

BANDWIDTH INC.

FORM 10-Q (Quarterly Report)

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

FORM 10-Q

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

For the quarterly period ended September 30, 2017

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

Commission File Number: 333-220945

Bandwidth Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

56-2242657

(I.R.S. Employer
Identification Number)

900 Main Campus Drive

Raleigh, NC 27606

(Address of principal executive offices) (Zip Code)

(800) 808-5150

(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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See 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

☒ (Do not check if a smaller reporting company)

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 ☒

As of November 30, 2017, 4,197,831 shares of the registrant's Class A common stock and 13,423,489 shares of registrant's Class B common stock were outstanding, respectively.

Bandwidth Inc.
Quarterly Report on Form 10-Q

FORM 10-Q
Quarterly Period Ended September 30, 2017
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Special Note Regarding Forward-Looking Statement

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "exchange Act"). All statements contained in this Quarterly Report on Form 10-Q, other than statements of historical fact, are forward-looking statements. Forward-looking statements generally can be identified by the words "may," "will," "expect," "believe," "anticipate," "intend," "could," "would," "project," "plan," "estimate," 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 customers, including large enterprises;
- our approach to identifying, attracting and keeping new and existing customers, as well as our expectations regarding customer turnover;
- our beliefs regarding network traffic growth and other trends related to the usage of our products and services;
- our expectations regarding revenue, costs, expenses, gross margin, dollar based net retention rate, adjusted EBITDA and capital expenditures;
- our beliefs regarding the growth of our business and how that impacts our liquidity and capital resources requirements;
- the sufficiency of our cash and cash equivalents to meet our liquidity needs;
- our ability to attract, train, and retain qualified employees and key personnel;
- our beliefs regarding the expense and productivity of and competition for our sales force;
- our expectations regarding headcount;
- our ability to maintain and benefit from our corporate culture;
- our plans to further invest in and grow our business, and our ability to effectively manage our growth and associated investments;
- our ability to introduce new products and services and enhance existing products and services;
- our ability to compete successfully against current and future competitors;
- the evolution of technology affecting our products, services and markets;
- the impact of certain new accounting standards and guidance as well as the time and cost of continued compliance with existing rules and standards;
- our beliefs regarding the use of non-GAAP financial measures;
- our ability to maintain, protect and enhance our intellectual property;
- our expectations regarding litigation and other pending or potential disputes; and
- our ability to comply with modified or new laws and regulations.

These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described under the caption "Risk Factors" in Part II, Item 1A in this Quarterly Report on Form 10-Q and those discussed in other documents we file with the Securities and Exchange Commission ("SEC").

In addition, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Quarterly Report on Form 10-Q may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

The forward-looking statements contained herein are based on our current expectations and assumptions and on information available as of the date of the filing of this Quarterly Report on Form 10-Q. We undertake no obligation to revise or publicly release the results of any revision to these forward-looking statements, except as required by law. Given these risks and uncertainties, readers are cautioned not to place undue reliance on such 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.

Unless expressly indicated or the context requires otherwise, the terms "Bandwidth," "we," "us," and "our" in this document refer to Bandwidth Inc., a Delaware corporation, and, where appropriate, its wholly owned subsidiaries. All information is presented in thousands, except per share amounts, customer count and where specifically noted.

PART I — FINANCIAL INFORMATION

Item 1. Financial Statements

BANDWIDTH INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In Thousands)
(Unaudited)

	December 31, 2016	September 30, 2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 6,788	\$ 5,366
Accounts receivable, net of allowance for doubtful accounts	16,838	18,702
Prepaid expenses and other current assets	4,416	6,157
Total current assets	28,042	30,225
Property and equipment, net	11,181	12,389
Intangible assets, net	8,482	7,853
Deferred costs, non-current	1,696	4,903
Other long-term assets	1,011	1,069
Goodwill	6,867	6,867
Deferred tax asset	12,694	9,244
Total assets	<u>\$ 69,973</u>	<u>\$ 72,550</u>
Liabilities, redeemable convertible preferred stock and stockholders' deficit		
Current liabilities:		
Accounts payable	\$ 4,688	\$ 2,518
Accrued expenses and other current liabilities	14,649	15,783
Current portion of deferred revenue and advanced billings	4,032	4,710
Line of credit, current portion	5,000	—
Current portion of long-term debt	2,100	2,849
Total current liabilities	30,469	25,860
Other liabilities	611	1,431
Deferred revenue, net of current portion	1,711	2,439
Long-term debt, net of current portion	37,738	35,501
Total liabilities	70,529	65,231
Redeemable convertible preferred stock	21,818	21,818
Commitments and contingencies		
Stockholders' deficit:		
Class A and Class B common stock	12	12
Additional paid-in capital	9,356	10,661
Accumulated deficit	(31,742)	(25,172)
Total stockholders' deficit	(22,374)	(14,499)
Total liabilities, redeemable convertible preferred stock and stockholders' deficit	<u>\$ 69,973</u>	<u>\$ 72,550</u>

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

BANDWIDTH INC.

CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
(In Thousands, Except Share and per Share Amounts)
(Unaudited)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
Revenue	\$ 38,603	\$ 41,338	\$ 113,373	\$ 120,489
Cost of revenue	21,514	22,571	64,177	66,431
Gross profit	17,089	18,767	49,196	54,058
Operating expenses:				
Research and development	2,390	2,771	6,157	7,862
Sales and marketing	2,418	3,128	6,876	8,099
General and administrative	7,899	9,797	23,571	25,691
Total operating expenses	12,707	15,696	36,604	41,652
Operating income	4,382	3,071	12,592	12,406
Other expense, net	(229)	(538)	(597)	(1,950)
Income from continuing operations before income taxes	4,153	2,533	11,995	10,456
Income tax provision	(137)	(899)	(406)	(3,886)
Income from continuing operations	4,016	1,634	11,589	6,570
Loss from discontinued operations, net of income taxes	(728)	—	(3,739)	—
Net income	\$ 3,288	\$ 1,634	\$ 7,850	\$ 6,570
Total comprehensive income, net of income tax	\$ 3,288	\$ 1,634	\$ 7,850	\$ 6,570
Earnings per share:				
Income from continuing operations	\$ 4,016	\$ 1,634	\$ 11,589	\$ 6,570
Less: income allocated to participating securities	531	213	1,533	858
Income from continuing operations attributable to common stockholders	\$ 3,485	\$ 1,421	\$ 10,056	\$ 5,712
Income from continuing operations per share:				
Basic	\$ 0.30	\$ 0.12	\$ 0.86	\$ 0.48
Diluted	\$ 0.27	\$ 0.11	\$ 0.78	\$ 0.42
Net income	\$ 3,288	\$ 1,634	\$ 7,850	\$ 6,570
Less: income allocated to participating securities	435	213	1,038	858
Net income attributable to common stockholders	\$ 2,853	\$ 1,421	\$ 6,812	\$ 5,712
Net income per share:				
Basic	\$ 0.25	\$ 0.12	\$ 0.59	\$ 0.48
Diluted	\$ 0.22	\$ 0.11	\$ 0.53	\$ 0.42
Weighted average number of common shares outstanding:				
Basic	11,600,189	11,828,657	11,643,664	11,814,045
Diluted	12,810,379	13,252,737	12,828,894	13,487,649

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

BANDWIDTH INC.

CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands)
(Unaudited)

	Nine Months Ended September 30,	
	2016	2017
Operating activities		
Net income	\$ 7,850	\$ 6,570
Loss from discontinued operations, net of income taxes	3,739	—
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	4,768	4,272
Amortization of debt issuance costs	27	96
Stock-based compensation	1,099	1,102
Change in fair value of shareholders' anti-dilutive arrangement	—	689
Deferred taxes	253	3,450
Loss on disposal of property and equipment	11	55
Changes in operating assets and liabilities:		
Accounts receivable	(3,483)	(1,864)
Prepaid expenses and other assets	(1,421)	(1,470)
Deferred costs	(671)	(3,556)
Accounts payable	1,087	(2,170)
Accrued expenses and other liabilities	(1,598)	1,267
Deferred revenue and advance billings	1,066	1,405
Net cash provided by operating activities from continuing operations	12,727	9,846
Net cash used in operating activities from discontinued operations	(7,613)	—
Net cash provided by operating activities	5,114	9,846
Investing activities		
Purchase of property and equipment	(2,688)	(2,323)
Capitalized software development costs	(1,537)	(2,586)
Net cash used in investing activities from continuing operations	(4,225)	(4,909)
Net cash used in investing activities from discontinued operations	(1,005)	—
Net cash used in investing activities	(5,230)	(4,909)
Financing activities		
Borrowings on line of credit	40,200	4,000
Repayments on line of credit	(45,200)	(9,000)
Payments on capital leases	(81)	(49)
Repayments on term loan	—	(1,500)
Payment of debt issuance costs	(13)	—
Proceeds from issuances of common stock	932	174
Decrease in restricted cash	38	16
Net cash used in financing activities from continuing operations	(4,124)	(6,359)
Net decrease in cash and cash equivalents	(4,240)	(1,422)
Cash and cash equivalents, beginning of period	10,059	6,788
Cash and cash equivalents, end of period	\$ 5,819	\$ 5,366
Supplemental disclosure of cash flow information		
Cash paid during the year for interest	571	1,346
Cash paid for taxes	159	691
Supplemental disclosure of noncash financing activities		
Acquisition of equipment through capital leases	\$ 132	\$ —

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

Bandwidth Inc.

Notes to Condensed Consolidated Financial Statements

(In Thousands Except Share and per Share Amounts)

(Unaudited)

1. Organization and Description of Business

Bandwidth Inc. (together with its subsidiaries, “Bandwidth” or the “Company”) was founded in July 2000 and incorporated in Delaware on March 29, 2001. The Company’s headquarters are located in Raleigh, North Carolina. The Company is a cloud-based, software-powered communications platform-as-a-service (“CPaaS”) provider that enables enterprises to create, scale and operate voice or text communications services across any mobile application or connected device or enterprises.

The Company has two operating and reportable segments, CPaaS and Other. CPaaS revenue is derived from usage and monthly services fees charged for usage of Voice, Messaging, 911 and Phone Numbers solutions through the Company’s proprietary CPaaS software application programming interfaces. Other revenue consists of fees charged for services provided such as: SIP trunking, data resale, and a hosted Voice-over Internet Protocol (“VoIP”). The Other segment also includes revenue from traffic generated by other carriers (“CABS”), SMS registrations fees and other miscellaneous product lines.

Initial Public Offering

On November 9, 2017, the Company's Registration Statement on Form S-1 relating to the initial public offering (“IPO”) of its Class A common stock was declared effective by the SEC. Immediately prior to the closing of the initial public offering, the Company’s certificate of incorporation was amended such that (i) each share of the Company’s then-outstanding Class A voting common stock (“Old Class A common stock”) was reclassified as one share of Class B common stock (“New Class B common stock”), which has ten votes per share, (ii) each share of the Company’s then-outstanding Class B non-voting common stock (“Old Class B common stock”) was reclassified as one share of Class A common stock (“New Class A common stock”), which has one vote per share and (iii) options and warrants exercisable into the Company’s Old Class A common stock and Old Class B common stock became exercisable into New Class B common stock and New Class A common stock, respectively. In addition, immediately prior to pricing of the IPO, all shares of the Company’s then-outstanding convertible preferred stock were converted into New Class B common stock. In connection with the Company’s IPO 4,000,000 shares of the Company's New Class A common stock were sold at an initial public offering price of \$20.00 per share for proceeds of approximately \$74,400, net of underwriting discounts and commissions.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America (“GAAP”) and

applicable rules and regulations of the SEC regarding interim financial reporting. Certain information and note disclosures normally included in the financial statements prepared in accordance with GAAP have been condensed or omitted pursuant to such rules and regulations. Therefore, these condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and notes included in the final prospectus filed with the SEC pursuant to Rule 424(b) under the Securities Act on November 13, 2017 (the “Prospectus”).

The Company had no components of other comprehensive income during any of the periods presented, and as such, a separate consolidated statement of comprehensive income is not presented.

The condensed consolidated balance sheet as of December 31, 2016, included herein, was derived from the audited financial statements as of that date, but does not include all disclosures including certain notes required by GAAP on an annual reporting basis.

In the opinion of management, the accompanying unaudited condensed consolidated financial statements reflect all normal recurring adjustments necessary to present fairly the financial position, results of operations, comprehensive income and cash flows for the interim periods, but are not necessarily indicative of the results of operations to be anticipated for the full year 2017 or any future period.

Principles of Consolidation

The condensed consolidated financial statements include the accounts of Bandwidth Inc. and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of the Company’s consolidated financial statements in conformity with GAAP requires the Company to make estimates and judgments that affect the amounts reported in these financial statements and accompanying notes. Although the Company believes the estimates it uses are reasonable, due to the inherent uncertainty involved in making these estimates, actual results reported in future periods could differ from those estimates. These estimates in the condensed consolidated financial statements include, but are not limited to, allowance for doubtful accounts, recoverability of long-lived and intangible assets, customer relationship period, valuation allowances on tax assets, certain accrued expenses, and contingencies.

Concentration of Credit Risk

Financial instruments that are exposed to concentration of credit risk consist primarily of cash and cash equivalents and trade accounts receivable. Cash deposits may be in excess of insured limits. The Company believes that the financial institutions that hold its cash deposits are financially sound and, accordingly, minimal credit risk exists with respect to these balances.

With regard to customers, credit evaluation and account monitoring procedures are used to minimize the risk of loss. The Company believes that no additional credit risk beyond amounts provided for by the allowance for doubtful accounts are inherent in accounts receivable. No individual customer represented more than 10 percent of accounts receivable as of December 31, 2016 and September 30, 2017.

For the three and nine months ended September 30, 2016 and 2017, no individual customer represented more than 10 percent of the Company’s total revenue.

Significant Accounting Policies

There have been no changes to our significant accounting policies described in the Prospectus.

Recent Accounting Pronouncements Not Yet Adopted

In May 2017, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) 2017-09, *Compensation-Stock Compensation (Topic 718), Scope of Modification Accounting*, which amends the scope of modification accounting for share-based payment arrangements. The ASU provides guidance on the types of changes to terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under ASC 718, Compensation-Stock Compensation. ASU 2017-09 is effective for fiscal years and interim periods within those years beginning after December 15, 2017, and early adoption is permitted. The Company is evaluating the impact of this guidance on its consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-04, *Simplifying the Test for Goodwill Impairment*, which simplifies the accounting for goodwill impairment. The ASU requires impairment charges to be based on the first step in today’s two-step impairment test under Accounting Standards Codification (“ASC”) 350. ASU 2017-04 is effective for annual and interim impairment tests performed in periods beginning after December 15, 2021, and early adoption is permitted. The Company is evaluating the impact of this guidance on its consolidated financial statements and related disclosures.

In January 2017, the FASB issued ASU 2017-01, *Business Combinations (Topic 805) Clarifying the Definition of a Business*, which amends the guidance of FASB Accounting Standards Codification Topic 805, “Business Combinations”, adding guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions or disposals of assets or businesses. The definition of a business affects many areas of accounting including acquisitions, disposals, goodwill, and consolidation. This guidance is effective for annual and interim periods beginning after December 15, 2017, and early adoption is permitted under certain circumstances. The adoption of this standard is dependent upon future transactions.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230), Classification of Certain Cash Receipts and Cash Payments*, which clarifies how entities should classify certain cash receipts and cash payments on the statement of cash flows. The guidance also clarifies how the predominance principle should be applied when cash receipts and cash payments have aspects of more than one class of cash flows. ASU 2016-15 is effective for fiscal years beginning after December 15, 2018, and interim periods within fiscal years beginning after December 15, 2019, and early adoption is permitted. Entities will have to apply the guidance retrospectively, but if it is impracticable to do so for an issue, the amendments related to that issue would be applied prospectively. The Company is evaluating the impact of this guidance on its consolidated financial statements and related disclosures.

