the United States;
- compliance with anti-bribery laws including, without limitation, compliance with the Foreign Corrupt Practices Act and the U.K. Bribery Act, including by our business partners;
- currency exchange rate fluctuations;
- foreign exchange controls that might require significant lead time in setting up operations in certain geographic territories and might prevent us from repatriating cash earned outside the United States;
- political and economic instability in some countries;
- double taxation of our international earnings and potentially adverse tax consequences due to changes in the tax laws of the United States or the foreign jurisdictions in which we operate; and
- higher costs of doing business internationally, including increased accounting, travel, infrastructure and legal compliance costs.

If we are unable to manage the complexity of our global operations successfully, our business, financial condition and operating results could be adversely affected.

Our business is subject to complex and evolving U.S. and foreign laws and regulations. These laws and regulations are subject to change and uncertain interpretation, and could result in claims, changes to our business practices, monetary penalties, increased cost of operations or declines in user growth, user engagement or ad engagement, or otherwise harm our business.

We are subject to a variety of laws and regulations in the United States and abroad that involve matters central to our business, including privacy, security, rights of publicity, data protection, content regulation, intellectual property, competition, protection of minors, consumer protection, credit card processing and taxation. Many of these laws and regulations are still evolving and being tested in courts. As a result, it is possible that these laws and regulations may be interpreted and applied in a manner that is inconsistent from country to country and inconsistent with our current policies and practices and in ways that could harm our business, particularly in the new and rapidly evolving industry in which we operate. Additionally, the introduction of new products or services may subject us to additional laws and regulations.

From time to time, governments, regulators and others have expressed concerns about whether our products, services or practices compromise the privacy of users and others. While we strive to comply with applicable data protection laws and regulations, as well as our own posted privacy policies and other obligations we may have with respect to privacy and data protection, the failure or perceived failure to so comply may result, and in some cases has resulted, in inquiries and other proceedings or actions against us by governments, regulators or others. A number of proposals have recently been adopted or are currently pending before federal, state and foreign legislative and regulatory bodies that could significantly affect our business. For example, California recently enacted legislation, the California Consumer Privacy Act, or CCPA, that will, among other things, require covered companies to provide new disclosures to California consumers, and afford such consumers new abilities to opt-out of certain sales of personal information, when it goes into effect on January 1, 2020. Legislators have stated that they intend to propose amendments to the CCPA before it goes into effect, and it remains unclear what, if any, modifications will be made to this legislation or how it will be interpreted. Moreover, foreign data protection, privacy, consumer protection, content regulation and other laws and regulations are often more restrictive than those in the United States. In particular, the European Union, or EU, and its member states traditionally have taken broader views as to types of data that are subject to privacy and data protection, and have imposed greater legal obligations on companies in this regard. For example, the GDPR has been adopted and went into effect in May 2018. The GDPR includes more stringent operational requirements for entities processing personal information and significant penalties for non-compliance, including fines of up to €20 million or 4% of total worldwide revenue, whichever is higher. Additionally, we rely on a variety of legal bases to transfer certain personal information outside of the European Economic Area, including the EU-U.S. Privacy Shield Framework, the Swiss-U.S. Privacy Shield Framework, and EU Standard Contractual Clauses, or SCCs. The EU-U.S. Privacy Shield Framework is currently under review by regulatory authorities and it and the SCCs are both subject of legal challenges in European courts, and the absence of successor legal bases for continued data transfer could require us to create duplicative, and potentially expensive, information technology infrastructure and business operations in Europe or limit our ability to collect and use personal information collected in Europe. Any of these changes with respect to EU data protection law could disrupt our business.

Further, following a referendum in June 2016 in which voters in the United Kingdom approved an exit from the EU, the United Kingdom government has initiated a process to leave the EU (often referred to as "Brexit"). The United Kingdom recently implemented a Data Protection Bill that substantially implements the GDPR, which became law in May 2018. Brexit has created uncertainty with regard to whether the EU will view the UK data protection regulation as adequate under GDPR. Until that is resolved, the requirements for data transfers between the United Kingdom and the EU are unclear.

Similarly, there have been a number of recent legislative proposals in the United States, at both the federal and state level, that could impose new obligations in areas such as privacy and liability for copyright infringement by third parties such as various Congressional efforts to restrict the scope of the protections available to online platforms under Section 230 of the Communications Decency Act, and our current protections from liability for third-party content in the United States could decrease or change. Additionally, recent amendments to U.S. patent laws may affect the ability of companies, including us, to protect their innovations and defend against claims of patent infringement.

Additionally, we have relationships with third parties that perform a variety of functions such as payments processing, tokenization, vaulting, currency conversion, fraud prevention and data security audits. The laws and regulations related to online payments are complex, subject to change, and vary across different jurisdictions in the United States and globally. As a result, we may be required to spend significant time, effort and expense to comply with applicable laws and regulations. Any failure or claim of our failure to comply, or any failure or claim of failure by the above-mentioned third parties to comply, could increase our costs or could result in liabilities. Additionally, because Twitter accepts payment via credit cards and is certified as a PCI Level 1 service provider, we are subject to payment card association operating rules and certification requirements, including the Payment Card Industry Data Security Standard.