In February 2016, the FASB issued ASU 2016-02, *Leases*. The standard will affect all entities that lease assets and will require lessees to recognize a lease liability and a right-of-use asset for all leases (except for short-term leases that have a duration of less than one year) as of the date on which the lessor makes the underlying asset available to the lessee. For lessors, accounting for leases is substantially the same as in prior periods. ASU 2016-02 is effective for fiscal years beginning after December 15, 2019, and interim periods within annual periods beginning after December 15, 2020, and early adoption is permitted. For leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements, lessees and lessors must apply a modified retrospective transition approach. While the Company expects the adoption of this standard to result in an increase to the reported assets and liabilities, it has not yet determined the full impact that the adoption of this standard will have on its financial statements and related disclosures.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers*. This new guidance will replace most existing GAAP guidance on this topic. The new revenue recognition standard provides a unified model to determine when and how revenue is recognized. The core principle is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration for which the entity expects to be entitled in exchange for those goods or services. In August 2015, the FASB issued ASU 2015-14, *Revenue from Contracts with Customers: Deferral of the effective date*, which deferred by one year the effective date for the new revenue reporting standard for entities reporting under GAAP. In accordance with the deferral, this guidance will be effective beginning January 1, 2019. This guidance can be applied either retrospectively to each period presented or as a cumulative-effect adjustment as of the date of adoption. Early adoption is permitted beginning January 1, 2017. In December 2016, the FASB issued ASU 2016-20, *Revenue from Contracts with Customers, Technical Corrections and Improvements to Topic 606*, which made twelve additional technical corrections and improvements to the new revenue standard. In March 2016, the FASB issued ASU 2016-08, *Revenue from Contracts with Customers, Principal versus Agent Considerations (Reporting Revenue Gross versus Net)* clarifying the implementation guidance on principal versus agent considerations. Specifically, an entity is required to determine whether the nature of a promise is to provide the specified good or service itself (that is, the entity is a principal) or to arrange for the good or service to be provided to the customer by the other party (that is, the entity is an agent). The determination influences the timing and amount of revenue recognition. In April 2016, the FASB issued ASU 2016-10, *Revenue from Contracts with Customers, Identifying Performance Obligations and Licensing*, clarifying the implementation guidance on identifying performance obligations and licensing. Specifically, the amendments reduce the cost and complexity of identifying promised goods or services and improve the guidance for determining whether promises are separately identifiable. The amendments also provide implementation guidance on accounting for an entity's promise to grant a license. In May 2016, the FASB issued ASU 2016-12, *Revenue from Contracts with Customers, Narrow-Scope Improvements and Practical Expedients*, clarifying guidance on assessing collectability, presentation of sales taxes, noncash consideration, completed contracts and contract modifications. The effective date and transition requirements for ASU 2016-20, ASU 2016-08 and ASU 2016-10 are the same as the effective date and transition requirements for ASU 2014-09.

The Company is still assessing all potential impacts of the new standard on its consolidated financial statements. Given the comprehensive nature of the standard, the Company has already taken steps to begin assessing the impact on its consolidated financial results. It has completed a preliminary diagnostic, in order to highlight potential differences between current accounting policies and the new standard, and has begun drafting memos to document its accounting positions. Additionally, the Company engaged a third-party service provider to assist in its evaluation of customer contracts and to identify the attributes that could result in a different accounting treatment under ASU 2014-09. From an information technology perspective, the Company has identified a new technology solution which meets its business requirements and will be implemented to comply with ASC 2014-09. The Company has not reached a conclusion as to whether the quantitative effect of the adoption of the new standard on its revenue streams will be material. It will continue to monitor and assess the impact of the changes of the new standard and the related interpretations of its application as they become available.

3. Discontinued Operations

On April 20, 2015, the Company created a wholly owned subsidiary, Republic Wireless, Inc. (“Republic”), which was incorporated in Delaware. On November 30, 2016, the Company completed a pro-rata distribution of the common stock of Republic to its stockholders of record as of the close of business (the “Spin-Off”). Each of its stockholders received one share of Republic common stock for each share of Bandwidth common or redeemable convertible preferred stock held as of the close of business on November 30, 2016. Accordingly, the results of operations, financial condition and cash flows of Republic have been presented as discontinued operations for all periods presented in the accompanying consolidated financial statements.

The table below provides the operating results of the discontinued operations for the three and nine months ended September 30, 2016 :

	Three Months Ended September 30, 2016	Nine Months Ended September 30, 2016
Revenue	\$ 25,919	\$ 68,164
Direct costs of network services and equipment	(19,335)	(50,823)
Operating expense	(7,072)	(20,312)
Depreciation and interest	(240)	(768)
Loss from discontinued operations	<u>\$ (728)</u>	<u>\$ (3,739)</u>

4. Fair Value of Financial Instruments

The carrying amounts of cash and cash equivalents, accounts receivable, accounts payable and accrued expenses approximate fair value as of December 31, 2016 and September 30, 2017 because of the relatively short duration of these instruments. The carrying value of long-term debt approximates fair value given the interest rates are based on market rates.

The Company evaluated its financial assets and liabilities subject to fair value measurements on a recurring basis to determine the appropriate level in which to classify them for each reporting period. The following table summarizes the assets and liabilities measured at fair value as of December 31, 2016 and September 30, 2017 :

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(In Thousands Except Share and per Share Amounts)

Fair Value Measurements on a Recurring Basis December 31, 2016				
	Level 1	Level 2	Level 3	Total
Money Market Account	\$ 63	\$ —	\$ —	\$ 63
Shareholders' anti-dilutive arrangement	—	—	(184)	(184)

Fair Value Measurements on a Recurring Basis September 30, 2017				
	Level 1	Level 2	Level 3	Total
Money Market Account	\$ 64	\$ —	\$ —	\$ 64
Shareholders' anti-dilutive arrangement	—	—	(873)	(873)

There were no transfers between Levels 1, 2 or 3 during the year ended December 31, 2016 or the nine months ended September 30, 2017 .

The money market account is included in cash and cash equivalents in the consolidated balance sheets as of December 31, 2016 and September 30, 2017 .

On February 22, 2011, the Company entered into an agreement with the Principal Non-Founder Stockholders ("Principal Stockholders"). Under the terms of the agreement, the Principal Stockholders received the right ("shareholders' anti-dilutive arrangement") to purchase a pro-rata number of shares based on their ownership percentage of outstanding shares, when certain option holders exercise his or her stock option. The price at which the Principal Stockholders may purchase their pro-rata shares matches the exercise price of the option exercised. The Principal Stockholders have 90 days from the date of receipt of notice to inform the Company of their intention to purchase stock under the terms of the agreement. On a quarterly basis, the Company adjusts this liability to fair value.

The agreement terminates by one of the following events:

- closing of a "Qualified Public Offering," which is defined as one resulting in aggregate net proceeds to the Company equal to or greater than \$20 million , or
- a "true sale" as defined in the Investors' Rights Agreement.

Upon termination of the agreement, this liability would terminate.

The shareholders' anti-dilutive arrangement is included in other liabilities in the consolidated balance sheets as of December 31, 2016 and September 30, 2017 . The change in fair value of the Level 3 liability resulted in \$136 and \$689 of additional expense for the three and nine months ended September 30, 2017 , respectively, which is recorded in other expense in the condensed consolidated statements of operations and comprehensive income.

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(In Thousands Except Share and per Share Amounts)

The fair value of the shareholders' anti-dilutive arrangement is estimated using the Black-Scholes-Merton option pricing model. The significant unobservable inputs used in the fair value measurement of the shareholders' anti-dilutive arrangement are the fair value of the Company's stock and the expected term of the options. The expected term is calculated as a weighted average of the estimated time to IPO as of the measurement date and the historical average term of options subject to the agreement which were vested and expired or were exercised. Volatility is based on the historical volatility of certain public entities that are similar to the Company as the Company does not have sufficient historical transactions of its own shares on which to base expected volatility. Significant increases (decreases) in the fair value of the Company's stock price would result in a significantly larger (smaller) fair value liability measurement. Significant increases (decreases) in the expected term would result in a larger (smaller) fair value liability measurement.

5. Financial Statement Components

Accounts receivable, net of allowance for doubtful accounts consisted of the following:

	December 31, 2016	September 30, 2017
Trade accounts receivable	\$ 31,734	\$ 40,351
Unbilled accounts receivable	7,368	7,859
Allowance for doubtful accounts	(22,571)	(30,040)
Other accounts receivable	307	532
Total accounts receivable, net	<u>\$ 16,838</u>	<u>\$ 18,702</u>

Accounts receivable are stated at realizable value, net of an allowance for doubtful accounts. The allowance for doubtful accounts is based on management's assessment of the collectability of its accounts receivable. The Company regularly reviews the composition of the accounts receivable aging, historical bad debts, changes in payment patterns, customer creditworthiness and current economic trends. If the financial condition of customers were to deteriorate, resulting in their inability to make required payments, additional provisions for doubtful accounts would be required and would increase bad debt expense. Management has evaluated the collectability of trade accounts receivable and determined that allowances of approximately \$22,571 and \$30,040 for uncollectible accounts and customer balances that are disputed were required as of December 31, 2016 and September 30, 2017, respectively. The allowance for doubtful accounts primarily relates to billings for CABS services where collectability was not probable. A roll forward of the components of the allowance for doubtful accounts for the three and nine months ended September 30, 2016 and 2017 are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
<i>Allowance for doubtful accounts:</i>				
Balance, beginning of period	\$ 182	\$ 112	\$ 238	\$ 255
Charged to bad debt expense	(87)	83	45	95
Deductions(1)	(25)	(19)	(213)	(174)
Balance, end of period	<u>\$ 70</u>	<u>\$ 176</u>	<u>\$ 70</u>	<u>\$ 176</u>

(1) Write off of uncollectible accounts after all collection efforts have been exhausted.

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(In Thousands Except Share and per Share Amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
Allowance for CABS revenue:				
Balance, beginning of period	\$ 15,641	\$ 27,401	\$ 12,318	\$ 22,316
Billings deemed not probable of collection(1)	5,119	2,485	8,466	7,613
Deductions(2)	(1)	(22)	(25)	(65)
Balance, end of period	\$ 20,759	\$ 29,864	\$ 20,759	\$ 29,864

(1) Represents amounts billed but where collectibility is not probable based on customers collection experience. Amounts were charged to a contra-revenue account.

(2) Write off of uncollectible accounts after all collection efforts have been exhausted.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
CABS revenue:				
Billed	\$ 7,246	\$ 4,992	\$ 15,094	\$ 14,501
Revenue recognized	2,127	2,507	6,628	6,888
Billings deemed not probable of collection(1)	\$ 5,119	\$ 2,485	\$ 8,466	\$ 7,613

(1) Represents amounts billed but where collectibility is not probable based on customers collection experience. Amounts were charged to a contra-revenue account.

Accrued expenses and other current liabilities consisted of the following:

	December 31, 2016	September 30, 2017
Accrued expense	\$ 6,853	\$ 8,319
Accrued compensation and benefits(1)	4,373	4,656
Accrued sales, use, and telecom related taxes	2,769	2,325
Other accrued expenses	654	483
Total accrued expenses	\$ 14,649	\$ 15,783

(1) On September 1, 2017, the Company reached a separation agreement with one of its executives. The agreement resulted in a severance liability of approximately \$660 as of September 30, 2017.

6. Property and Equipment

Property and equipment, net consisted of the following:

	December 31, 2016	September 30, 2017
Furniture and fixtures	\$ 680	\$ 680
Computer and office equipment	7,539	7,525
Telecommunications equipment	13,718	16,815
Leasehold improvements	453	453
Software development costs	13,677	15,198
Automobile	10	10
Total cost	36,077	40,681
Less—accumulated depreciation	(24,896)	(28,292)
Total property and equipment, net	\$ 11,181	\$ 12,389

The Company capitalized \$612 and \$1,537 of software development costs in the three and nine months ended September 30, 2016, respectively, and \$988 and \$2,586 in the three and nine months ended September 30, 2017, respectively.

Amortization of capitalized software development costs was \$929 and \$2,766 for the three and nine months ended September 30, 2016 , respectively, and \$524 and \$1,659 for the three and nine months ended September 30, 2017 , respectively.

The Company recognized depreciation expense, which includes amortization of capitalized software development costs, as follows:

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(In Thousands Except Share and per Share Amounts)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
Cost of revenue	\$ 1,155	\$ 1,161	\$ 3,514	\$ 3,245
Research and development	15	29	64	51
Sales and marketing	6	6	15	20
General and administrative	149	45	506	327
Total depreciation expense	<u>\$ 1,325</u>	<u>\$ 1,241</u>	<u>\$ 4,099</u>	<u>\$ 3,643</u>

7. Intangible Assets

Intangible assets consisted of the following as of December 31, 2016 :

	Gross Amount	Accumulated Amortization	Net Carrying Value	Amortization Period (Years)
Customer relationships	\$ 10,396	\$ (3,032)	\$ 7,364	20
Domain name and related trademarks	2,678	(2,324)	354	3–7
Licenses, amortizable	341	(341)	—	2
Non-compete agreements	139	(139)	—	2–5
Developed technology	775	(775)	—	3
Licenses, indefinite lived	764	—	764	Indefinite
Total intangible assets, net	<u>\$ 15,093</u>	<u>\$ (6,611)</u>	<u>\$ 8,482</u>	

Intangible assets consisted of the following as of September 30, 2017 :

	Gross Amount	Accumulated Amortization	Net Carrying Value	Amortization Period (Years)
Customer relationships	\$ 10,396	\$ (3,422)	\$ 6,974	20
Domain name and related trademarks	2,678	(2,563)	115	3–7
Licenses, amortizable	341	(341)	—	2
Non-compete agreements	139	(139)	—	2–5
Developed technology	775	(775)	—	3
Licenses, indefinite lived	764	—	764	Indefinite
Total intangible assets, net	<u>\$ 15,093</u>	<u>\$ (7,240)</u>	<u>\$ 7,853</u>	

Amortization expense for definite lived intangible assets was \$222 and \$669 in the three and nine months ended September 30, 2016 , respectively, and \$210 and \$629 in the three and nine months ended September 30, 2017 , respectively. The weighted average amortization period for all definite lived intangible assets is 19 years .

Future estimated amortization expense subsequent to September 30, 2017 is as follows:

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(In Thousands Except Share and per Share Amounts)

	Amount
2017 (remaining three months)	\$ 209
2018	555
2019	520
2020	520
2021	520
Thereafter	4,765
	<u>\$ 7,089</u>

8. Debt

As of December 31, 2016 and September 30, 2017, the Company had \$40,000 and \$38,500, respectively, outstanding on the term loan and \$5,000 and \$0, respectively, on the revolving loan and was in compliance with all financial and non-financial covenants for all periods presented. The available borrowing under the Credit and Security Agreement was \$25,000 as of September 30, 2017. Beginning on March 31, 2017, the term loan is payable in consecutive equal quarterly installments with the balance payable in full on the term loan maturity date (November 3, 2021). Future payments under the term loan subsequent to September 30, 2017 are as follows:

	Amount
2017 (remaining three months)	\$ 500
2018	3,000
2019	3,000
2020	4,000
2021	28,000
	<u>\$ 38,500</u>

As of December 31, 2016 and September 30, 2017, the outstanding unamortized loan fees for the revolving loan were \$199 and \$163, respectively, and were included in other long-term assets. As of December 31, 2016 and September 30, 2017, unamortized loan fees for the term loan were \$326 and \$266, respectively, which are netted against long-term debt.

Capital Leases

The Company leases various equipment under leases accounted for as capital leases with expiration dates ranging from March 2016 through October 2018. As of December 31, 2016, cost and accumulated depreciation of the assets under capital leases recorded by the Company were \$1,951 and \$1,807, respectively. As of September 30, 2017, cost and accumulated depreciation of the assets under capital leases recorded by the Company were \$1,951 and \$1,865, respectively.

NOTES TO THE CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (Continued)
(In Thousands Except Share and per Share Amounts)

Remaining payments due on the Company's capital lease obligations as of September 30, 2017, are as follows:

	Amount
2017	\$ 25
2018	91
Less amount representing interest	—
	116
Less current maturities	99
	\$ 17

9. Segment and Geographic Information

The Company has two reportable segments CPaaS and Other. Segments are evaluated based on revenue and gross profit. The Company does not allocate operating expenses, interest expense or income tax expense to its segments. Accordingly, the Company does not report such information. Additionally, the Chief Operating Decision Maker ("CODM") does not evaluate the Company's operating segments using discrete asset information. The segments share the majority of the Company's assets. Therefore, no segment asset information is reported.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
CPaaS				
Revenue	\$ 30,249	\$ 33,397	\$ 86,900	\$ 96,591
Cost of revenue	18,197	19,247	53,576	56,394
Gross profit	\$ 12,052	\$ 14,150	\$ 33,324	\$ 40,197
Other				
Revenue	\$ 8,354	\$ 7,941	\$ 26,473	\$ 23,898
Cost of revenue	3,317	3,324	10,601	10,037
Gross profit	\$ 5,037	\$ 4,617	\$ 15,872	\$ 13,861
Consolidated				
Revenue	\$ 38,603	\$ 41,338	\$ 113,373	\$ 120,489
Cost of revenue	21,514	22,571	64,177	66,431
Gross profit	\$ 17,089	\$ 18,767	\$ 49,196	\$ 54,058

All assets were held in the United States as of December 31, 2016 and September 30, 2017.

The Company generates its revenue primarily in the United States. Revenue by geographical area is detailed in the table below (which is determined based on the customer billing address):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
United States	\$ 38,408	\$ 41,188	\$ 113,027	\$ 120,090
International	195	150	346	399
Total	<u>\$ 38,603</u>	<u>\$ 41,338</u>	<u>\$ 113,373</u>	<u>\$ 120,489</u>

10. Redeemable Convertible Preferred Stock and Stockholders' Deficit

On October 19, 2017, the Company's Board of Directors approved, and on October 23, 2017 the Company effected, a 2.50 -to-1 split of its common stock. In connection with the common stock split, each share of outstanding common stock, option to purchase common stock and warrant to purchase common stock was increased to 2.50 shares of common stock and the exercise price of each outstanding option or warrant to purchase common stock was proportionately decreased. The stock split has been reflected retrospectively in these condensed consolidated financial statements. In connection with the stock split, the conversion ratio of each share of outstanding redeemable convertible preferred stock was also adjusted such that each share of outstanding redeemable convertible preferred stock converts into 2.50 shares of Old Class A common stock after the 2.50 -to-1 split.