We currently allow use of our platform without the collection of extensive personal information, such as age. We may experience additional pressure to expand our collection of personal information in order to comply with new and additional regulatory demands or we may independently decide to do so. If we obtain such additional personal information, we may be subject to additional regulation.

Regulatory investigations and settlements could cause us to incur additional expenses or change our business practices in a manner materially adverse to our business.

We have been subject to regulatory investigations in the past, and expect to continue to be subject to regulatory scrutiny as our business grows and awareness of our brand increases. In March 2011, to resolve an investigation into various incidents, we entered into a settlement agreement with the FTC that, among other things, required us to establish an information security program designed to protect non-public consumer information and also requires that we obtain biennial independent security assessments. The obligations under the settlement agreement remain in effect until the later of March 2, 2031, or the date 20 years after the date, if any, on which the U.S. government or the FTC files a complaint in federal court alleging any violation of the order. We expect to continue to be the subject of regulatory inquiries, investigations and audits in the future by the FTC and other regulators around the world.

It is possible that a regulatory inquiry, investigation or audit might result in changes to our policies or practices, and may cause us to incur substantial costs or could result in reputational harm, prevent us from offering certain products, services, features or functionalities, cause us to incur substantial costs or require us to change our business practices in a manner materially adverse to our business. Violation of existing or future regulatory orders, settlements or consent decrees could subject us to substantial monetary fines and other penalties that could negatively affect our financial condition and operating results.

We may face lawsuits or incur liability as a result of content published or made available through our products and services.

We have faced and will continue to face claims relating to content that is published or made available through our products and services or third-party products or services. In particular, the nature of our business exposes us to claims related to defamation, intellectual property rights, rights of publicity and privacy, illegal content, misinformation, content regulation and personal injury torts. The laws relating to the liability of providers of online products or services for activities of their users remains somewhat unsettled, both within the United States and internationally. This risk may be enhanced in certain jurisdictions outside the United States where we may be less protected under local laws than we are in the United States. For example, we are subject to recently enacted legislation in Germany that may impose significant fines for failure to comply with certain content removal and disclosure obligations. In addition, the public nature of communications on our network exposes us to risks arising from the creation of impersonation accounts intended to be attributed to our users or advertisers. We could incur significant costs investigating and defending these claims. If we incur material costs or liability as a result of these occurrences, our business, financial condition and operating results could be adversely affected.

Our intellectual property rights are valuable, and any inability to protect them could reduce the value of our products, services and brand.

Our trade secrets, trademarks, copyrights, patents and other intellectual property rights are important assets. We rely on, and expect to continue to rely on, a combination of confidentiality and license agreements with our employees, consultants and third parties with whom we have relationships, as well as trademark, trade dress, domain name, copyright, trade secret and patent laws, to protect our brand and other intellectual property rights. However, various events outside of our control pose a threat to our intellectual property rights, as well as to our products, services and technologies. For example, we may fail to obtain effective intellectual property protection, or effective intellectual property protection may not be available in every country in which our products and services are available. Also, the efforts we have taken to protect our intellectual property rights may not be sufficient or effective, and any of our intellectual property rights may be challenged, which could result in them being narrowed in scope or declared invalid or unenforceable. There can be no assurance our intellectual property rights will be sufficient to protect against others offering products or services that are substantially similar to ours and compete with our business.

We rely on non-patented proprietary information and technology, such as trade secrets, confidential information, know-how and technical information. While in certain cases we have agreements in place with employees and third parties that place restrictions on the use and disclosure of this intellectual property, these agreements may be breached, or this intellectual property may otherwise be disclosed or become known to our competitors, including through hacking or theft, which could cause us to lose any competitive advantage resulting from this intellectual property.

We are pursuing registration of trademarks and domain names in the United States and in certain jurisdictions outside of the United States. Effective protection of trademarks and domain names is expensive and difficult to maintain, both in terms of application and registration costs as well as the costs of defending and enforcing those rights. We may be required to protect our rights in an increasing number of countries, a process that is expensive and may not be successful or which we may not pursue in every country in which our products and services are distributed or made available.

We are party to numerous agreements that grant licenses to third parties to use our intellectual property, including our trademarks. For example, many third parties distribute their content through Twitter, or embed Twitter content in their applications or on their websites, and make use of our trademarks in connection with their services. If the licensees of our trademarks are not using our trademarks properly, it may limit our ability to protect our trademarks and could ultimately result in our trademarks being declared invalid or unenforceable. We have a policy designed to assist third parties in the proper use of our brand, trademarks and other assets, and we have an internal team dedicated to enforcing our policy and protecting our brand. Our brand protection team routinely receives and reviews reports of improper and unauthorized use of the Twitter brand, trademarks or assets and issues takedown notices or initiates discussions with the third parties to correct the issues. However, there can be no assurance that we will be able to protect against the unauthorized use of our brand, trademarks or other assets. If we fail to maintain and enforce our trademark rights, the value of our brand could be diminished. There is also a risk that one or more of our trademarks could become generic, which could result in them being declared invalid or unenforceable. For example, there is a risk that the word "Tweet" could become so commonly used that it becomes synonymous with any short comment posted publicly on the Internet, and if this happens, we could lose protection of this trademark.