Redeemable Convertible Preferred Stock

As of December 31, 2016 and September 30, 2017, 710,000 shares of redeemable convertible preferred stock ("Series A preferred stock") were issued and outstanding. The holders of Series A preferred stock shall be entitled to cast the number of votes equal to the number of whole shares of common stock into which the shares of Series A preferred stock are convertible as of the record date for determining stockholders entitled to vote on such matter. Holders of Series A preferred stock shall vote together with the holders of common stock as a single class.

Each share of Series A preferred stock shall be convertible, at the option of the shareholder, into such number of fully paid and non-assessable shares of common stock as is determined by dividing the Series A original issue price by the Series A conversion price in effect at the time of the conversion. The Series A conversion price was initially equal to \$30.8358 and is subject to adjustment related to dilutive transactions. As a result of the stock split referred to above, the conversion ratio of each share of outstanding preferred stock also was adjusted subsequent to September 30, 2017, such that each share of outstanding preferred stock converts into 2.50 shares of Old Class A common stock at a conversion price of \$12.3343.

Common Stock

As of December 31, 2016 and September 30, 2017, the Company had two classes of common stock: (1) Old Class A common stock and (2) Old Class B common stock. The Old Class A common stock had one vote per share and the Old Class B common stock was non-voting.

As of December 31, 2016 and September 30, 2017, 11,779,975 and 11,811,480 shares of Old Class A common stock were issued and outstanding at \$0.001 par value per share, respectively.

As of December 31, 2016 and September 30, 2017, 18,590 and 34,840 shares of Old Class B common stock were issued and outstanding at \$0.001 par value per share, respectively.

Pursuant to the Company's second amended and restated certificate of incorporation and the effectiveness of its second amended and restated bylaws, which were effective on November 9, 2017 (i) each share of Old Class A common stock, including those shares of Old Class A common stock issued upon the conversion of then-outstanding Series A preferred stock, was reclassified as one share of New Class B common stock, with each share of New Class B common stock having ten votes per share, (ii) each share of Old Class B common stock was reclassified as one share of New Class A common stock, with each share of New Class A common stock having one vote per share. Subsequent to the effectiveness of the Company's second amended and restated certificate of incorporation, the Company's common stock consists of 120,000,000 authorized shares, par value \$0.001 per share, of which the authorized New Class A common stock will consist of 100,000,000 shares and the authorized New Class B common stock will consist of 20,000,000 shares.

On November 9, 2017, the Series A preferred stock was converted at the option of the holder into 1,775,000 shares of New Class B common stock.

Stock Purchase Warrants

As of December 31, 2016 and September 30, 2017, a total of 64,691 shares of common stock were reserved for the issuance of stock purchase warrants.

11. Stock Based Compensation*2001 and 2010 Stock Option Plans*

During 2001, the Company adopted the Bandwidth Inc. Stock Option Plan (the 2001 Plan). As of July 26, 2010, the Company adopted the 2010 Equity Compensation Plan (the 2010 Plan). On August 24, 2017, the 2010 Plan was amended to provide for a total of 3,466,275 shares of common stock reserved for issuance under the 2010 Plan.

Eligible plan participants include employees, directors and consultants. The 2001 Plan and the 2010 Plan each permit the granting of incentive stock options and non-qualified stock options.

The terms of the stock option grants are determined by the Company's Board of Directors. The Company's stock options vest based on terms in the stock option agreements, which is generally over four years. The stock options have a contractual life of ten years.

The fair value of options granted is estimated on the date of grant using the Black-Scholes-Merton option pricing model based on the assumptions in the table below:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
Expected dividend yield	0%	0%	0%	0%
Expected stock price volatility	44%	47%-49%	44%	44%-49%
Average risk-free interest rate	1.3%	1.9%	1.3%–1.6%	1.9%–2.3%
Expected life	6.2 years	6.2 years	6.2 years	6.2 years
Fair value of common stock	\$9.57	\$18.40-\$20.83	\$9.57	\$9.60-\$20.83

The Company uses the simplified method for purposes of determining the expected life of the options. The risk-free interest rate is based on the U.S. Treasury rates at the date of grant with maturity dates approximately equal to the expected life at the grant date. Volatility is based on the historical volatility of certain public entities that are similar to the Company, as the Company does not have sufficient historical transactions of its own shares on which to base expected volatility. The Company historically has not issued any dividends and does not expect to in the future.

The following summarizes the stock option activity for the periods presented:

	Number of Options Outstanding	Weighted- Average Exercise Price (per share)	Weighted- Average Remaining Contract Life (in years)	Aggregate Intrinsic value (in thousands)
Balance, December 31, 2016	3,582,241	\$ 6.54	5.12	\$ 11,049
Grants	179,922	13.79		
Exercised	(58,162)	5.27		445
Forfeited or cancelled	(41,115)	9.48		
Balance, September 30, 2017	3,662,886	\$ 6.88	4.63	\$ 51,292
Options vested and exercisable at September 30, 2017	3,159,450	\$ 6.23	4.01	\$ 46,326
Options vested and expected to vest as of September 30, 2017	3,640,526	\$ 6.85	4.60	\$ 51,092

Aggregate intrinsic value represents the total pre-tax intrinsic value, which is computed based on the difference between the option exercise price and the estimated fair value of the Company's common stock. This amount changes based on the fair value of the Company's stock.

The weighted average grant-date fair value of stock options granted was \$4.03 and \$4.04 for the three and nine months ended September 30, 2016 , and \$9.45 and \$7.48 for the three and nine months ended September 30, 2017 respectively.

The total estimated grant date fair value of options vested was \$188 and \$1,900 for the three and nine months ended September 30, 2016 , respectively, and \$443 and \$1,070 for the three and nine months ended September 30, 2017 , respectively.

The Company recognized total stock-based compensation expense in continuing operations as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
Cost of revenue	\$ 17	\$ 17	\$ 45	\$ 57
Research and development	30	38	108	100
Sales and marketing	37	54	142	124
General and administrative(1)	161	503	804	821
Total	\$ 245	\$ 612	\$ 1,099	\$ 1,102

(1) On September 1, 2017, the Company reached a separation agreement with one of its executives. The agreement resulted in a modification of the former employee's 194,234 outstanding options to purchase common stock to accelerate the vesting period and extend the exercise period, which resulted in the recognition of \$394 in additional stock compensation expense for the three months and nine months ended September 30, 2017.

The Company will recognize \$2,191 of compensation cost in the future for stock-based employee compensation over the weighted-average of 2.7 years for stock options granted before September 30, 2017 .

12. Commitments and Contingencies

Operating Leases

The Company leases office space under operating lease agreements that expire at various dates beginning in 2016 and extend through 2022 in several locations within the United States including its headquarters, which is located in Raleigh, NC. On September 26, 2016, the Company amended its operating lease agreement with one of its landlords. The 63 -month lease, which begins on April 14, 2017, provides for an additional 40,657 square feet of office space as well as an extension of the termination date for the lease of approximately 128,200 square feet of office space. The leases contain escalation clauses and various landlord concessions including a tenant improvement allowance. The Company recognizes the total minimum lease payments on a straight-line basis over the term of the lease.

Future minimum lease payments required under operating leases as of September 30, 2017 , for each of the years ending December 31, are as follows:

	Amount
2017	\$ 905
2018	3,631
2019	3,700
2020	3,838
2021	3,873
2022 and thereafter	2,018
	<u>\$ 17,965</u>

The Company incurred rent expense of \$666 and \$1,512 for the three and nine months ended September 30, 2016 , respectively, and \$1,034 and \$2,414 for the three and nine months ended September 30, 2017 , respectively, which is included in general and administrative expenses in the condensed consolidated statements of operations and comprehensive income.

In conjunction with the Spin-Off, the Company signed a Facilities Service Agreement with Republic in which the Company agreed to sub-lease 40,657 square feet of office space to Republic. The sub-lease is non-cancellable and extends to May 2022. The Company recorded a reduction of rent expense of \$251 and \$697 for the three and nine months ended September 30, 2017 , respectively, which is included in general and administrative expenses in the condensed consolidated statements of operations and comprehensive income. No sub-lease payments were received for the nine months ended September 30, 2016 due to the Spin-Off having an effective date of November 30, 2016.

Future minimum sub-lease receipts as of September 30, 2017 for each of the years ending December 31, are as follows:

	Amount
2017	\$ 251
2018	1,020
2019	1,042
2020	1,065
2021	1,089
2022 and thereafter	594
	<u>\$ 5,061</u>

Contractual Obligations

On October 25, 2015, the Company entered into an agreement with a telecommunications service provider. The service agreement requires the Company to pay a monthly recurring charge beginning on January 1, 2016 associated with the services received. The service agreement is non-cancellable and contains annual minimum commitments of \$1,200 to be fulfilled over five years or for as long as the Company continues to receive services from this vendor. In addition, the Company has other non-cancellable purchase obligations totaling \$5,308 as of September 30, 2017, which consists primarily of network equipment to be received in less than one year.

Legal Matters

The Company is involved as a defendant in various lawsuits alleging that the Company failed to bill, collect and remit certain taxes and surcharges associated with the provision of 911 services pursuant to applicable laws in various jurisdictions. In August 2016, the Company received a Civil Investigative Demand from the Consumer Protection Division of the North Carolina Department of Justice, though no formal complaint has been filed in connection with that investigation. The North Carolina Department of Justice is investigating the billing, collection and remission of certain taxes and surcharges associated with 911 service pursuant to applicable laws of the State of North Carolina.

In April 2016, the Company filed counterclaims against MCI Communications Services, Inc. d/b/a Verizon Business and Verizon Select Services, Inc. (collectively, "Verizon") in the United States District Court for the Northern District of Texas. The Company is pursuing collection of unpaid intercarrier compensation charges for providing switched access services related to the exchange of telecommunications traffic with Verizon entities across the United States. As of October 27, 2017, Verizon has asserted a counterclaim against the Company. The Company intends to contest such counterclaim vigorously. Verizon's prior September 2014 complaint against the Company and other defendants regarding intercarrier compensation charges for providing switched access services related to the exchange of telecommunications traffic has been dismissed without prejudice, but remains subject to appeal.

While the results of these legal proceedings cannot be predicted with certainty, in the opinion of management, the ultimate resolution of these matters will not have a material adverse effect on the Company's financial position or results of operations.

13. Employee Benefit Plan

The Company sponsors a defined contribution 401(k) plan which allows eligible employees to defer a portion of their compensation. The Company, at its discretion, may make matching contributions. The Company made matching contributions of \$161 and \$543 for the three and nine months ended September 30, 2016 , respectively, and \$181 and \$596 for the three and nine months ended September 30, 2017 , respectively.

14. Income Taxes

At the end of each interim reporting period, the Company determines the income tax provision by using an estimate of the annual effective tax rate, adjusted for discrete items occurring in the quarter. The Company's effective tax rate was 3.3% and 35.5% for the three months ended September 30, 2016 and September 30, 2017 , respectively, compared to 3.4% and 37.2% for the nine months ended September 30, 2016 and September 30, 2017 , respectively. The difference in tax rate for the three and nine months ended September 30, 2016 , compared to the three and nine months ended September 30, 2017 , is because the Company had a full valuation allowance for the nine months ended September 30, 2016 . The effective income tax rate reflects the effect of federal and state income taxes and the permanent impacts of differences in book and tax accounting. The Company's effective tax rate for this period is higher than the U.S. federal statutory rate of 34% primarily due to state taxes.

15. Related Parties

In connection with the Spin-Off on November 30, 2016, the Company and Republic entered into certain agreements in order to govern the ongoing relationships between the two companies after the Spin-Off and to provide for an orderly transition. The agreements include a Transition Services Agreement, Facilities Sharing Agreement, Tax Sharing Agreement, and Master Services Agreement. The equity holders of Bandwidth are comprised of substantially the same individuals and entities that are the equity owners of Republic. The Company has determined the equity owners of Republic are related parties of Bandwidth. The Company has certain involvement with Republic via ongoing services arrangements, with these ongoing services arrangements creating a variable interest in Republic. The Company assessed the relationship with Republic under guidance for variable interest entities. Because investors in Republic have disproportionate voting rights, the Company concluded that Republic is a variable interest entity ("VIE") but Bandwidth is not a primary beneficiary. The Company's maximum exposure to loss relating to this variable interest entity is limited to amounts due under the service agreements between the Company and Republic.

For the three and nine months ended September 30, 2017 , the Company received net compensation under the Transition Services Agreement of \$37 and \$548 , respectively. In addition, there was approximately \$35 due from Republic under the Transition Services Agreement as of September 30, 2017 , which was recorded within accounts receivable in the accompanying condensed consolidated balance sheet.

For the three and nine months ended September 30, 2017 , the Company received rental payments under the Facilities Sharing Agreement of \$251 and \$697 , respectively, which is included in general and administrative expenses in the condensed consolidated statements of operations and comprehensive income. No amounts were due to the Company under the Facilities Sharing Agreement as of December 31, 2016 and September 30, 2017 .

There are no amounts outstanding or payable under the Tax Sharing Agreement as of December 31, 2016 and September 30, 2017 .

During the three and nine months ended September 30, 2017 , the Company provided telecommunication service under the Master Services Agreement to Republic of \$550 and \$1,623 , respectively. The Company recognized such amounts as revenue in the accompanying condensed consolidated statement of operations and comprehensive income. In addition, there was approximately \$193 due from Republic under the Master Services Agreement as of September 30, 2017 , which was recorded within accounts receivable in the accompanying condensed consolidated balance sheet.

16. Basic and Diluted Income (Loss) per Common Share

The Company uses the two-class method to compute net income per common share, because it has issued securities, other than common stock, that contractually entitle the holders to participate in dividends and earnings. These participating securities include the Company's redeemable convertible preferred stock which have non-forfeitable rights to participate in any dividends declared on the Company's common stock. The two-class method requires earnings for the period to be allocated between common stock and participating securities based upon their respective rights to receive distributed and undistributed earnings.

Under the two-class method, for periods with net income, basic net income per common share is computed by dividing the net income attributable to common stockholders by the weighted average number of shares of common stock outstanding during the period. Net income attributable to common stockholders is computed by subtracting from net income the portion of current period earnings that the participating securities would have been entitled to receive pursuant to their dividend rights had all of the period's earnings been distributed. No such adjustment to earnings is made during periods with a net loss, as the holders of the participating securities have no obligation to fund losses.

Diluted net income (loss) per common share is computed under the two-class method by using the weighted average number of shares of common stock outstanding, plus, for periods with net income attributable to common stockholders, the potential dilutive effects of stock options and warrants. The Company analyzed the potential dilutive effect of any outstanding dilutive securities under the "if-converted" method and treasury-stock method when calculating diluted earnings per share, in which it is assumed that the outstanding participating securities convert into common stock at the beginning of the period or date of issuance, if later. The Company reports the more dilutive of the approaches (two-class or "if-converted") as its diluted net income per share during the period.

The components of basic and diluted earnings per share, or EPS, are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
<i>Income from Continuing Operations</i>				
Income from continuing operations	\$ 4,016	\$ 1,634	\$ 11,589	\$ 6,570
Less: income allocated to participating securities	531	213	1,533	858
Income from continuing operations attributable to common stockholders	\$ 3,485	\$ 1,421	\$ 10,056	\$ 5,712
Income from continuing operations per share:				
Basic	\$ 0.30	\$ 0.12	\$ 0.86	\$ 0.48
Diluted	\$ 0.27	\$ 0.11	\$ 0.78	\$ 0.42
<i>Loss from Discontinued Operations</i>				
Loss from discontinued operations	\$ (728)	\$ —	\$ (3,739)	\$ —
Less: loss allocated to participating securities	(96)	—	(495)	—
Loss from discontinued operations attributable to common stockholders	\$ (632)	\$ —	\$ (3,244)	\$ —
Loss from discontinued operations per share attributable to stockholders:				
Basic	\$ (0.05)	\$ —	\$ (0.28)	\$ —
Diluted	\$ (0.05)	\$ —	\$ (0.25)	\$ —
<i>Net income</i>				
Net income	\$ 3,288	\$ 1,634	\$ 7,850	\$ 6,570
Less: income allocated to participating securities	435	213	1,038	858
Net income attributable to common stockholders	\$ 2,853	\$ 1,421	\$ 6,812	\$ 5,712
Net income per share:				
Basic	\$ 0.25	\$ 0.12	\$ 0.59	\$ 0.48
Diluted	\$ 0.22	\$ 0.11	\$ 0.53	\$ 0.42
<i>Weighted Average Number of Common Shares Outstanding</i>				
Basic	11,600,189	11,828,657	11,643,664	11,814,045
Dilutive effect of stock options and warrants	1,210,190	1,424,080	1,185,230	1,673,604
Diluted	12,810,379	13,252,737	12,828,894	13,487,649

The following common share equivalents have been excluded from the calculation of weighted-average common shares outstanding, because the effect is anti-dilutive for the periods presented:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
<i>Anti-dilutive Disclosure</i>				
Series A redeemable convertible preferred stock outstanding	1,775,000	1,775,000	1,775,000	1,775,000
Stock options issued and outstanding	569,947	110,125	569,947	110,125

17. Subsequent Events

On October 6, 2017, the Company was notified that certain additional jurisdictions within the state of Georgia intend to initiate legal proceedings against the Company in response to allegations that the Company failed to bill, collect and remit certain taxes and surcharges associated with the provision of 911 services. On October 13, 2017, the Company signed a tolling agreement with certain additional jurisdictions regarding such allegations.