We also seek to obtain patent protection for some of our technology. We may be unable to obtain patent protection for our technologies, and our existing patents, and any patents that may be issued in the future, may not provide us with competitive advantages or distinguish our products and services from those of our competitors. In addition, any patents may be contested, circumvented, or found unenforceable or invalid, and we may not be able to prevent third parties from infringing or otherwise violating them. Effective protection of patent rights is expensive and difficult to maintain, both in terms of application and maintenance costs, as well as the costs of defending and enforcing those rights.

Our Innovator's Patent Agreement, or IPA, also can limit our ability to prevent infringement of our patents. In May 2013, we implemented the IPA, which we enter into with our employees and consultants, including our founders. The IPA, which applies to our current and future patents, allows us to assert our patents defensively. The IPA also allows us to assert our patents offensively with the permission of the inventors of the applicable patent. Under the IPA, an assertion of claims is considered for a defensive purpose if the claims are asserted: (i) against an entity that has filed, maintained, threatened or voluntarily participated in a patent infringement lawsuit against us or any of our users, affiliates, customers, suppliers or distributors; (ii) against an entity that has used its patents offensively against any other party in the past ten years, so long as the entity has not instituted the patent infringement lawsuit defensively in response to a patent litigation threat against the entity; or (iii) otherwise to deter a patent litigation threat against us or our users, affiliates, customers, suppliers or distributors. In addition, the IPA provides that the above limitations apply to any future owner or exclusive licensee of any of our patents, which could limit our ability to sell or license our patents to third parties. While we may be able to claim protection of our intellectual property under other rights, such as trade secrets or contractual obligations with our employees not to disclose or use confidential information, we may be unable to assert our patent rights against third parties that we believe are infringing our patents, even if such third parties are developing products and services that compete with our products and services. For example, in the event that an inventor of one of our patents leaves us for another company and uses our patented technology to compete with us, we would not be able to assert that patent against such other company unless the assertion of the patent right is for a defensive purpose. In such event, we may be limited in our ability to assert a patent right against another company, and instead would need to rely on trade secret protection or the contractual obligation of the inventor to us not to disclose or use our confidential information. In addition, the terms of the IPA could affect our ability to monetize our intellectual property portfolio.

Significant impairments of our intellectual property rights, and limitations on our ability to assert our intellectual property rights against others, could harm our business and our ability to compete.

Also, obtaining, maintaining and enforcing our intellectual property rights is costly and time consuming. Any increase in the unauthorized use of our intellectual property could make it more expensive to do business and harm our operating results.

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We are currently, and expect to be in the future, party to intellectual property rights claims that are expensive and time consuming to defend, and, if resolved adversely, could have a significant impact on our business, financial condition or operating results.

Companies in the internet, technology and media industries are subject to litigation based on allegations of infringement, misappropriation or other violations of intellectual property or other rights. Many companies in these industries, including many of our competitors, have substantially larger patent and intellectual property portfolios than we do, which could make us a target for litigation as we may not be able to assert counterclaims against parties that sue us for patent, or other intellectual property infringement. In addition, various “non-practicing entities” that own patents and other intellectual property rights often attempt to assert claims in order to extract value from technology companies. From time to time we receive claims from third parties which allege that we have infringed upon their intellectual property rights. Further, from time to time we may introduce new products, product features and services, including in areas where we currently do not have an offering, which could increase our exposure to patent and other intellectual property claims from competitors and non-practicing entities. In addition, although our standard terms and conditions for our Promoted Products and public APIs do not provide advertisers and platform partners with indemnification for intellectual property claims against them, some of our agreements with advertisers, content partners, platform partners and data partners require us to indemnify them for certain intellectual property claims against them, which could require us to incur considerable costs in defending such claims, and may require us to pay significant damages in the event of an adverse ruling. Such advertisers, content partners, platform partners and data partners may also discontinue use of our products, services and technologies as a result of injunctions or otherwise, which could result in loss of revenue and adversely impact our business.

We presently are involved in a number of intellectual property lawsuits, and as we face increasing competition and gain an increasingly high profile and develop new products, we expect the number of patent and other intellectual property claims against us to grow. There may be intellectual property or other rights held by others, including issued or pending patents, that cover significant aspects of our products and services, and we cannot be sure that we are not infringing or violating, and have not infringed or violated, any third-party intellectual property rights or that we will not be held to have done so or be accused of doing so in the future. Any claim or litigation alleging that we have infringed or otherwise violated intellectual property or other rights of third parties, with or without merit, and whether or not settled out of court or determined in our favor, could be time-consuming and costly to address and resolve, and could divert the time and attention of our management and technical personnel. Some of our competitors have substantially greater resources than we do and are able to sustain the costs of complex intellectual property litigation to a greater degree and for longer periods of time than we could. The outcome of any litigation is inherently uncertain, and there can be no assurances that favorable final outcomes will be obtained in all cases. In addition, plaintiffs may seek, and we may become subject to, preliminary or provisional rulings in the course of any such litigation, including potential preliminary injunctions requiring us to cease some or all of our operations. We may decide to settle such lawsuits and disputes on terms that are unfavorable to us. Similarly, if any litigation to which we are a party is resolved adversely, we may be subject to an unfavorable judgment that may not be reversed upon appeal. The terms of such a settlement or judgment may require us to cease some or all of our operations or pay substantial amounts to the other party. In addition, we may have to seek a license to continue practices found to be in violation of a third-party’s rights. If we are required, or choose to enter into royalty or licensing arrangements, such arrangements may not be available on reasonable terms, or at all, and may significantly increase our operating costs and expenses. As a result, we may also be required to develop or procure alternative non-infringing technology, which could require significant effort and expense or discontinue use of the technology. An unfavorable resolution of the disputes and litigation referred to above could adversely affect our business, financial condition and operating results.

Many of our products and services contain open source software, and we license some of our software through open source projects, which may pose particular risks to our proprietary software, products, and services in a manner that could have a negative effect on our business.

We use open source software in our products and services and will use open source software in the future. In addition, we regularly contribute software source code to open source projects under open source licenses or release internal software projects under open source licenses, and anticipate doing so in the future. The terms of many open source licenses to which we are subject have not been interpreted by U.S. or foreign courts, and there is a risk that open source software licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to provide or distribute our products or services. Additionally, we may from time to time face claims from third parties claiming ownership of, or demanding release of, the open source software or derivative works that we developed using such software, which could include our proprietary source code, or otherwise seeking to enforce the terms of the applicable open source license. These claims could result in litigation and could require us to make our software source code freely available, purchase a costly license or cease offering the implicated products or services unless and until we can re-engineer them to avoid infringement. This re-engineering process could require significant additional research and development resources, and we may not be able to complete it successfully. In addition to risks related to license requirements, use of certain open source software may pose greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or controls on the origin of software. Any of these risks could be difficult to eliminate or manage, and, if not addressed, could have a negative effect on our business, financial condition and operating results.

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

The number of our active users is calculated using internal company data that has not been independently verified. While these numbers are based on what we believe to be reasonable calculations for the applicable period of measurement, there are inherent challenges in measuring usage and user engagement across our large user base around the world. For example, there are a number of false or spam accounts in existence on our platform. We estimate that the average of false or spam accounts during the third quarter of 2018 continued to represent fewer than 5% of our MAUs during the quarter. However, this estimate is based on an internal review of a sample of accounts and we apply significant judgment in making this determination. As such, our estimation of false or spam accounts may not accurately represent the actual number of such accounts, and the actual number of false or spam accounts could be higher than we have currently estimated. We are continually seeking to improve our ability to estimate the total number of spam accounts and eliminate them from the calculation of our active users, but we otherwise treat multiple accounts held by a single person or organization as multiple users for purposes of calculating our active users because we permit people and organizations to have more than one account. Additionally, some accounts used by organizations are used by many people within the organization. As such, the calculations of our active users may not accurately reflect the actual number of people or organizations using our platform. Further, we rely on third-party SMS aggregators and mobile carriers to deliver SMS messages to certain of our users. If, however, we are notified of material deliverability issues because of, for example, infrastructure issues at the service-provider level or governmental restrictions based on content, we do not include the affected users in MAUs. We may also discover unexpected errors in our internal data that resulted from technical or other errors. For example, in 2017, we discovered that since the fourth quarter of 2014 we had included users of certain third-party applications as Twitter MAUs that should not have been considered MAUs. These third-party applications used Digits, a software development kit of our now-divested Fabric platform that allowed third-party applications to send authentication messages via SMS through our systems, which did not relate to activity on the Twitter platform. Although the change in the MAUs was relatively small in relation to our overall MAU numbers, we may face increased scrutiny as a result of the error.

Our metrics are also affected by mobile applications that automatically contact our servers for regular updates with no discernable user-initiated action involved, and this activity can cause our system to count the user associated with such a device as an active user on the day such contact occurs. The calculations of MAUs and DAUs presented in this

Quarterly Report on Form 10-Q may be affected by this activity. The impact of this automatic activity on our metrics varies by geography because mobile application usage varies in different regions of the world. In addition, our data regarding user geographic location is based on the IP address or phone number associated with the account when a user initially registered the account on Twitter. That IP address or phone number may not always accurately reflect a user’s actual location at the time of such user’s engagement on our platform.

We regularly review and may adjust our processes for calculating our internal metrics to improve their accuracy. Our total audience metrics are based on both internal metrics and data from Google Analytics, which measures unique visitors to our properties. Our measures of user growth and user engagement may differ from estimates published by third parties or from similarly-titled metrics of our competitors due to differences in methodology. If advertisers, content or platform partners or investors do not perceive our user metrics to be accurate representations of our user base or user engagement, or if we discover material inaccuracies in our user metrics, our reputation may be harmed and content partners, advertisers and platform partners may be less willing to allocate their budgets or resources to our products and services, which could negatively affect our business and operating results. Further, as our business develops, we may revise or cease reporting metrics if we determine that such metrics are no longer accurate or appropriate measures of our performance. For example, we stopped disclosing timeline views as we no longer believed that metric was helpful in measuring engagement on our platform. If investors, analysts or customers do not believe our reported measures of user engagement are sufficient or accurately reflect our business, we may receive negative publicity and our operating results may be harmed.