On October 19, 2017, the Company approved, and on October 23, 2017, the Company amended its Certificate of Incorporation allowing the Company to change the number of authorized shares as follows: (i) 30,000,000 shares of common stock, \$0.001 par value per share of which 25,000,000 shares were designated as Old Class A common stock, and of which 5,000,000 shares were designated as Old Class B common stock and (ii) 1,200,000 shares of preferred stock, \$0.001 par value.

On October 19, 2017, the Company's Board of Directors approved, and on October 23, 2017, the Company effected, a 2.50 -to-1 split of its common stock. In connection with the common stock split, each share of outstanding common stock, option to purchase common stock and warrant to purchase common stock was increased to 2.50 shares of common stock and the exercise price of each outstanding option or warrant to purchase common stock was proportionately decreased. The stock split has been reflected retrospectively in these consolidated financial statements. In connection with the stock split, the conversion ratio of each share of outstanding Series A preferred stock was also adjusted such that each share of outstanding Series A preferred stock converts into 2.50 shares of Old Class A common stock after the 2.50 -to-1 split.

On October 27, 2017, the United States District Court for the Northern District of Texas granted Verizon's motion to permit it to assert counterclaims against the Company in connection with the ongoing complaint related to unpaid intercarrier compensation charges.

On November 9, 2017, the Company filed a second amended and restated certificate of incorporation. As a result of this amendment, the Company's common stock consists of 120,000,000 authorized shares, par value \$0.001 per share, of which the authorized New Class A common stock consists of 100,000,000 shares and the authorized New Class B common stock consists of 20,000,000 shares.

On November 10, 2017, the Company sold 4,000,000 shares of its New Class A common stock at a public offering price of \$20.00 per share. The Company received proceeds of \$74,400 , after deducting underwriting discounts and commissions of \$5,600 . Immediately prior to the pricing of the IPO on November 9, 2017, all shares of the Company's then-outstanding Series A preferred stock converted into an aggregate of 1,775,000 shares of New Class B common stock and an aggregate of 11,811,480 shares of Old Class A common stock converted into New Class B common stock for a total of 13,586,480 shares outstanding of New Class B common stock. In addition, an aggregate of 34,840 shares of Old Class B common stock converted into New Class A common stock and warrants exercisable into shares of Old Class A common stock became exercisable into shares of New Class B common stock.

On November 10, 2017 as a result of the Company's IPO the liability related to the Shareholders' anti-dilutive arrangement was terminated under the original terms of the agreement.

On November 14, 2017, the Company paid in full its outstanding term loan of \$38,500 with the proceeds from the IPO and wrote-off the unamortized loan fees associate with the term loan. The revolving loan remains in effect.

On November 28, 2017, the Underwriters exercised their option to sell 162,991 shares of the Company's Class A common stock under the options granted to them under the Underwriting Agreement. As a result of this transaction, shares of New Class B common stock held by selling stockholders were converted into New Class A common stock. There were no additional proceeds to the Company as a result of the shares of New Class A common stock sold by the selling stockholders.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our condensed consolidated financial statements and related notes that are included elsewhere in this Quarterly Report Form 10-Q. This discussion contains forward-looking statements based upon current plans, expectations and beliefs that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under “Risk Factors” in this Quarterly Report Form 10-Q. Our fiscal year ends on December 31.

Overview

We are a leading cloud-based communications platform for enterprises in the United States. Our solutions include a broad range of software application programming interfaces ("APIs") for voice and text functionality and our owned and managed, purpose-built internet protocol ("IP") voice network, one of the largest in the nation. Our sophisticated and easy-to-use software APIs allow enterprises to enhance their products and services by incorporating advanced voice and text capabilities. Companies use our platform to more frequently and seamlessly connect with their end users, add voice calling capabilities to residential Internet of Things ("IoT") devices, offer end users new mobile application experiences and improve employee productivity, among other use cases. By owning and operating a capital-efficient, purpose-built IP voice network, we are able to offer advanced monitoring, reporting and analytics, superior customer service, dedicated operating teams, personalized support, and flexible cost structures. Over the last ten years, we have pioneered the CPaaS space through our innovation-rich culture and focus on empowering enterprises with end-to-end communications solutions.

Our voice software APIs allow enterprises to make and receive phone calls and create advanced voice experiences. Integration with our purpose-built IP voice network ensures enterprise-grade functionality and secure, high-quality connections. Our messaging software APIs provide enterprises with advanced tools to connect with end users via messaging. Our customers also use our solutions to enable 911 response capabilities, real-time provisioning and activation of phone numbers and toll-free number messaging.

We are the only CPaaS provider in the industry with our own nationwide IP voice network, which we have purpose-built for our platform. Our network is capital-efficient and custom-built to support the applications and experiences that make a difference in the way enterprises communicate. Since a communications platform is only as strong as the network that backs it, we believe our network provides a significant competitive advantage in the control, quality, pricing power and scalability of our offering. We are able to control the quality and provide the support our customers expect, as well as efficiently meet scalability and cost requirements.

For the three months ended September 30, 2017 and 2016, total revenue was \$41.3 million and \$38.6 million, respectively. CPaaS revenue for the three months ended September 30, 2017 and 2016 was \$33.4 million and \$30.2 million, respectively, representing a growth rate of 10%. Net income for the three months ended September 30, 2017 and 2016 was \$1.6 million and \$3.3 million, respectively. The number of active CPaaS customer accounts increased to 918 as of September 30, 2017, up 18% from 781 active CPaaS customer accounts as of September 30, 2016.

Key Performance Indicators

We monitor the following KPIs to help us evaluate our business, identify trends affecting our business, formulate business plans, and make strategic decisions. We believe the following KPIs are useful in evaluating our business:

	Three Months Ended September 30,	
	2016	2017
	(Dollars in thousands)	
Number of Active CPaaS customers (as of period end)	781	918
Dollar-based net retention rate	112%	105%
Net income	\$ 3,288	\$ 1,634
Adjusted EBITDA	\$ 6,201	\$ 5,180
Net Cash provided by operating activities from continuing operations	\$ 2,174	\$ 4,766
Free cash flow	\$ 1,317	\$ 2,652

Number of Active CPaaS Customer Accounts

We believe that the number of active CPaaS customer accounts is an important indicator of the growth of our business, the market acceptance of our platform and our future revenue trends. We define an active CPaaS customer account at the end of any period as an individual account, as identified by a unique account identifier, for which we have recognized at least \$100 of revenue in the last month of the period. We believe that the use of our platform by active CPaaS customer accounts at or above the \$100 per month threshold is a stronger indicator of potential future engagement than trial usage of our platform at levels below \$100 per month. A single organization may constitute multiple unique active CPaaS customer accounts if it has multiple unique account identifiers, each of which is treated as a separate active CPaaS customer account. Customers who pay after using our platform and customers that have credit balances are included in the number of active CPaaS customer accounts. Customers from our Other segment are excluded in the number of active CPaaS customer accounts, unless they are also CPaaS customers.

In the three months ending September 30, 2016 and 2017 revenue from active CPaaS customer accounts represented approximately 99% of total CPaaS revenue in each period.

Dollar-based Net Retention Rate

Our ability to drive growth and generate incremental revenue depends, in part, on our ability to maintain and grow our relationships with our existing customers that generate CPaaS revenue and seek to increase their use of our platform. We track our performance in this area by measuring the dollar-based net retention rate for our customers who generate CPaaS revenue. Our dollar-based net retention rate compares the CPaaS revenue from customers in a quarter to the same quarter in the prior year. To calculate the dollar-based net retention rate, we first identify the cohort of customers that generate CPaaS revenue and that were customers in the same quarter of the prior year. The dollar-based net retention rate is obtained by dividing the CPaaS revenue generated from that cohort in a quarter, by the CPaaS revenue generated from that same cohort in the corresponding quarter in the prior year. When we calculate dollar-based net retention rate for periods longer than one quarter, we use the average of the quarterly dollar-based net retention rates for the quarters in such period.

Our dollar-based net retention rate increases when such customers increase usage of a product, extend usage of a product to new applications or adopt a new product. Our dollar-based net retention rate decreases when such customers cease or reduce usage of a product or when we lower prices on our solutions. As our customers grow their business and extend the use of our platform, they sometimes create multiple customer accounts with us for operational or other reasons. As such, when we identify a significant customer organization (defined as a single customer organization generating more than 1% of CPaaS revenue in a quarterly reporting period) that has created a new CPaaS customer, this new customer is tied to, and CPaaS revenue from this new customer is included with, the original CPaaS customer for the purposes of calculating this metric.

Key Components of Statements of Operations

Revenue

We generate a majority of our revenue from our CPaaS segment. CPaaS revenue is derived from voice usage, phone number services, 911-enabled phone number services, messaging services and other services. We generate a portion of our CPaaS revenue from usage-based fees which include voice calling and messaging services. For the three months ended September 30, 2016 and 2017, we generated 57% and 58% of our CPaaS revenue, respectively, from usage-based fees. We also earn monthly fees from services such as phone number services and 911 access service. For the three months ended September 30, 2016 and 2017, we generated 40% of our CPaaS revenue in each period from monthly per unit fees.

The remainder of our revenue is generated by our Other segment. Other revenue is composed of revenue earned from our legacy services and indirect revenue. Other revenue as a percentage of total revenue is expected to continue to decline over time.

We recognize accounts receivable at the time the customer is invoiced. Additionally, we record a receivable and revenue for unbilled revenue if the services have been delivered and are billable in subsequent periods. Unbilled revenue made up 44% and 42% of outstanding accounts receivable, net of allowance for doubtful accounts as of September 30, 2016 and September 30, 2017, respectively.

Cost of Revenue and Gross Margin

CPaaS cost of revenue consists primarily of fees paid to other network service providers from whom we buy services such as minutes of use, phone numbers, messages, porting of customer numbers and network circuits. Cost of revenue also contains costs related to support of our IP voice network, web services, cloud infrastructure, capacity planning and management, rent for network facilities, software licenses, hardware and software maintenance fees and network engineering services. Personnel costs (including non-cash stock-based compensation expenses) associated with personnel who are responsible for the delivery of services, operation and maintenance of our communications network, and customer support as well as, third-party support agreements and depreciation of network equipment, amortization of internally developed software and gain (loss) on disposal of property and equipment are also included in cost of revenue.

Other cost of revenue consists of costs supporting non-CPaaS services including leased circuit costs paid to third party providers, internet connectivity expenses, minutes of use, direct operations, contractors, regulatory fees, surcharges and other pass-through costs and software and hardware maintenance fees.

Gross margin is calculated by subtracting cost of revenue from revenue, divided by total revenue, expressed as a percentage. Our cost of revenue and gross margin have been, and will continue to be, affected by several factors, including the timing and extent of our investments in our network, our ability to manage off-network minutes of use and messaging costs, the product mix of revenue, the timing of amortization of capitalized software development costs and the extent to which we periodically choose to pass on any cost savings to our customers in the form of lower usage prices.

Operating Expenses

The most significant components of operating expenses are personnel costs, which consist of salaries, benefits, bonuses, and stock-based compensation expenses. We also incur other non-personnel costs related to our general overhead expenses, including facility expenses, software licenses, web services, depreciation and amortization of assets unrelated to delivery of our services. We expect that our operating expenses will increase in absolute dollars.

Research and Development

R&D expenses consist primarily of personnel costs (including non-cash stock-based compensation expenses), outsourced software development and engineering service and cloud infrastructure fees for staging and development of outsourced engineering services. We capitalize the portion of our software development costs in instances where we invest resources to develop software for internal use. We plan to continue to invest in R&D to enhance current product offerings and develop new services.

Sales and Marketing

Sales and marketing expenses consist primarily of personnel costs, including commissions for our sales employees and non-cash stock-based compensation expenses. Sales and marketing expenses also include expenditures related to advertising, marketing, our brand awareness activities, sales support and professional services fees.

We focus our sales and marketing efforts on creating sales leads and establishing and promoting our brand. We plan to continue to invest in sales and marketing in order to expand our CPaaS customer base by growing headcount, driving our go-to-market strategies, building brand awareness, advertising and sponsoring additional marketing events.

General and Administrative

General and administrative expenses consist primarily of personnel costs, including stock-based compensation, for our accounting, finance, legal, human resources and administrative support personnel and executives. General and administrative expenses also include costs related to product management and reporting, customer billing and collection functions, information services, professional services fees, credit card processing fees, rent associated with our headquarters in Raleigh, North Carolina and our other offices, and depreciation and amortization. We expect that we will incur increased costs associated with supporting the growth of our business and to meet the increased compliance requirements associated with our transition to, and operation as, a public company.

Income Taxes

Our effective tax rate was 3.3% and 35.5% for the three months ended September 30, 2016 and September 30, 2017, respectively. The increase in our effective tax rate is due to the release of our valuation allowance against deferred tax assets in the fourth quarter of 2016.

Non-GAAP Financial Measures

We use adjusted EBITDA, Non-GAAP gross profit, Non-GAAP gross margin, Non-GAAP net income and free cash flow for financial and operational decision making and to evaluate period-to-period differences in our performance. Adjusted EBITDA, Non-GAAP gross profit, Non-GAAP gross margin, Non-GAAP net income and free cash flow are non-GAAP financial measures, which we believe are useful for investors in evaluating our overall financial performance. We believe these measures provide useful information about operating results, enhance the overall understanding of past financial performance and future prospects and allow for greater transparency with respect to key performance indicators used by management in its financial and operational decision making. For a reconciliation of each of the non-GAAP financial measures described below, see “Reconciliation of Non-GAAP Financial Measures.”

Adjusted EBITDA

We define adjusted EBITDA as net income or losses from continuing operations, adjusted to reflect the addition or elimination of certain income statement items including, but not limited to:

- income tax expense (benefit);
- interest expense, net;
- depreciation and amortization expense;
- stock-based compensation expense;
- impairment of intangible assets, if any;
- loss (gain) from disposal of property and equipment; and
- change in fair value of financial instruments, including any change in shareholders’ anti-dilutive arrangements.

Adjusted EBITDA is a key measure used by management to understand and evaluate our core operating performance and trends, to generate future operating plans and to make strategic decisions regarding the allocation of capital. In particular, the exclusion of certain expenses in calculating adjusted EBITDA facilitates comparisons of our operating performance on a period-to-period basis.

Non-GAAP Gross Profit and Non-GAAP Gross Margin

GAAP defines gross profit as revenue less cost of revenue. Cost of revenue includes all expenses associated with our various service offerings as more fully described under the caption “Key Components of Statement of Operations-Cost of Revenue and Gross Margin.” We define Non-GAAP gross profit as gross profit after adding back the following items:

- depreciation and amortization; and
- stock-based compensation.

We add back depreciation and amortization and stock-based compensation because they are non-cash items. We eliminate the impact of these non-cash items because we do not consider them indicative of our core operating performance. Their exclusion facilitates comparisons of our operating performance on a period-to-period basis. Therefore, we believe that showing gross margin, as Non-GAAP to remove the impact of these non-cash expenses, such as depreciation, amortization and stock-based compensation, is helpful to investors in assessing our gross profit and gross margin performance in a way that is similar to how management assesses our performance.

We calculate Non-GAAP gross margin by dividing Non-GAAP gross profit by revenue, expressed as a percentage of revenue.

Management uses Non-GAAP gross profit and Non-GAAP gross margin to evaluate operating performance and to determine resource allocation among our various service offerings. We believe that Non-GAAP gross profit and Non-GAAP gross margin provide useful information to investors and others to understand and evaluate our operating results in the same manner as our management and board of directors and allows for better comparison of financial results among our competitors. Non-GAAP gross profit and Non-GAAP gross margin may not be comparable to similarly titled measures of other companies because other companies may not calculate Non-GAAP gross profit and Non-GAAP gross margin or similarly titled measures in the same manner as we do.

Non-GAAP Net Income

We define Non-GAAP net income as net income adjusted for certain items affecting period-to-period comparability. Non-GAAP net income excludes:

- stock-based compensation;
- change in fair value of shareholders’ antidilutive arrangement;
- amortization of acquired intangible assets related to the Dash acquisition;
- impairment charges of intangibles assets , if any ;

- loss (gain) on disposal of property and equipment; and
- estimated tax impact of above adjustments.