We rely in part on application marketplaces and Internet search engines to drive traffic to our products and services, and if we fail to appear high up in the search results or rankings, traffic to our platform could decline and our business and operating results could be adversely affected.

We rely on application marketplaces, such as Apple's App Store and Google's Play, to drive downloads of our mobile applications. In the future, Apple, Google or other operators of application marketplaces may make changes to their marketplaces which make access to our products and services more difficult or limit our use of data to provide targeted advertising. We also depend in part on Internet search engines, such as Google, Apple Spotlight, Bing and Yahoo, to drive traffic to our website. For example, when a user types an inquiry into a search engine, we rely on a high organic search result ranking of our webpages in these search results to refer the user to our website. However, our ability to maintain high organic search result rankings is not within our control. Our competitors' search engine optimization, or SEO, efforts may result in their websites receiving a higher search result page ranking than ours, or Internet search engines could revise their methodologies in a way that would adversely affect our search result rankings. If internet search engines modify their search algorithms in ways that are detrimental to us, or if our competitors' SEO efforts are more successful than ours, the growth in our user base could slow. Our website has experienced fluctuations in search result rankings in the past, and we anticipate similar fluctuations in the future. Any reduction in the number of users directed to our mobile applications or website through application marketplaces and search engines could harm our business and operating results.

More people are using devices other than personal computers to access the Internet and new platforms to produce and consume content, and we need to continue to promote the adoption of our mobile applications, and our business and operating results may be harmed if we are unable to do so.

The number of people who access the Internet through devices other than personal computers, including mobile phones, tablets, video game consoles and television set-top devices, has increased dramatically in the past few years. In the three months ended September 30, 2018, 93% of our advertising revenue was generated from mobile devices. Since we generate a majority of our advertising revenue through users on mobile devices, we must continue to drive adoption of our mobile applications. However, in emerging markets like India and Pakistan, a significant portion of users use feature phones and communicate via SMS messaging, both of which have limited functionality and neither of which may be able to take full advantage of our products and services offered on smartphone or our website or desktop applications. In addition, mobile users frequently change or upgrade their mobile devices. Our business and operating results may be harmed if our users do not install our mobile application when they change or upgrade their mobile device. Although we generate the majority of our advertising revenue from ad engagements on mobile devices, certain of our products and services, including Promoted Trends and Promoted Accounts, receive less prominence on our mobile applications than they do on our desktop applications. This has in the past reduced, and may in the future continue to reduce, the amount of revenue we are able to generate from these products and services as users increasingly access our products and services through mobile and alternative devices. In addition, as new devices and platforms are continually being released, users may consume content in a manner that is more difficult to monetize. If we are unable to develop products and services that are compatible with new devices and platforms, or if we are unable to drive continued adoption of our mobile applications, our business and operating results may be harmed.

Acquisitions, divestitures and investments could disrupt our business and harm our financial condition and operating results.

Our success will depend, in part, on our ability to expand our products, product features and services, and grow our business in response to changing technologies, user and advertiser demands, and competitive pressures. In some circumstances, we may determine to do so through the acquisition of complementary businesses and technologies rather than through internal development, including, for example, our acquisitions of Periscope, a live-streaming video mobile application, and MoPub, a mobile-focused advertising exchange. The identification of suitable acquisition candidates can be difficult, time-consuming and costly, and we may not be able to successfully complete identified acquisitions. The risks we face in connection with acquisitions include:

- diversion of management time and focus from operating our business to addressing acquisition integration challenges;
- retention of key employees from the acquired company;
- cultural challenges associated with integrating employees from the acquired company into our organization;
- integration of the acquired company's accounting, management information, human resources and other administrative systems and processes;
- the need to implement or improve controls, procedures, and policies at a business that prior to the acquisition may have lacked effective controls, procedures and policies;
- liability for activities of the acquired company before the acquisition, including intellectual property infringement claims, violations of laws, commercial disputes, tax liabilities and other known and unknown liabilities;
- unanticipated write-offs or charges; and
- litigation or other claims in connection with the acquired company, including claims from terminated employees, users, former stockholders or other third parties.

Our failure to address these risks or other problems encountered in connection with our past or future acquisitions and investments could cause us to fail to realize the anticipated benefits of these acquisitions or investments, cause us to incur unanticipated liabilities, and harm our business generally. Future acquisitions could also result in dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities, amortization expenses, incremental operating expenses or the impairment of goodwill, any of which could harm our financial condition or operating results.

We also make investments in privately-held companies in furtherance of our strategic objectives. We may not realize a return and may recognize a loss on such investments. Many of the instruments in which we invest are non-marketable at the time of our initial investment. Companies in which we invest range from early-stage companies still defining their strategic direction to more mature companies with established revenue streams and business models. The success of our investment in any company is typically dependent on the availability to the company of additional funding on favorable terms, or a liquidity event, such as a public offering or acquisition. If any of the companies in which we invest decrease in value, we could lose all or part of our investment. For example, in the year ended December 31, 2017, we recorded a $62.4 million impairment charge relating to an investment in a privately-held company.

In certain cases, we have also divested or stopped investing in certain products. For instance, in January 2017, we divested certain assets related to our Fabric platform. In 2017, we also deprecated certain of our revenue products, including TellApart, which was acquired in 2015. In these cases, we have needed to and may, in the future, need to restructure operations, terminate employees and/or incur other expenses. We may not realize the expected benefits and cost savings of these actions and our results may be harmed.

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 subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, or the Exchange Act, the Sarbanes-Oxley Act of 2002, as amended, or the Sarbanes-Oxley Act, and the listing standards of the New York Stock Exchange. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Any failure to develop or maintain effective controls, or any difficulties encountered in their implementation or improvement, could cause us to be subject to one or more investigations or enforcement actions by state or federal regulatory agencies, stockholder lawsuits or other adverse actions requiring us to incur defense costs, pay fines, settlements or judgments. Any such failures could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our 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 currency exchange rates fluctuate substantially in the future, our operating results, which are reported in U.S. dollars, could be adversely affected.

Our international operations expose us to the effects of fluctuations in currency exchange rates. We incur expenses for employee compensation and other operating expenses at our international locations in the local currency, and accept payment from advertisers or data partners in currencies other than the U.S. dollar. Since we conduct business in currencies other than U.S. dollars but report our operating results in U.S. dollars, we face exposure to fluctuations in currency exchange rates. While we enter into foreign currency forward contracts with financial institutions to reduce the risk that our earnings may be adversely affected by the impact of exchange rate fluctuations on monetary assets or liabilities denominated in currencies other than the functional currency of a subsidiary, exchange rate fluctuations between the U.S. dollar and other currencies could have a material impact on our operating results.

We may not have sufficient cash on hand or the ability to raise the funds necessary for cash settlement upon conversion of our convertible senior notes or to repurchase such notes for cash upon a fundamental change, and our future debt may contain limitations on our ability to pay cash upon conversion or repurchase of such notes.

In 2014, we issued $935.0 million in aggregate principal amount of 0.25% convertible senior notes due 2019, or the 2019 Notes, and $954.0 million in aggregate principal amount of 1.00% convertible senior notes due 2021, or the 2021 Notes, in private placements to qualified institutional buyers. In June 2018, we issued an additional $1.15 billion in aggregate principal amount of 0.25% convertible senior notes due 2024, which we refer to as the Notes when taken together with the 2019 Notes and the 2021 Notes, in a private placement to qualified institutional buyers. As of September 30, 2018, we had a total par value of $3.04 billion of outstanding Notes.

Holders of the Notes will have the right under the indenture for the Notes to require us to repurchase all or a portion of their notes upon the occurrence of a fundamental change before the relevant maturity date, in each case at a repurchase price equal to 100% of the principal amount of the Notes, plus accrued and unpaid interest, if any, to the fundamental change repurchase date. In addition, upon conversion of the Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional shares), we will be required to make cash payments in respect of the Notes being converted. Moreover, we will be required to repay the Notes in cash at their maturity, unless earlier converted or repurchased. However, we may not have sufficient available cash on hand or be able to obtain financing at the time we are required to make cash settlement upon conversion of the Notes or repurchase the Notes upon a fundamental change. In addition, our ability to repurchase the Notes or pay cash due upon conversions of the Notes may be limited by law, regulatory authority or agreements governing our future indebtedness.

Our ability to refinance the Notes, make cash payments in connection with conversions of the Notes or repurchase the Notes in the event of a fundamental change will depend on market conditions and our future performance, which is subject to economic, financial, competitive and other factors beyond our control. We also may not use the cash we have raised through the issuance of the Notes in an optimally productive and profitable manner. However, since inception we have incurred significant operating losses and we historically had not been cash flow positive and may not be in the future. As a result, we may not have enough available cash or be able to obtain financing on commercially reasonable terms or at all, at the time we are required to make repurchases of notes surrendered therefor or pay cash with respect to notes being converted or at their maturity and our level of indebtedness could adversely affect our future operations by increasing our vulnerability to adverse changes in general economic and industry conditions and by limiting or prohibiting our ability to obtain additional financing for future capital expenditures, acquisitions and general corporate and other purposes. In addition, if we are unable to make cash payments upon conversion of the Notes we would be required to issue significant amounts of our common stock, which would be dilutive to existing stockholders. If we do not have sufficient cash to repurchase the Notes following a fundamental change, we would be in default under the terms of the Notes, which could seriously harm our business. In addition, the terms of the Notes do not limit the amount of future indebtedness we may incur. If we incur significantly more debt, this could intensify the risks described above.

Our business is subject to the risks of earthquakes, fire, power outages, floods and other catastrophic events, and to interruption by man-made problems such as terrorism.

A significant natural disaster, such as an earthquake, fire, flood or significant power outage could have a material adverse impact on our business, operating results, and financial condition. Our headquarters and certain of our co-located data center facilities are located in the San Francisco Bay Area, a region known for seismic activity. Despite any precautions we may take, the occurrence of a natural disaster or other unanticipated problems at our data centers could result in lengthy interruptions in our services. In addition, acts of terrorism and other geo-political unrest could cause disruptions in our business. All of the aforementioned risks may be further increased if our disaster recovery plans prove to be inadequate. We have implemented a disaster recovery program, which allows us to move production to a back-up data center in the event of a catastrophe. Although this program is functional, we do not currently serve network traffic equally from each data center, so if our primary data center shuts down, there will be a period of time that our products or services, or certain of our products or services, will remain inaccessible to our users or our users may experience severe issues accessing our products and services.