We believe Non-GAAP net income is a meaningful measure because by removing certain non-cash and other expenses we are able to evaluate our operating results in a manner we believe is more indicative of the current period's performance. We believe the use of Non-GAAP net income may be helpful to investors because it provides consistency and comparability with past financial performance, facilitates period-to-period comparisons of results of operations and assists in comparisons with other companies, many of which may use similar non-GAAP financial information to supplement their GAAP results.

Free Cash Flow

Free cash flow represents net cash provided by (used in) operating activities from continuing operations less net cash used in investing activities from continuing operations. We believe free cash flow is a useful indicator of liquidity and provides information to management and investors about the amount of cash generated from our core operations that can be used for investing in our business. Free cash flow has certain limitations in that it does not represent the total increase or decrease in the cash balance for the period, nor does it represent the residual cash flows available for discretionary expenditures. Therefore, it is important to evaluate free cash flow along with our consolidated statements of cash flows.

Reconciliation of Non-GAAP Financial Measures

Reconciliations of the above mentioned non-GAAP financial measures to the most directly comparable GAAP financial measures are presented in the tables below (in thousands):

Non-GAAP Gross Profit and Non-GAAP Gross Margin

Consolidated

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
	(In thousands)			
Consolidated Gross Profit	\$ 17,088	\$ 18,767	\$ 49,196	\$ 54,058
Depreciation	1,155	1,161	3,513	3,245
Stock-based compensation	17	17	45	57
Non-GAAP Gross Profit	\$ 18,260	\$ 19,945	\$ 52,754	\$ 57,360
Non-GAAP Gross Margin %	47%	48%	47%	48%

By Segment

CPaaS

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
	(In thousands)			
CPaaS Gross Profit	\$ 12,052	\$ 14,150	\$ 33,324	\$ 40,197
Depreciation	1,155	1,161	3,513	3,245
Stock-based compensation	17	17	45	57
Non-GAAP Gross Profit	\$ 13,224	\$ 15,328	\$ 36,882	\$ 43,499
Non-GAAP Gross CPaaS Margin %	44%	46%	42%	45%

Other

There are no non-GAAP adjustments to gross profit for the Other segment .

Adjusted EBITDA

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
	(In thousands)			
Income from continuing operations	\$ 4,016	\$ 1,634	\$ 11,589	\$ 6,570
Income tax provision	137	899	406	3,886
Interest expense, net	229	402	597	1,261
Depreciation	1,325	1,241	4,099	3,643
Amortization	222	210	669	629
Stock-based compensation	245	612	1,099	1,102
Loss on disposal of property and equipment	27	46	11	55
Change in fair value of shareholders' anti-dilutive arrangement (1)	—	136	—	689
Adjusted EBITDA	\$ 6,201	\$ 5,180	\$ 18,470	\$ 17,835

(1) Relates to an anti-dilutive agreement which allows certain principal non-founder shareholders the ability to purchase additional common shares. See Note 4, *Fair Value of Financial Instruments*, for further explanation.

Non-GAAP Net Income

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
	(in thousands)			
Net income	\$ 3,288	\$ 1,634	\$ 7,850	\$ 6,570
Stock-based compensation	245	612	1,099	1,102
Change in fair value of shareholders' anti-dilutive arrangement (1)	—	136	—	689
Amortization related to acquisitions	130	130	390	390
Loss (gain) on disposal of property and equipment	27	46	11	55
Estimated tax effects of adjustments (2)	—	(351)	—	(852)
Non-GAAP net income	\$ 3,690	\$ 2,207	\$ 9,350	\$ 7,954
Non-GAAP net income per share				
Basic	\$ 0.28	\$ 0.16	\$ 0.70	\$ 0.59
Diluted	\$ 0.25	\$ 0.15	\$ 0.64	\$ 0.52

(1) Relates to an anti-dilutive agreement which allows certain principal non-founder shareholders the ability to purchase additional common shares. See Note 4, *Fair Value of Financial Instruments*, for further explanation.

(2) The Company had a full valuation allowance against its deferred tax assets for the nine months ended September 30, 2016 .

Free Cash Flow

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
	(In thousands)			
Net cash provided by operating activities from continuing operations	\$ 2,174	\$ 4,766	\$ 12,727	\$ 9,846
Net cash used in investing activities from continuing operations(1)	(857)	(2,114)	(4,225)	(4,909)
Free cash flow	\$ 1,317	\$ 2,652	\$ 8,502	\$ 4,937

(1) Represents the acquisition cost of property, equipment and capitalized development costs for software for internal use.

Results of Operations

Consolidated Results of Operations

The following table sets forth the consolidated statements of operations for the periods indicated.

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
	(in thousands)			
Revenue:				
CPaaS revenue	\$ 30,249	\$ 33,397	\$ 86,900	\$ 96,591
Other revenue	8,354	7,941	26,473	23,898
Total revenue	38,603	41,338	113,373	120,489
Cost of revenue:				
CPaaS cost of revenue	18,197	19,247	53,576	56,394
Other cost of revenue	3,317	3,324	10,601	10,037
Total cost of revenue	21,514	22,571	64,177	66,431
Gross profit:				
CPaaS	12,052	14,150	33,324	40,197
Other	5,037	4,617	15,872	13,861
Total gross profit	17,089	18,767	49,196	54,058
Operating expenses:				
Research and development	2,390	2,771	6,157	7,862
Sales and marketing	2,418	3,128	6,876	8,099
General and administrative	7,899	9,797	23,571	25,691
Total operating expenses	12,707	15,696	36,604	41,652
Operating income	4,382	3,071	12,592	12,406
Other expense:				
Interest expense, net	(229)	(402)	(597)	(1,261)
Change in fair value of shareholders' anti-dilutive arrangement	—	(136)	—	(689)
Income from continuing operations before income taxes	4,153	2,533	11,995	10,456
Income tax provision	(137)	(899)	(406)	(3,886)
Income from continuing operations	4,016	1,634	11,589	6,570
Loss from discontinued operations, net of income tax	(728)	—	(3,739)	—
Net income	\$ 3,288	\$ 1,634	\$ 7,850	\$ 6,570

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2016	2017	2016	2017
Revenue:				
CPaaS revenue	78 %	81 %	77 %	80 %
Other revenue	22 %	19 %	23 %	20 %
Total revenue	100 %	100 %	100 %	100 %
Cost of revenue:				
CPaaS cost of revenue	47 %	47 %	47 %	47 %
Other cost of revenue	9 %	8 %	9 %	8 %
Total cost of revenue	56 %	55 %	56 %	55 %
Gross profit:				
CPaaS	31 %	34 %	29 %	33 %
Other	13 %	11 %	14 %	12 %
Total gross profit	44 %	45 %	43 %	45 %
Operating expenses:				
Research and development	6 %	7 %	5 %	7 %
Sales and marketing	6 %	8 %	6 %	7 %
General and administrative	20 %	24 %	21 %	21 %
Total operating expenses	32 %	39 %	32 %	35 %
Operating income	11 %	7 %	11 %	10 %
Other expense:				
Interest expense, net	(1)%	(1)%	(1)%	(1)%
Change in fair value of shareholders' anti-dilutive arrangement	— %	— %	— %	(1)%
Income from continuing operations before income taxes	11 %	6 %	11 %	9 %
Income tax provision	— %	(2)%	— %	(3)%
Income from continuing operations	10 %	4 %	10 %	5 %
Loss from discontinued operations, net of income tax	(2)%	— %	(3)%	— %
Net income	9 %	4 %	7 %	5 %

Comparison of the Three Months Ended September 30, 2016 and 2017

Revenue

	Three Months Ended September 30,		Change	
	2016	2017		
	(In thousands)			
CPaaS revenue	\$ 30,249	\$ 33,397	\$ 3,148	10%
Other revenue	8,354	7,941	(413)	-5%
Total revenue	\$ 38,603	\$ 41,338	\$ 2,735	7%

For the three months ended September 30, 2017, total revenue increased by \$2.7 million, or 7%, compared to the same period in 2016. CPaaS revenue increased by \$3.1 million, or 10%, compared to the same period in 2016. As a percentage of total revenue, CPaaS revenue increased from 78% to 81% from the three months ended September 30, 2016 to September 30, 2017. The increase in CPaaS revenue was primarily attributable to an increase in the usage of all our service offerings, particularly our voice and messaging usage, which accounted for \$5.6 million of the increase in CPaaS revenue, and additionally our phone number services and 911-enabled phone number services, which accounted for \$0.6 million of the increase in CPaaS revenue. This overall increase in CPaaS revenue was partially offset by \$3.1 million related to pricing decreases that we have implemented over time with our customers in the form of lower usage prices to increase the reach and scale of our platform. The changes in usage and price in the three months ended September 30, 2017 were reflected in our dollar-based net retention rate of 105%. The decline in the dollar-based net retention rate in the three months ended September 30, 2017 was primarily due to a strategic decision to no longer service a particular customer. The increase in usage was also attributable to an 18% increase in the number of active CPaaS customer accounts, from 781 as of September 30, 2016 to 918 as of September 30, 2017. In addition, revenue from new CPaaS customers contributed \$1.5 million, or 5%, to CPaaS revenue for the three months ended September 30, 2017 compared to \$1.1 million, or 4%, to CPaaS revenue in the same period in 2016. Other revenue decreased by \$0.4 million, driven by the expected decline in legacy services of \$0.7 million, partially offset by an increase in indirect revenue of \$0.3 million.

Cost of Revenue and Gross Margin

	Three Months Ended September 30,			
	2016	2017	Change	
	(In thousands)			
Cost of revenue:				
CPaaS cost of revenue	\$ 18,197	\$ 19,247	\$ 1,050	6%
Other cost of revenue	3,317	3,324	7	0%
Total cost of revenue	21,514	22,571	1,057	5%
Gross profit	\$ 17,089	\$ 18,767	\$ 1,678	10%
Gross margin:				
CPaaS	40%	42%	2%	
Other	60%	58%	-2%	
Total gross margin	44%	45%	1%	

For the three months ended September 30, 2017, total cost of revenue increased by \$1.1 million and total gross margin increased by 1% due to improved CPaaS gross margin. CPaaS cost of revenue increased by \$1.1 million, or 6%. This increase in cost of revenue was attributable to increased customer usage and network costs, partially offset by a decline in unit costs for 911, phone numbers and voice services. CPaaS cost of revenue increases were comprised of \$0.5 million increase in cost of voice minutes, \$0.4 million increase in network costs, \$0.1 million increase in cost of phone numbers, and a \$0.1 million increase in cost of messaging. CPaaS gross margin increased from 40% for the three months ended September 30, 2016 to 42% for the three months ended September 30, 2017. Excluding the impact of depreciation of \$1.2 million for the three months ended September 30, 2016 and depreciation of \$1.2 million for the three months ended September 30, 2017, CPaaS Non-GAAP gross margin would have been 44% and 46% for the three months ended September 30, 2016 and 2017, respectively, and total Non-GAAP gross margin would have been 47% and 48% for the three months ended September 30, 2016 and 2017, respectively.

Other cost of revenue did not significantly change. Other gross margin decreased by 2% due to legacy revenue churn.

Operating Expenses

	Three Months Ended September 30,		Change	
	2016	2017		
	(In thousands)			
Research and development	\$ 2,390	\$ 2,771	\$ 381	16%
Sales and marketing	2,418	3,128	710	29%
General and administrative	7,899	9,797	1,898	24%
Total operating expenses	\$ 12,707	\$ 15,696	\$ 2,989	24%

For the three months ended September 30, 2017, research and development expenses increased by \$0.4 million, or 16%, compared to the same period in 2016. This increase is due primarily to an increase in research and development headcount.

For the three months ended September 30, 2017, sales and marketing expenses increased by \$0.7 million, compared to the same period in 2016, also due primarily to additional headcount in the sales organization to accelerate CPaaS revenue growth.

General and administrative expenses increased by \$1.9 million for the three months ended September 30, 2017 compared to the same period in 2016. This increase was partially due to an increase in headcount costs due to severance related to a separation agreement with one of the company's executives. The other portion of the increase was due to increased non-headcount expenses for hosted software costs, increased bad debt expense, and increased taxes.

Interest Expense, Net

For the three months ended September 30, 2017 interest expense increased by \$0.2 million, compared to the same period in 2016 due to an increased balance outstanding under our credit facility that we entered into in November 2016.

Income Tax Expense

For the three months ended September 30, 2017 income tax expense increased by \$0.8 million compared to the same period in 2016 due to the valuation allowance against deferred tax assets which was released in December 2016 subsequent to the Spin-Off. The effective tax rate for the three months ended September 30, 2017 was 35.5% compared to 3.3% for the three months ended September 30, 2016.

Loss from Discontinued Operations, Net of Income Taxes

For the three months ended September 30, 2017 loss from discontinued operations decreased by \$0.7 million, compared to the same period in 2016. The Spin-Off occurred on November 30, 2016.

Comparison of the Nine Months Ended September 30, 2016 and 2017

Revenue

	Nine Months Ended September 30,		Change	
	2016	2017		
	(In thousands)			
CPaaS revenue	\$ 86,900	\$ 96,591	\$ 9,691	11%
Other revenue	26,473	23,898	(2,575)	-10%
Total revenue	\$ 113,373	\$ 120,489	\$ 7,116	6%

For the nine months ended September 30, 2017, total revenue increased by \$7.1 million, or 6%, compared to the same period in 2016. CPaaS revenue increased by \$9.7 million, or 11%, compared to the same period in 2016. As a percentage of total revenue, CPaaS revenue increased from 77% to 80% from the nine months ended September 30, 2016 to September 30, 2017. The increase in CPaaS revenue was primarily attributable to an increase in the usage of all our service offerings, particularly our voice and messaging usage, which accounted for \$13.0 million of the increase in CPaaS revenue, and our phone number services and 911-enabled phone number services, which accounted for \$2.4 million of the increase in CPaaS revenue. This overall increase in CPaaS revenue was partially offset by \$5.7 million related to pricing decreases that we have implemented over time with our customers in the form of lower usage prices to increase the reach and scale of our platform. The changes in usage and price in the nine months ended September 30, 2017 were reflected in our dollar-based net retention rate of 106%. The increase in usage was also attributable to an 18% increase in the number of active CPaaS customer accounts, from 781 as of September 30, 2016 to 918 as of September 30, 2017. In addition, revenue from new CPaaS customers contributed \$4.2 million, or 5%, to CPaaS revenue for the nine months ended September 30, 2017 compared to \$3.2 million, or 4%, to CPaaS revenue in the same period in 2016. Other revenue decreased by \$2.6 million, or 10%, due to declines in our legacy services of \$2.3 million and decreases in indirect revenue of \$0.3 million.

Cost of Revenue and Gross Margin

	Nine Months Ended September 30,			
	2016	2017	Change	
	(In thousands)			
Cost of revenue:				
CPaaS cost of revenue	\$ 53,576	\$ 56,394	\$ 2,818	5%
Other cost of revenue	10,601	10,037	(564)	-5%
Total cost of revenue	64,177	66,431	2,254	4%
Gross profit	\$ 49,196	\$ 54,058	\$ 4,862	10%
Gross margin:				
CPaaS	38%	42%	4%	
Other	60%	58%	-2%	
Total gross margin	43%	45%	2%	

For the nine months ended September 30, 2017, total gross profit increased by \$4.9 million, or 10%, compared to the same period in 2016. Total gross margin increased from 43% to 45% during the same period. For the nine months ended September 30, 2017 CPaaS cost of revenue increased by \$2.8 million, or 5% compared to the same period in 2016. CPaaS cost of revenue increased primarily due to an increase in voice usage costs of \$0.9 million due to growth in minutes used by customers, partially offset by a decrease in the cost per minute due to reduction in costs from vendors. Additional increases were due to network costs, messaging, phone numbers and 911 services which increased \$0.7 million, \$0.6 million, \$0.5 million and \$0.1 million respectively. For the nine months ended September 30, 2017 CPaaS gross margin increased from 38% to 42% compared to the same period in 2016. Excluding depreciation and stock-based compensation of \$3.6 million and \$3.3 million for the nine months ended September 30, 2016 and 2017, respectively, CPaaS Non-GAAP gross margin would have been 42% and 45% for the nine months ended September 30, 2016 and 2017, respectively, and total Non-GAAP gross margin would have been 47% and 48% for the same periods.

Other cost of revenue decreased by \$0.6 million, which was due to a \$1.1 million decrease as a result of churn in legacy services, partially offset by a \$0.5 million increase in cost of indirect revenue related to new required messaging and toll-free number registration fees and cost of carrier access revenue.

Operating Expenses

	Nine Months Ended September 30,		Change	
	2016	2017		
	(In thousands)			
Research and development	\$ 6,157	\$ 7,862	\$ 1,705	28%
Sales and marketing	6,876	8,099	1,223	18%
General and administrative	23,571	25,691	2,120	9%
Total operating expenses	\$ 36,604	\$ 41,652	\$ 5,048	14%

For the nine months ended September 30, 2017, Research and development expenses increased by \$1.7 million, or 28%, compared to the same period in 2016. This increase was due to increased headcount.