We do not carry business interruption insurance sufficient to compensate us for the potentially significant losses, including the potential harm to our business that may result from interruptions in our ability to provide our products and services.

We may have exposure to greater than anticipated tax liabilities, which could adversely impact our operating results.

Our income tax obligations are based in part on our corporate operating structure, including the manner in which we develop, value and use our intellectual property and the scope of our international operations. The tax laws applicable to our international business activities, including the laws of the United States and other jurisdictions, are subject to interpretation. The taxing authorities of the jurisdictions in which we operate may challenge our methodologies for valuing developed technology (or other intangible assets) or intercompany arrangements, which could increase our worldwide effective tax rate and harm our financial condition and operating results. On October 5, 2015, the Organization for Economic Cooperation and Development (OECD), an international association of thirty four countries, including the U.S., Ireland, and UK, released the final reports from its Base Erosion and Profit Shifting (BEPS) Action Plans. The BEPS recommendations covered a number of issues, including country-by-country reporting, permanent establishment rules, transfer pricing rules and tax treaties. Future tax reform resulting from this development may result in changes to long-standing tax principles, which could adversely affect our effective tax rate or result in higher cash tax liabilities. We are subject to review and audit by U.S. federal and state and foreign tax authorities. Tax authorities may disagree with certain positions we have taken and any adverse outcome of such a review or audit could have a negative effect on our financial position and operating results. In addition, our future income taxes could be adversely affected by earnings being lower than anticipated in jurisdictions that have lower statutory tax rates and higher than anticipated in jurisdictions that have higher statutory tax rates, by changes in the valuation of our deferred tax assets and liabilities, or by changes in tax laws, regulations or accounting principles, as well as certain discrete items.

The 2017 Tax Cuts and Jobs Act (the “Tax Act”) contains many significant changes to the U.S. federal income tax laws, the consequences to us of which have not yet been fully determined and which could have a material impact on the value of our deferred tax assets, could result in significant one-time charges in the current or future taxable years, and could increase our future U.S. tax expense. Furthermore, changes to the taxation of undistributed foreign earnings could change our future intentions regarding reinvestment of such earnings. Greater than anticipated tax expenses, or disputes with tax authorities, could adversely impact our operating results. In addition, many countries in Europe, as well as a number of other countries and organizations, have recently proposed changes to tax laws regarding digital services that could significantly increase our tax obligations in many countries where we do business or require us to change the manner in which we operate our business.

On August 7, 2018, the Ninth Circuit Court of Appeals withdrew its July 24, 2018 opinion in Altera Corp. v. Commissioner which required related parties in an intercompany cost-sharing arrangement to share expenses related to share-based compensation and reversed the prior decision of the United States Tax Court. We will continue to monitor the potential effects of any future developments in this case and related matters. We could be negatively impacted by an adverse ruling in the case.

Uncertainties in the interpretation and application of the 2017 Tax Cuts and Jobs Act could materially affect our tax obligations and effective tax rate.

The Tax Act significantly affected U.S. tax law by changing how U.S. income tax is assessed on multinational corporations. The Tax Act requires complex computations not previously provided for in U.S. tax law and the U.S. Department of Treasury may issue regulations and interpretive guidance that may significantly impact how we will apply the law and impact our results of operations. Additionally, the application of accounting guidance for such items is currently uncertain. Further, compliance with the Tax Act and the accounting for such provisions call for the collection and preparation of information not previously required. Due to the timing of the enactment and the complexity involved in applying the provisions of the Tax Act, we have made reasonable estimates and recorded a provisional estimate of the effect of the Tax Act in our financial statements for the three and nine months ended September 30, 2018. As additional regulatory and interpretive guidance is issued, we may refine our analysis and make adjustments that differ from our current provisional amounts, which could materially affect our tax obligations and effective tax rate.

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

Under generally accepted accounting principles in the United States, or GAAP, 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, 2018, we had recorded a total of $1.27 billion of goodwill and intangible assets. An adverse change in market conditions or financial results, 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 material charges may have a material negative impact on our operating results.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2017, we had U.S. federal net operating loss carryforwards of approximately $3.02 billion and state net operating loss carryforwards of approximately $1.31 billion. As of December 31, 2017, we had federal R&D credits of $263.2 million and California credits of $203.4 million. Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an “ownership change,” the corporation’s ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes, such as research tax credits, to offset its post-change income and taxes may be limited. In general, an “ownership change” occurs if there is a cumulative change in our ownership by “5% shareholders” that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. In the event that it is determined that we have in the past experienced an ownership change, or if we experience one or more ownership changes as a result of future transactions in our stock, then we may be limited in our ability to use our net operating loss carryforwards and other tax assets to reduce taxes owed on the net taxable income that we earn. In addition, the Tax Act includes changes to the U.S. federal corporate income tax rate, and our net operating loss carryforwards and other deferred tax assets have been revalued at the newly enacted rate. Any such limitations on the ability to use our net operating loss carryforwards and other tax assets could adversely impact our business, financial condition and operating results.