For the nine months ended September 30, 2017, sales and marketing expenses increased by \$1.2 million, or 18%, compared to the same period in 2016 due to an overall increase in sales headcount.

General and administrative expenses increased by \$2.1 million for the nine months ended September 30, 2017, or 9%, compared to the same period in 2016. This increase was partially due to an increase in headcount costs due to severance related to a separation agreement with one of the company's executives. The other portion of the increase was due to increased non-headcount expenses for hosted software costs, professional expenses related to public company readiness and increased facilities expense. These increases were partially offset by a decrease in salary expense.

Interest Expense, Net

For the nine months ended September 30, 2017, interest expense increased by \$0.7 million compared to the same period in 2016 due to an increased balance outstanding of our credit facility that we entered into in November 2016.

Income Tax Expense

For the nine months ended September 30, 2017 , income tax expense increased by \$3.5 million compared to the same period in 2016 . The effective tax rate for the nine months ended September 30, 2017 was 37.2% compared to 3.4% for the nine months ended September 30, 2016 . During the nine months ended September 30, 2016 , the Company had a full valuation against its deferred tax assets. The valuation allowance was released in December 2016 subsequent to the Spin-Off.

Loss from Discontinued Operations, Net of Income Tax

For the nine months ended September 30, 2017 , loss from discontinued operations decreased by \$3.7 million compared to the same period in 2016 . The Spin-Off of Republic took place on November 30, 2016.

Statement of Cash Flows

The following table summarizes our cash flows from continuing operations for the periods indicated:

	Nine Months Ended September 30,	
	2016	2017
	(In thousands)	
Net cash provided by operating activities from continuing operations	\$ 12,727	\$ 9,846
Net cash used by investing activities from continuing operations	(4,225)	(4,909)
Net cash used in financing activities from continuing operations	(4,124)	(6,359)
Net increase (decrease) in cash and cash equivalents	\$ 4,378	\$ (1,422)

Cash Flows from Operating Activities

For the nine months ended September 30, 2017 , cash provided by operating activities from continuing operations was \$9.8 million , which primarily consisted of net income of \$6.6 million , depreciation and amortization of \$4.3 million , deferred taxes of \$3.5 million , change in fair value of shareholders' anti-dilutive arrangement of \$0.7 million and stock-based compensation expenses of \$1.1 million , partially offset by a decrease in working capital of \$6.4 million . Working capital consisted primarily of increases in deferred costs of \$3.6 million , mainly due to incurred IPO costs, accounts receivable of \$1.9 million , and prepaid expenses of \$1.5 million , and a \$2.2 million decrease in accounts payable offset by increases in accrued expenses and deferred revenue of \$2.7 million .

For the nine months ended September 30, 2016 , cash provided by operating activities from continuing operations was \$12.7 million , which primarily consisted of net income from continuing operations of \$11.6 million , depreciation and amortization of \$4.8 million and \$1.1 million of stock-based compensation expenses, partially offset by a decrease in working capital of \$5.0 million . Working capital consisted primarily of increases in accounts receivable of \$3.5 million , accrued expenses of \$1.6 million , prepaid expenses of \$1.4 million , and deferred costs of \$0.7 million , offset by increases in accounts payable of \$1.1 million and deferred revenue of \$1.1 million .

We have an ongoing dispute and litigation with MCI Communications Services, Inc. d/b/a Verizon Business and Verizon Select Services, Inc. (collectively, "Verizon"), which is a carrier access billing ("CABS") customer. Billings to Verizon were approximately \$7.8 million and \$7.2 million for the nine months ended September 30, 2016 and 2017 , respectively. We recognize revenue for this customer only to the extent to which payments have been made and/or billings are not disputed. These outstanding amounts represent disputed and unpaid billings and are fully reserved within our allowance for doubtful accounts. We have not recognized revenue related to the outstanding and disputed balances.

Cash Flows from Investing Activities

For the nine months ended September 30, 2017 , cash used in investing activities from continuing operations was \$4.9 million from the purchase of property, plant and equipment and capitalized internally developed software costs.

For the nine months ended September 30, 2016 , cash used in investing activities from continuing operations was \$4.2 million used to purchase property, plant and equipment and capitalized internally developed software costs.

Cash Flows from Financing Activities

For the nine months ended September 30, 2017 , cash used in financing activities from continuing operations was \$6.4 million consisting primarily of net repayments of \$5.0 million on our line of credit and \$1.5 million in payments on our term loan.

For the nine months ended September 30, 2016 , cash used in financing activities from continuing operations was \$4.1 million consisting primarily of net repayments of \$5.0 million on our line of credit, partially offset by \$0.9 million in proceeds from issuance of common stock.

Debt

As of September 30, 2017 , the Company has \$38.5 million outstanding on the term loan and no amount outstanding on the revolving loan. The Company was in compliance with all financial covenants. The availability under the Credit and Security Agreement was \$25.0 million as of September 30, 2017 . Beginning on March 31, 2017, the term loan is payable in consecutive equal quarterly payment installments with the balance payable in full on the maturity date (November 3, 2021).

Contractual Obligations and Other Commitments

The following table summarizes our noncancellable contractual obligations as of September 30, 2017 :

	Total	Less Than 1 Year	1 to 2 Years	3 to 5 Years	More than 5 years
As of September 30, 2017:					
Term loan	\$ 38,500	\$ 2,750	\$ 6,750	\$ 29,000	\$ —
Interest expense ⁽¹⁾	4,274	1,170	2,910	194	—
Operating leases ⁽²⁾	17,965	905	3,631	11,411	2,018
Capital leases	116	25	91	—	—
Purchase obligations ⁽³⁾	5,308	3,880	1,190	238	—
Total	\$ 66,163	\$ 8,730	\$ 14,572	\$ 40,843	\$ 2,018

(1) Interest has been calculated on the term loan based on an interest rate of 3.125% which was the rate in effect as of December 31, 2016. Actual cash flows may differ significantly due to changes in interest rates.

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

(3) Purchase obligations represent total future minimum payments under contracts to various service providers. Purchase obligations exclude agreements that are cancellable without penalty.

Critical Accounting Policies and Significant Judgments and Estimates

Our condensed consolidated financial statements are prepared in accordance with GAAP. The preparation of these financial statements requires our management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue, costs, and expenses and related disclosures. Our estimates are based on our historical experience and on various other factors that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these judgments and estimates under different assumptions or conditions and any such differences may be material.

We believe that the assumptions and estimates associated with revenue recognition and deferred revenue, stock-based compensation, the valuation of goodwill and intangible assets, internal-use software development costs, income taxes and other contingencies have the greatest potential impact on our condensed consolidated financial statements. Therefore, we consider these to be our critical accounting policies and estimates.

There have been no material changes to our critical accounting policies and significant judgments and estimates as compared to the critical accounting policies and significant judgments and estimates disclosed in the final prospectus for our IPO filed with the SEC on November 13, 2017 pursuant to Rule 424(b)(1) under the Securities Act.

Recently Issued Accounting Guidance

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

JOBS Act Accounting Election

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”).

Section 107 of the JOBS Act provides that an “emerging growth company” can take advantage of the extended transition period provided in Section 7(a)(2)(B) of the Securities Act for complying with new or revised accounting standards. In other words, an “emerging growth company” can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for complying with new or revised accounting standards under Section 102(b)(1) of the JOBS Act. This election allows us to delay the adoption of new or revised accounting standards that have different effective dates for public and private companies until those standards apply to private companies. As a result of this election, our financial statements may not be comparable to companies that comply with public company effective dates.

We also intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not “emerging growth companies,” including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We may take advantage of these exemptions for so long as we are an “emerging growth company.”

We will remain an emerging growth company until the earlier of (1) December 31, 2022 (the last day of the fiscal year following the fifth anniversary of our initial public offering), (2) the last day of the fiscal year in which we have total annual gross revenue of at least \$1.07 billion, (3) the last day of the fiscal year in which we are deemed to be a “large accelerated filer,” as defined in the Exchange Act, and (4) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the prior three-year period. Any reference herein to “emerging growth company” has the meaning ascribed to it in the JOBS Act.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to certain market risks in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and, to a lesser extent, inflation.

Interest Rate Risk

Our primary exposure to market risk relates to interest rate changes. We had cash and cash equivalents totaling \$5.4 million as of September 30, 2017, which were held for working capital purposes. Our cash and cash equivalents are comprised primarily of interest bearing checking accounts.

Such interest-earning instruments carry a degree of interest rate risk. To date, fluctuations in interest income have not been significant. The primary objective of our investment activities is to preserve principal while maximizing income without significantly increasing risk. We do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate risk exposure. Due to the short-term nature of our investments, we have not been exposed to, nor do we anticipate being exposed to, material risks due to changes in interest rates.

We had debt totaling \$38.5 million as of September 30, 2017. Our debt is comprised of \$38.5 million outstanding under our term loan and no amount outstanding on the revolving line of credit. The revolving line of credit had an interest rate based on the 1-month LIBOR rate plus 225 basis points as of September 30, 2017. The term loan had an interest rate based on the 3-month LIBOR rate plus 225 basis points. A one-eighth percentage point increase or decrease in the applicable rate for our credit facility (assuming the revolving portion of the credit facility is fully drawn) would have an annual impact of \$0.1 million on cash interest expense.

Foreign Currency Risk

Our customers consume our services primarily in the United States. Our revenue and expenses are denominated in U.S. dollars and as a result we have no foreign currency risk.

Inflation

We do not believe inflation has had a material effect on our business, financial condition or results of operations. We continue to monitor the impact of inflation in order to minimize its effects through pricing strategies, productivity improvements and cost reductions. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

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, have evaluated our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this Quarterly Report on Form 10-Q. Based on that evaluation, our Chief Executive Officer and our Chief Financial Officer have concluded that, as of the end of the period covered by this Quarterly Report on Form 10-Q, our disclosure controls and procedures are designed at a reasonable assurance level and are effective to provide reasonable assurance that information we are required to disclose in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in internal control over financial reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act during the quarter ended September 30, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent limitation on the effectiveness of internal control

The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute assurances. In addition, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business, but cannot assure you that such improvements will be sufficient to provide us with effective internal control over financial reporting.

PART II -- OTHER INFORMATION

Item 1. Legal Proceedings

In April 2014, Phone Recovery Services, LLC (“Phone Recovery Services”) filed a complaint against us in the Superior Court of the District of Columbia. The complaint alleges that we failed to bill, collect and remit certain taxes and surcharges associated with the provision of 911 services pursuant to applicable laws of the District of Columbia. In November 2015, the Superior Court of the District of Columbia dismissed Phone Recovery Services’ complaint with prejudice. Phone Recovery Services subsequently appealed, and we are currently awaiting a decision regarding Phone Recovery Services’ appeal.

Phone Recovery Services, acting or purporting to act on behalf of applicable jurisdictions, or the applicable county or city itself, has filed similar lawsuits against us and/or one of our subsidiaries in the Superior Court of the State of Rhode Island, the Court of Common Pleas of Allegheny County, Pennsylvania and the District Court of Ramsey County, Minnesota that are currently in various stages of litigation. The case in Ramsey County, Minnesota was dismissed in November 2016; in August 2017, the Minnesota Court of Appeals affirmed that dismissal. On September 5, 2017, Phone Recovery Services filed a notice of appeal to the Minnesota Supreme Court. To date, we have not received any material adverse decision in connection with those matters.

We face similar lawsuits brought directly by various state and local governments alleging underpayment of 911 taxes and surcharges, although we understand that Phone Recovery Services is working in conjunction with each state or local government as a consultant on a contingency basis. The following county or municipal governments have named us in lawsuits associated with the collection and remittance of 911 taxes and surcharges: Birmingham Emergency Communications District, Alabama (the “Alabama Case”); Clayton County, Cobb County, DeKalb County, Fulton County, Gwinnett County, Macon-Bibb County, Georgia and Columbus Consolidated Government, Georgia (collectively, the “Georgia Cases”); Cook County and Kane County Illinois; City of Chicago, Illinois; the State of Illinois (collectively, the “Illinois Case”); Beaver County, Berks County, Bucks County, Butler County, Chester Co., Clarion County, Cumberland County, Dauphin County, Delaware County, Lancaster County, Lebanon County, Mercer County, Somerset County, Washington County, Westmoreland County, and York County, Pennsylvania (collectively, the “Pennsylvania Cases”); and Charleston County, South Carolina. The complaints allege that we failed to bill, collect and remit certain taxes and surcharges associated with 911 service pursuant to applicable laws. A claim in the Alabama Case was partially dismissed in December 2017; Birmingham Emergency Communications District may timely appeal the partial dismissal of the claim. The Georgia Cases have been closed administratively during the appeal of a related case in the Georgia courts; the Georgia Cases may be reopened. We understand that Augusta-Richmond County, Bartow County, Chatham County, Cherokee County, City of Atlanta, City of Savannah, Forsyth County, Houston County and Spalding County, Georgia each intends to initiate legal proceedings against us with allegations substantially similar to those in the Georgia Cases. The Pennsylvania Case in Butler County, Pennsylvania was dismissed in August 2016; the Pennsylvania Cases have been stayed until the appeal of the dismissal of the Butler County, Pennsylvania Case is resolved. The Illinois Case was dismissed in December 2016; Phone Recovery Services timely filed a notice of appeal and the appeal is underway.

In August 2016, we received a Civil Investigative Demand from the Consumer Protection Division of the North Carolina Department of Justice, though no formal complaint has been filed in connection with that investigation. The North Carolina Department of Justice is investigating the billing, collection

and remission of certain taxes and surcharges associated with 911 service pursuant to applicable laws of the State of North Carolina.

We also have ongoing litigations against MCI Communications Services, Inc. d/b/a Verizon Business and Verizon Select Services, Inc. (collectively, “Verizon”) in the United States District Court for the Northern District of Texas. In April 2016, we filed counterclaims against Verizon. We are pursuing collection of unpaid intercarrier compensation charges for providing switched access services related to the exchange of telecommunications traffic with Verizon entities across the United States. Verizon has asserted counterclaims against us. We intend to contest the counterclaims vigorously. Verizon’s prior September 2014 complaint against us and other defendants regarding intercarrier compensation charges for providing switched access services related to the exchange of telecommunications traffic has been dismissed without prejudice, but remains subject to appeal.

Item 1A. Risk Factors

RISK FACTORS

In addition to the other information set forth in this quarterly report, you should carefully consider the factors discussed in “Risk Factors” in our registration statement on Form S-1 filed with the SEC on October 12, 2017, which could materially affect our business, financial condition or future results. There have been no material changes from the risk factors previously disclosed in that prospectus.

Item 2. Unregistered Sales of Equity Securities

Recent Sales of Unregistered Securities

On November 28, 2017, the Underwriters exercised their option to sell 162,991 shares of our Class A common stock under the options granted to them under the Underwriting Agreement. As a result of this transaction, shares of Class B common stock held by the selling stockholders were converted to Class A common stock resulting in 4,197,831 outstanding shares of Class A common stock and 13,423,489 of Class B common stock.

Use of Proceeds

On November 9, 2017, the Registration Statement on Form S-1 (File No. 333-220945) for our initial public offering of our Class A common stock was declared effective by the SEC. Shares of our Class A common stock began trading on the New York Stock Exchange on November 10, 2017.

The underwriters of our initial public offering were Morgan Stanley, KeyBank Capital Markets, Baird, Canaccord Genuity and JMP Securities. We paid to the underwriters of our initial public offering an underwriting discount totaling approximately \$5.6 million. In addition, we incurred expenses of approximately \$5.3 million which, when added to the underwriting discount, amount to total expenses of approximately \$10.9 million. Thus, the net offering proceeds, after deducting underwriting discounts and offering expenses, were approximately \$69.1 million. No payments were made to our directors or officers or their associates, holders of 10% or more of any class of our equity securities or any affiliates.

There has been no material change in the planned use of proceeds from the IPO from that described in the final prospectus filed with the SEC pursuant to Rule 424(b)(1) under the Securities Act on November

13, 2017.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits

EXHIBIT INDEX

<u>Exhibit number</u>	<u>Description of Exhibit</u>
3.1	Second Amended and Restated Certificate of Incorporation
3.2	Second Amended and Restated Bylaws
31.1	Certificate of the Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	Certification of the Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act 2002
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Quarterly Report on Form 10-Q and will not be deemed "filed" for purpose of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates by reference

SIGNATURES

Pursuant to the requirements of the Securities Act of 1934, as amended, the Registrant has duly caused this report 10-Q to be signed on its behalf by the undersigned, thereunto duly authorized.

December 14, 2017 .

BANDWIDTH INC.

By:

David A. Morken
Chief Executive Officer and Chairman
(Principal Executive Officer)

December 14, 2017 .

BANDWIDTH INC.