We may require additional capital to support our operations or the growth of our business, and we cannot be certain that this capital will be available on reasonable terms when required, or at all.

From time to time, we may need additional financing to operate or grow our business. Our ability to obtain additional financing, if and when required, will depend on investor and lender demand, our operating performance, the condition of the capital markets and other factors, and we cannot assure you that additional financing will be available to us on favorable terms when required, or at all. If we raise additional funds through the issuance of equity, equity-linked or debt securities, those securities may have rights, preferences or privileges senior to the rights of our common stock, and our existing stockholders may experience dilution. 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 the operation or growth of our business could be significantly impaired and our operating results may be harmed.

Risks Related to Ownership of Our Common Stock

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:

- creating a classified board of directors whose members serve staggered three-year terms;
- 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 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;
- 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 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 common stock.

The market price of our common stock has been and will likely continue to be volatile, and you could lose all or part of your investment.

The market price of our common stock has been and may continue to be highly volatile in response to various factors, some of which are beyond our control. Since shares of our common stock were sold in our initial public offering in November 2013 at a price of $26.00 per share, the reported high and low sales prices of our common stock has ranged from $74.73 to $13.72 through September 30, 2018. In addition to the factors discussed in this “Risk Factors” section and elsewhere in this Quarterly Report on Form 10-Q, factors that could cause fluctuations in the market price of our common stock include the following:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the market 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 common stock by us or our stockholders;
- rumors and market speculation involving us or other companies in our industry;
- 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 or non-financial metric 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;
- actual or anticipated changes in our operating results or fluctuations in our operating results;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- our issuance of shares of our common stock, whether in connection with an acquisition or upon conversion of some or all of our outstanding Notes;
- litigation or regulatory action 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 or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- any significant change in our management; and
- general economic conditions and slow or negative growth of our markets.

In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. Any securities litigation can result in substantial costs and a diversion of our management's attention and resources. We are currently subject to securities litigation and may experience more such litigation following any future periods of volatility.

The note hedge and warrant transactions may affect the value of our common stock.

Concurrently with the issuance of the Notes, we entered into note hedge transactions with certain financial institutions, which we refer to as the option counterparties. The note hedge transactions are generally expected to reduce the potential dilution upon any conversion of the Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Notes, as the case may be. We also entered into warrant transactions with the option counterparties. However, the warrant transactions could separately have a dilutive effect to the extent that the market price of our common stock exceeds the applicable strike price of the warrants.

The option counterparties or their respective affiliates may modify their initial hedge positions by entering into or unwinding various derivatives contracts with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the Notes (and are likely to do so during any observation period related to a conversion of Notes or following any repurchase of Notes by us on any fundamental change repurchase date or otherwise). This activity could cause or avoid an increase or a decrease in the market price of our common stock.

In addition, if any such convertible note hedge and warrant transactions fail to become effective, the option counterparties or their respective affiliates may unwind their hedge positions with respect to our common stock, which could adversely affect the value of our common stock.

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 common stock adversely, the price of our common stock and trading volume could decline.

The trading market for our common stock is influenced, to some extent, by the research and reports that securities or industry analysts publish about us, our business, our industry, our market or our competitors. If any of the analysts who cover us change their recommendation regarding our common stock adversely, or provide more favorable relative recommendations about our competitors, the price of our common stock would likely decline. If any analysts who cover 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 price of our common stock or trading volume to decline.

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. In addition, our credit facility contains restrictions on payments including payments of cash dividends. Consequently, investors may need to rely on sales of our common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investment.

Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Unregistered Sales of Equity Securities

None

Issuer Purchases of Equity Securities

None

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 (numbered in accordance with Item 601 of Regulation S-K).

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference Form	File No.	Exhibit	Filing Date
10.1	Revolving Credit Agreement, dated as of August 7, 2018, by and among Twitter, Inc., the lenders from time to time party thereto and JPMorgan Chase Bank, N.A., as administrative agent	8-K	001-36164	10.1	August 10, 2018
31.1	Certification of 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.				
31.2	Certification of 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.				
32.1†	Certifications 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.				
101.INS	XBRL Instance Document.				
101.SCH	XBRL Taxonomy Schema Linkbase Document.				
101.CAL	XBRL Taxonomy Calculation Linkbase Document.				
101.DEF	XBRL Taxonomy Definition Linkbase Document.				
101.LAB	XBRL Taxonomy Labels Linkbase Document.				
101.PRE	XBRL Taxonomy Presentation Linkbase Document.				

†The certifications attached as Exhibit 32.1 that accompany this Quarterly Report on Form 10-Q, are deemed furnished and not filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of Twitter, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Quarterly Report on Form 10-Q, irrespective of any general incorporation language contained in such filing.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Quarterly Report on Form 10-Q to be signed on its behalf by the undersigned, thereunto duly authorized.

TWITTER, INC.

Date:	October 30, 2018	By:	/s/ Jack Dorsey Jack Dorsey Chief Executive Officer (Principal Executive Officer)
Date:	October 30, 2018	By:	/s/ Ned Segal Ned Segal Chief Financial Officer (Principal Financial Officer)