By:

Jeffrey A. Hoffman
Chief Financial Officer
(Principal Accounting and Financial Officer)

BANDWIDTH INC.
SECOND AMENDED AND RESTATED
CERTIFICATE OF INCORPORATION

Bandwidth Inc. (the “ **Corporation** ”), a corporation organized and existing under the laws of the State of Delaware, hereby certifies as follows:

- A. The Corporation was originally incorporated under the name of Bandwidth.com, Inc., and the original Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on March 29, 2001.
- B. An Amended and Restated Certificate of Incorporation of the Corporation was filed with the Secretary of State of the State of Delaware on February 22, 2011, as amended.
- C. This Second Amended and Restated Certificate of Incorporation was duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware (the “ **DGCL** ”), and has been duly approved by the written consent of the requisite stockholders of the Corporation in accordance with Section 228 of the DGCL.
- D. The Certificate of Incorporation of the Corporation is hereby amended and restated in its entirety to read as follows:

ARTICLE I

The name of the Corporation is Bandwidth Inc.

ARTICLE II

The address of the Corporation’s registered office in the State of Delaware is 251 Little Falls Drive, Wilmington, New Castle County, DE 19808. The name of its registered agent at such address is Corporation Service Company.

ARTICLE III

The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the DGCL.

ARTICLE IV

A Classes of Stock. The total number of shares of capital stock that the Corporation shall have authority to issue is 130,000,000, consisting of the following: 100,000,000 shares of Class A Common Stock, par value \$0.001 per share (“ **Class A Common Stock** ”), 20,000,000 shares of Class B Common Stock, par value \$0.001 per share (“ **Class B Common Stock** ”), and 10,000,000 shares of undesignated Preferred Stock, par value \$0.001 per share (“ **Preferred Stock** ”).

Immediately upon the acceptance of this Second Amended and Restated Certificate of Incorporation for filing by the Secretary of State of the State of Delaware (the “ **Effective Time** ”), each share of the Corporation’s (a) existing one-vote Class A common stock

issued and outstanding, one-vote Class A common stock held as treasury stock or warrants or options exercisable for one-vote Class A common stock immediately prior to the Effective Time, shall, automatically and without further action by any stockholder, be reclassified as, and shall become, one share of Class B Common Stock or the right to receive one share of Class B Common Stock upon exercise of such warrant or option and (b) existing no-vote Class B common stock issued and outstanding, no-vote Class B common stock held as treasury stock or options exercisable into no-vote Class B common stock immediately prior to the Effective Time, shall, automatically and without further action by any stockholder, be reclassified as, and shall become, one share of Class A Common Stock or the right to receive one share of Class A Common Stock upon exercise of such option.

B Rights of Preferred Stock. The Board of Directors of the Corporation (the “ **Board of Directors** ”) is authorized, subject to any limitations prescribed by law but to the fullest extent permitted by law, to provide by resolution for the designation and issuance of shares of Preferred Stock in one or more series, and to establish from time to time the number of shares to be included in each such series, and to fix the designation, powers (which may include, without limitation, full, limited or no voting powers), preferences, and relative, participating, optional or other rights of the shares of each such series and any qualifications, limitations or restrictions thereof, and to file a certificate pursuant to the applicable law of the State of Delaware (such certificate being hereinafter referred to as a “ **Preferred Stock Designation** ”), setting forth such resolution or resolutions.

C Vote to Increase or Decrease Authorized Shares of Preferred Stock. The number of authorized shares of Preferred Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of all of the outstanding shares of capital stock of the Corporation entitled to vote thereon, without a separate class vote of the holders of Preferred Stock, or any separate series votes of any series thereof, unless a vote of any such holders is required pursuant to the terms of any Preferred Stock Designation.

D No Further Issuances. Except for the issuance of Class B Common Stock issuable upon exercise of Rights outstanding at the Effective Time, the reclassification of shares of Class B Common Stock into a greater or lesser number of shares of Class B Common Stock or as a dividend payable in accordance with Article IV, Section E.2(a), the Corporation shall not at any time after the Effective Time issue any additional shares of Class B Common Stock, unless such issuance is approved by the affirmative vote of the holders of a majority of the outstanding shares of Class B Common Stock.

E Rights of Class A Common Stock and Class B Common Stock. The relative powers, rights, qualifications, limitations and restrictions granted to or imposed on the shares of Class A Common Stock and Class B Common Stock are as follows:

1. Voting Rights.

(a) General Right to Vote Together; Exceptions. Except as otherwise expressly provided herein or required by applicable law, the holders of Class A Common Stock and Class B Common Stock shall vote together as a single class on all matters submitted to a vote of the stockholders; *provided, however* , subject to the terms of any Preferred Stock Designation, the number of authorized shares of Class A Common Stock

or Class B Common Stock may be increased or decreased (but not below the number of shares thereof then outstanding) by the affirmative vote of the holders of a majority of the voting power of the capital stock of the Corporation entitled to vote; *provided, further, however*, that a separate vote of the Class A Common Stock and the Class B Common Stock shall be required in the following circumstances:

(i) in connection with an amendment to this Second Amended and Restated Certificate of Incorporation to increase or decrease the par value of the Class A Common Stock or the Class B Common Stock, then the class impacted by such change in the par value shall be required to vote separately to approve the proposed amendment; and

(ii) in connection with an amendment to this Second Amended and Restated Certificate of Incorporation to alter or change the powers, preferences or special rights of a specific class in a manner that affected its holders adversely, then such class shall be required to vote separately to approve the proposed amendment.

(b) Votes Per Share. Except as otherwise expressly provided herein or required by applicable law, on any matter that is submitted to a vote of the stockholders, each holder of Class A Common Stock shall be entitled to one (1) vote for each such share, and each holder of Class B Common Stock shall be entitled to ten (10) votes for each such share.

2. Identical Rights. Except as otherwise expressly provided herein or required by applicable law, shares of Class A Common Stock and Class B Common Stock shall have the same rights and privileges and rank equally, share ratably and be identical in all respects as to all matters, including, without limitation:

(a) Dividends and Distributions. Shares of Class A Common Stock and Class B Common Stock shall be treated equally, identically and ratably, on a per share basis, with respect to the declaration and payment or distribution of any Distribution paid or distributed by the Corporation, unless different treatment of the shares of each such class is approved in advance by the affirmative vote of the holders of a majority of the outstanding shares of the class of stock being treated adversely, voting separately as a class; *provided, however*, that in the event a Distribution is paid in the form of Class A Common Stock or Class B Common Stock (or Rights to acquire such stock), then holders of Class A Common Stock shall receive Class A Common Stock (or Rights to acquire such stock, as the case may be), and holders of Class B Common Stock shall receive Class B Common Stock (or Rights to acquire such stock, as the case may be).

(b) Subdivision or Combination. If the Corporation in any manner subdivides or combines the outstanding shares of Class A Common Stock or Class B Common Stock, the outstanding shares of the other such class will be subdivided or combined in the same proportion and manner, unless different treatment of the shares of each such class is approved by the affirmative vote of the holders of a majority of the outstanding shares of Class A Common Stock and by the affirmative vote of the holders of a majority of the outstanding shares of Class B Common Stock, each voting separately as a class.

(c) Equal Treatment in a Change of Control or any Merger Transaction. In connection with any Change of Control Transaction, shares of Class A Common Stock and Class B Common Stock shall be treated equally, identically and ratably, on a per share basis, with respect to any consideration into which such shares are converted or any consideration paid or otherwise distributed to stockholders of the Corporation, unless different treatment of the shares of each such class is approved by the affirmative vote of the holders of a majority of the outstanding shares of Class A Common Stock and by the affirmative vote of the holders of a majority of the outstanding shares of Class B Common Stock, each voting separately as a class. Any merger or consolidation of the Corporation with or into any other entity, which is not a Change of Control Transaction, shall require approval by the affirmative vote of the holders of a majority of the outstanding shares of Class A Common Stock and by the affirmative vote of the holders of a majority of the outstanding shares of Class B Common Stock, each voting separately as a class, unless (i) the shares of Class A Common Stock and Class B Common Stock remain outstanding and no other consideration is received in respect thereof or (ii) such shares are converted on a pro rata basis into shares of the surviving or parent entity in such transaction having identical rights to the shares of Class A Common Stock and Class B Common Stock, respectively.

3. Conversion of Class B Common Stock.

(a) Voluntary Conversion. Each one (1) share of Class B Common Stock shall be convertible into one (1) share of Class A Common Stock at the option of the holder thereof at any time upon written notice to the transfer agent of the Corporation; *provided, however*, that no holder shall be permitted to voluntarily convert such holder's Class B Common Stock until the earlier to occur of (a) receipt of all regulatory approvals from the Federal Communications Commission and the state public utilities commissions as reasonably determined by the Corporation and as publicly disclosed by the Corporation on the U.S. Securities and Exchange Commission's Form 8-K (or such successor form); *provided* that a list of outstanding approvals may be requested in writing from the Corporation by a stockholder and (b) one hundred and eighty (180) days after the date of the pricing of the Corporation's IPO.

(b) Automatic Conversion. Shares of Class B Common Stock shall automatically, without any further action, convert into an equal number of shares of Class A Common Stock upon the earlier of:

(i) a Transfer of such share; *provided* that no such automatic conversion shall occur in the case of a Transfer by a Class B Stockholder for tax or estate planning purposes, to any of the persons or entities listed in clauses (A) through (E) below (each, a "**Permitted Transferee**") and from any such Permitted Transferee back to such Class B Stockholder and/or any other Permitted Transferee established by or for such Class B Stockholder:

(A) a family member of such Class B Stockholder, which shall include with respect to any natural person who is a Class B Stockholder, the spouse, domestic partner, parents, grandparents, lineal descendants, siblings and lineal descendants of siblings of such Class B Stockholder; and *provided, further*, that lineal

descendants shall include adopted persons, but only so long as they are adopted during minority;

(B) a trust for the benefit of such Class B Stockholder or persons other than the Class B Stockholder so long as the Class B Stockholder and/or family members of such Class B Stockholder have sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such trust; *provided* such Transfer does not involve any payment of cash, securities, property or other consideration (other than an interest in such trust) to the Class B Stockholder and, *provided, further*, that in the event such Class B Stockholder and/or family members of such Class B Stockholder no longer have sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such trust, each share of Class B Common Stock then held by such trust shall automatically convert into one (1) fully paid and nonassessable share of Class A Common Stock;

(C) a trust under the terms of which such Class B Stockholder has retained a “qualified interest” within the meaning of §2702(b)(1) of the Internal Revenue Code (or successor provision) and/or a reversionary interest so long as the Class B Stockholder has sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such trust; *provided, however*, that in the event the Class B Stockholder no longer has sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such trust, each share of Class B Common Stock then held by such trust shall automatically convert into one (1) fully paid and nonassessable share of Class A Common Stock;

(D) an Individual Retirement Account, as defined in Section 408(a) of the Internal Revenue Code (or successor provision), or a pension, profit sharing, stock bonus or other type of plan or trust of which such Class B Stockholder is a participant or beneficiary and which satisfies the requirements for qualification under Section 401 of the Internal Revenue Code; *provided* that in each case such Class B Stockholder has sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held in such account, plan or trust, and *provided, further*, that in the event the Class B Stockholder no longer has sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such account, plan or trust, each share of Class B Common Stock then held by such trust shall automatically convert into one (1) fully paid and nonassessable share of Class A Common Stock;

(E) a corporation, partnership or limited liability company in which such Class B Stockholder directly, or indirectly through one or more Permitted Transferees, owns shares, partnership interests or membership interests, as applicable, with sufficient Voting Control in the corporation, partnership or limited liability company, as applicable, or otherwise has legally enforceable rights, such that the Class B Stockholder and/or family members of such Class B Stockholder retain sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such corporation, partnership or limited liability company; *provided, however*, that in the event the Class B Stockholder and/or family members of

such Class B Stockholder no longer own sufficient shares, partnership interests or membership interests, as applicable, or no longer has sufficient legally enforceable rights to ensure the Class B Stockholder and/or family members of such Class B Stockholder retain sole dispositive power and exclusive Voting Control with respect to the shares of Class B Common Stock held by such corporation, partnership or limited liability company, as applicable, each share of Class B Common Stock then held by such corporation, partnership or limited liability company, as applicable, shall automatically convert into one (1) fully paid and nonassessable share of Class A Common Stock; and

(ii) the date specified by a written notice and certification request of the Corporation to the holder of such share of Class B Common Stock requesting a certification, in a form satisfactory to the Corporation, verifying such holder's ownership of Class B Common Stock and confirming that a conversion to Class A Common Stock has not occurred, which date shall not be less than sixty (60) calendar days after the date of such notice and certification request; *provided* that no such automatic conversion pursuant to this subsection (ii) shall occur in the case of a Class B Stockholder or its Permitted Transferees that furnishes a certification satisfactory to the Corporation prior to the specified date.

(c) Conversion Upon Death or Incapacity of a Class B Stockholder.

(i) Each share of Class B Common Stock held of record by a Class B Stockholder, other than a Key Holder, who is a natural person, or by such Class B Stockholder's Permitted Transferees, shall automatically, without any further action, convert into one (1) fully paid and nonassessable share of Class A Common Stock upon the death or Incapacity of such Class B Stockholder.

(ii) Each share of Class B Common Stock held of record by a Key Holder, or by a Key Holders' Permitted Transferees, upon the death or Incapacity of such Key Holder, shall automatically convert into one (1) fully paid and nonassessable share of Class A Common Stock upon that date which is the earlier of: (a) nine (9) months after the date of death or Incapacity of the Key Holder and (b) the date upon which the Designated Proxy Holder ceases to hold exclusive Voting Control over such shares of Class B Common Stock.

(d) Automatic Conversion of all Outstanding Class B Common Stock. Each one (1) share of Class B Common Stock shall automatically, without any further action, convert into one (1) share of Class A Common Stock upon the date specified by affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the outstanding shares of Class B Common Stock voting as a single class.

(e) Final Conversion of Class B Common Stock. Upon the Final Conversion Date, as certified by the Board of Directors, each share of Class B Common Stock shall automatically, without any further action, convert into one (1) fully paid and nonassessable share of Class A Common Stock. In making such determination, the Board of Directors shall be entitled to conclusively rely on reports or schedules disclosing ownership of Common Stock filed by or on behalf of the Key Holders, or any of them, pursuant to Section 13 or Section 16 (or such successor provision) of the Exchange Act. Following such conversion, the reissuance of all shares of Class B Common Stock shall

be prohibited, and such shares shall be retired and cancelled in accordance with Section 243 of the DGCL and the filing by the Secretary of State of the State of Delaware required thereby, and upon such retirement and cancellation, all references to Class B Common Stock in this Second Amended and Restated Certificate of Incorporation shall be eliminated.

(f) Procedures. The Corporation may, from time to time, establish such policies and procedures relating to the conversion of Class B Common Stock to Class A Common Stock and the general administration of this dual class stock structure, including the issuance of stock certificates (or the establishment of book-entry positions) with respect thereto, as it may deem reasonably necessary or advisable, and may from time to time request that holders of shares of Class B Common Stock furnish certifications, affidavits or other proof to the Corporation as it deems necessary to verify the ownership of Class B Common Stock and to confirm that a conversion to Class A Common Stock has not occurred. A determination by the Board of the Corporation that a Transfer results in a conversion to Class A Common Stock shall be conclusive and binding.

(g) Immediate Effect. In the event of a conversion of shares of Class B Common Stock to shares of Class A Common Stock pursuant to this Section E.3 or upon the Final Conversion Date, such conversion(s) shall be deemed to have been made at the time that the Transfer of shares occurred or immediately upon the Final Conversion Date, as applicable. Upon any conversion of Class B Common Stock to Class A Common Stock, all rights of the holder of shares of Class B Common Stock shall cease and the person or persons in whose names or names the certificate or certificates (or book-entry position(s)) representing the shares of Class A Common Stock are to be issued shall be treated for all purposes as having become the record holder or holders of such shares of Class A Common Stock. Shares of Class B Common Stock that are converted into shares of Class A Common Stock as provided in this Section E.3 shall be retired and may not be reissued.

(h) Reservation of Stock. The Corporation shall at all times reserve and keep available out of its authorized but unissued shares of Class A Common Stock, solely for the purpose of effecting the conversion of the shares of Class B Common Stock, such number of its shares of Class A Common Stock as shall from time to time be sufficient to effect the conversion of all outstanding shares of Class B Common Stock into shares of Class A Common Stock.

ARTICLE V

The following terms, where capitalized in this Second Amended and Restated Certificate of Incorporation, shall have the meanings ascribed to them in this Article V:

“ **Change of Control Share Issuance** ” means the issuance by the Corporation, in a transaction or series of related transactions, of voting securities representing more than two percent (2%) of the total voting power (assuming Class A Common Stock and Class B Common Stock each have one (1) vote per share) of the Corporation before such issuance to any person or persons acting as a group as contemplated in Rule 13d-5(b) under the Exchange Act (or any successor provision) that immediately prior to such transaction or series of related transactions

held fifty percent (50%) or less of the total voting power of the Corporation (assuming Class A Common Stock and Class B Common Stock each have one (1) vote per share), such that, immediately following such transaction or series of related transactions, such person or group of persons would hold more than fifty percent (50%) of the total voting power of the Corporation (assuming Class A Common Stock and Class B Common Stock each have one (1) vote per share).

2 “ **Change of Control Transaction** ” means (i) the sale, lease, exchange, or other disposition (other than liens and encumbrances created in the ordinary course of business, including liens or encumbrances to secure indebtedness for borrowed money that are approved by the Corporation’s Board of Directors, so long as no foreclosure occurs in respect of any such lien or encumbrance) of all or substantially all of the Corporation’s property and assets (which shall for such purpose include the property and assets of any direct or indirect subsidiary of the Corporation), *provided that* any sale, lease, exchange or other disposition of property or assets exclusively between or among the Corporation and any direct or indirect subsidiary or subsidiaries of the Corporation shall not be deemed a “ **Change of Control Transaction** ”; (ii) the merger, consolidation, business combination, or other similar transaction of the Corporation with any other entity, other than a merger, consolidation, business combination, or other similar transaction that would result in the voting securities of the Corporation outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity or its parent) more than fifty percent (50%) of the total voting power represented by the voting securities of the Corporation *and* more than fifty percent (50%) of the total number of outstanding shares of the Corporation’s capital stock, in each case as outstanding immediately after such merger, consolidation, business combination, or other similar transaction, and the stockholders of the Corporation immediately prior to the merger, consolidation, business combination, or other similar transaction own voting securities of the Corporation, the surviving entity or its parent immediately following the merger, consolidation, business combination, or other similar transaction in substantially the same proportions (vis-a-vis each other) as such stockholders owned the voting securities of the Corporation immediately prior to the transaction; (iii) a recapitalization, liquidation, dissolution, or other similar transaction involving the Corporation, other than a recapitalization, liquidation, dissolution, or other similar transaction that would result in the voting securities of the Corporation outstanding immediately prior thereto continuing to represent (either by remaining outstanding or being converted into voting securities of the surviving entity or its parent) more than fifty percent (50%) of the total voting power represented by the voting securities of the Corporation *and* more than fifty percent (50%) of the total number of outstanding shares of the Corporation’s capital stock, in each case as outstanding immediately after such recapitalization, liquidation, dissolution or other similar transaction, and the stockholders of the Corporation immediately prior to the recapitalization, liquidation, dissolution or other similar transaction own voting securities of the Corporation, the surviving entity or its parent immediately following the recapitalization, liquidation, dissolution or other similar transaction in substantially the same proportions (vis-a-vis each other) as such stockholders owned the voting securities of the Corporation immediately prior to the transaction; and (iv) any Change of Control Share Issuance.

3 “ **Class B Stockholder** ” means (i) the registered holder of a share of Class B Common Stock at the Effective Time and (ii) the registered holder of any shares of Class B Common Stock that are originally issued by the Corporation after the Effective Time.

4 “ **Designated Proxy Holder** ” means, with respect to a Key Holder or any trust or other entity receiving or holding a Key Holder’s shares, any natural person designated or approved by such Key Holder to act as such Key Holder’s proxy and attorney-in-fact or, if there is no such designee, the members of the entire Board of Directors acting by majority vote.

5 “ **Distribution** ” means (i) any dividend or distribution of cash, property or shares of the Corporation’s capital stock; and (ii) any distribution following or in connection with any liquidation, dissolution or winding up of the Corporation, either voluntary or involuntary.

6 “ **Exchange Act** ” means the United States Securities Exchange Act of 1934, as amended.

7 “ **Final Conversion Date** ” means 5:00 p.m. in New York City, New York on the first Trading Day falling after the date on which the Key Holders beneficially own, directly or indirectly, in the aggregate less than forty percent (40%) of the number of shares of Class B common stock held by the Key Holders immediately following the closing of the Corporation’s IPO.

8 “ **Incapacity** ” shall mean that such holder is incapable of managing his or her financial affairs under the criteria set forth in the applicable probate code that can be expected to result in death or which has lasted or can be expected to last for a continuous period of not less than twelve (12) months as determined by a licensed medical practitioner. In the event of a dispute regarding whether a Class B Stockholder has suffered an Incapacity, no Incapacity of such holder will be deemed to have occurred unless and until an affirmative ruling regarding such Incapacity has been made by a court of competent jurisdiction.

9 “ **IPO** ” means the initial public offering of Class A common stock.

10 “ **Key Holder** ” means any of David A. Morken, Hazel-Rah LLC and/or any other entity or trust controlled by David A. Morken that holds shares of capital stock of the Corporation.

11 “ **Rights** ” means any option, warrant, restricted stock unit, conversion right or contractual right of any kind to acquire shares of the Corporation’s authorized but unissued capital stock.

12 “ **Securities Act** ” means the United States Securities Act of 1933, as amended.

13 “ **Securities Exchange** ” means, at any time, the registered national securities exchange on which the Corporation’s equity securities are then principally listed or traded, which shall be the New York Stock Exchange or NASDAQ Global Market (or similar national quotation system of the NASDAQ Stock Market) (“ **NASDAQ** ”) or any successor exchange of either the New York Stock Exchange or NASDAQ.

14 “ **Trading Day** ” means any day on which the Securities Exchange is open for trading.

15 “ **Transfer** ” of a share of Class B Common Stock shall mean any sale, assignment, transfer, conveyance, hypothecation or other transfer or disposition of such share or any legal or beneficial interest in such share, whether or not for value and whether voluntary or involuntary or by operation of law. A “ **Transfer** ” shall also include, without limitation, (i) a transfer of a

share of Class B Common Stock to a broker or other nominee (regardless of whether or not there is a corresponding change in beneficial ownership) or (ii) the transfer of, or entering into a binding agreement with respect to, Voting Control over a share of Class B Common Stock by an irrevocable proxy; *provided, however*, that the following shall not be considered a “ **Transfer** ”: (a) the grant of a proxy in connection with actions to be taken at an annual or special meeting of stockholders; (b) the pledge of shares of Class B Common Stock by a Class B Stockholder that creates a mere security interest in such shares pursuant to a *bona fide* loan or indebtedness transaction so long as the Class B Stockholder continues to exercise Voting Control over such pledged shares; *provided, however*, that a foreclosure on such shares of Class B Common Stock or other similar action by the pledge shall constitute a “ **Transfer** ”; or (c) the fact that, as of the Effective Time or at any time after the Effective Time, the spouse of any Class B Stockholder possesses or obtains an interest in such holder’s shares of Class B Common Stock arising solely by reason of the application of the community property laws of any jurisdiction, so long as no other event or circumstance shall exist or have occurred that constitutes a “ **Transfer** ” of such shares of Class B Common Stock.

16 “ **Voting Control** ” with respect to a share of Class B Common Stock means the exclusive power (whether directly or indirectly) to vote or direct the voting of such share of Class B Common Stock by proxy, voting agreement, or otherwise.

ARTICLE VI

A General Powers. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors.

B Number of Directors; Election. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, the number of directors that constitutes the entire Board of Directors of the Corporation shall be fixed solely by resolution of the Board of Directors. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, each director of the Corporation shall hold office until the expiration of the term for which he or she is elected and until his or her successor has been duly elected and qualified or until his or her earlier resignation, death or removal.

C Classified Board Structure. From and after the Effective Time, and subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, the directors of the Corporation shall be divided into three (3) classes as nearly equal in size as is practicable, hereby designated Class I, Class II and Class III. The Board of Directors may assign members of the Board of Directors already in office to such classes at the time such classification becomes effective. The term of office of the initial Class I directors shall expire at the first regularly-scheduled annual meeting of stockholders following the Effective Time, the term of office of the initial Class II directors shall expire at the second annual meeting of stockholders following the Effective Time and the term of office of the initial Class III directors shall expire at the third annual meeting of stockholders following the Effective Time. At each annual meeting of stockholders, commencing with the first regularly-scheduled annual meeting of stockholders following the Effective Time, each of the successors elected to replace the directors of a Class whose term shall have expired at such annual meeting shall be elected to hold office until the third annual meeting next succeeding his or her election and until his or her respective successor shall have been duly elected and qualified.

Notwithstanding the foregoing provisions of this Article VI, each director shall serve until his or her successor is duly elected and qualified or until his or her death, resignation, or removal. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, if the number of directors is hereafter changed, any newly created directorships or decrease in directorships shall be so apportioned among the classes as to make all classes as nearly equal in number as is practicable, *provided* that no decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

D Removal; Vacancies. Subject to the rights of holders of any series of Preferred Stock with respect to the election of directors, for so long as the board of directors is divided into classes pursuant to Article VI Section C, any director may be removed from office by the stockholders of the Corporation only for cause by the affirmative vote of the holders of at least sixty-six and two-thirds (66-2/3%) of the outstanding shares of Class A Common Stock and Class B Common Stock voting as a single class.

Vacancies occurring on the Board of Directors for any reason and newly created directorships resulting from an increase in the authorized number of directors may be filled only by vote of a majority of the remaining members of the Board of Directors, although less than a quorum, or by a sole remaining director, at any meeting of the Board of Directors. A person so elected by the Board of Directors to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall be duly elected and qualified.

ARTICLE VII

A Written Ballot. Elections of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

B Amendment of Bylaws. In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to adopt, amend or repeal the Bylaws of the Corporation.

C Special Meetings. Special meetings of the stockholders may be called only by (i) the Board of Directors pursuant to a resolution adopted by a majority of the Board of Directors; (ii) the chairman of the Board of Directors; (iii) the chief executive officer of the Corporation; or (iv) the president of the Corporation (in the absence of a chief executive officer).

D No Stockholder Action by Written Consent. Subject to the rights of the holders of any series of Preferred Stock, no action shall be taken by the stockholders of the Corporation except at an annual or special meeting of the stockholders called in accordance with the Bylaws, and other than by holders of Class B Common Stock, no action shall be taken by the stockholders by written consent.

E No Cumulative Voting. No stockholder will be permitted to cumulate votes at any election of directors.

ARTICLE VIII

To the fullest extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, a director of the Corporation shall not be personally liable to the

Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Neither any amendment nor repeal of this Article VIII, nor the adoption of any provision of the Corporation's Certificate of Incorporation inconsistent with this Article VIII, shall eliminate or reduce the effect of this Article VIII in respect of any matter occurring, or any cause of action, suit or proceeding accruing or arising or that, but for this Article VIII, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

ARTICLE IX

Subject to any provisions in the Bylaws of the Corporation related to indemnification of directors or officers of the Corporation, the Corporation shall indemnify, to the fullest extent permitted by applicable law, any director or officer of the Corporation who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a “**Proceeding**”) by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding.

The Corporation shall have the power to indemnify, to the extent permitted by the DGCL, as it presently exists or may hereafter be amended from time to time, any employee or agent of the Corporation who was or is a party or is threatened to be made a party to any Proceeding by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding.

A right to indemnification or to advancement of expenses arising under a provision of this Second Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation shall not be eliminated or impaired by an amendment to this Second Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought, unless the provision in effect at the time of such act or omission explicitly authorizes such elimination or impairment after such action or omission has occurred.

ARTICLE X

If any provision of this Second Amended and Restated Certificate of Incorporation becomes or is declared on any ground by a court of competent jurisdiction to be illegal, unenforceable or void, portions of such provision, or such provision in its entirety, to the extent necessary,

shall be severed from this Second Amended and Restated Certificate of Incorporation, and the court will replace such illegal, void or unenforceable provision of this Second Amended and Restated Certificate of Incorporation with a valid and enforceable provision that most accurately reflects the Corporation's intent, in order to achieve, to the maximum extent possible, the same economic, business and other purposes of the illegal, void or unenforceable provision. The balance of this Second Amended and Restated Certificate of Incorporation shall be enforceable in accordance with its terms.

Except as provided in ARTICLE VIII and ARTICLE IX above, the Corporation reserves the right to amend, alter, change or repeal any provision contained in this Second Amended and Restated Certificate of Incorporation, in the manner now or hereafter prescribed by statute, and all rights conferred upon stockholders herein are granted subject to this reservation; *provided, however*, that, notwithstanding any other provision of this Second Amended and Restated Certificate of Incorporation or any provision of law that might otherwise permit a lesser vote or no vote, but in addition to any vote of the holders of any class or series of the stock of this Corporation required by law or by this Second Amended and Restated Certificate of Incorporation, the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the voting power of the outstanding shares of stock of the Corporation entitled to vote generally in the election of directors, voting together as a single class, shall be required to amend or repeal, or adopt any provision of this Second Amended and Restated Certificate of Incorporation inconsistent with, ARTICLE VI, ARTICLE VII, ARTICLE VIII, ARTICLE IX or this ARTICLE X.

* * *

IN WITNESS WHEREOF , this Second Amended and Restated Certificate of Incorporation has been signed on behalf of the Corporation by its duly authorized officer effective this 9th day of November, 2017.

BANDWIDTH INC.

By: _____

David A. Morken
Chief Executive Officer

SECOND AMENDED AND RESTATED BYLAWS

OF

BANDWIDTH INC.

(effective as of the pricing of the corporation's initial public offering)

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BYLAWS OF BANDWIDTH INC.

ARTICLE I

CORPORATE OFFICES

1.1 Registered Office. The registered office of Bandwidth Inc. shall be fixed in the corporation's certificate of incorporation, as the same may be amended from time to time.

1.2 Other Offices. The corporation's board of directors may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II

ARTICLE II MEETINGS OF STOCKHOLDERS

2.1 Place of Meetings. Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the board of directors. The board of directors may, in its sole discretion, determine that a meeting of stockholders shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the Delaware General Corporation Law (the " **DGCL** "). In the absence of any such designation or determination, stockholders' meetings shall be held at the corporation's principal executive office.

2.2 Annual Meeting. The annual meeting of stockholders shall be held on such date, at such time, and at such place (if any) within or without the State of Delaware as shall be designated from time to time by the board of directors and stated in the corporation's notice of the meeting. At the annual meeting, directors shall be elected and any other proper business, brought in accordance with Section 2.4 of these bylaws, may be transacted. The board of directors may cancel, postpone or reschedule any previously scheduled annual meeting at any time, before or after the notice for such meeting has been sent to the stockholders.

2.3 Special Meeting.

(i) A special meeting of the stockholders, other than those required by statute, may be called at any time by (A) the board of directors, (B) the chairperson of the board of directors, (C) the chief executive officer or (D) the president (in the absence of a chief executive officer), but a special meeting may not be called by any other person or persons. The board of directors may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders.

(ii) The notice of a special meeting shall include the purpose for which the meeting is called. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting by or at the direction of the board of directors, chairperson of the board of directors, chief executive officer or president (in the absence of a chief executive

officer). Nothing contained in this Section 2.3(ii) shall be construed as limiting, fixing or affecting the time when a meeting of stockholders called by action of the board of directors may be held.

2.4 Advance Notice Procedures.

(i) Advance Notice of Stockholder Business. At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be brought: (A) pursuant to the corporation's proxy materials with respect to such meeting, (B) by or at the direction of the board of directors, or (C) by a stockholder of the corporation who (1) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(i) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has timely complied in proper written form with the notice procedures set forth in this Section 2.4(i). In addition, for business to be properly brought before an annual meeting by a stockholder, such business must be a proper matter for stockholder action pursuant to these bylaws and applicable law. For the avoidance of doubt, except for proposals properly made in accordance with Rule 14a-8 under the Securities and Exchange Act of 1934, as amended, or any successor thereto (the "**1934 Act**"), and the regulations thereunder (or any successor rule and in any case as so amended), clause (C) above shall be the exclusive means for a stockholder to bring business before an annual meeting of stockholders.

(a) To comply with clause (C) of Section 2.4(i) above, a stockholder's notice must set forth all information required under this Section 2.4(i) and must be timely received by the secretary of the corporation. To be timely, a stockholder's notice must be received by the secretary at the principal executive offices of the corporation not later than the 45th day nor earlier than the 75th day before the one-year anniversary of the date on which the corporation first mailed its proxy materials or a notice of availability of proxy materials (whichever is earlier) for the preceding year's annual meeting; *provided, however*, that in the event that no annual meeting was held in the previous year or if the date of the annual meeting is advanced by more than 30 days prior to or delayed by more than 60 days after the one-year anniversary of the date of the previous year's annual meeting, then, for notice by the stockholder to be timely, it must be so received by the secretary not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of (i) the 90th day prior to such annual meeting, or (ii) the tenth day following the day on which Public Announcement (as defined below) of the date of such annual meeting is first made. In no event shall any adjournment, rescheduling or postponement of an annual meeting or the announcement thereof commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(i)(a). "**Public Announcement**" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or a comparable national news service, in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the 1934 Act, or made via a Tweet from a verified account operated by the corporation (e.g., @ Bandwidth).

(b) To be in proper written form, a stockholder's notice to the secretary must set forth as to each matter of business the stockholder intends to bring before the annual meeting: (1) a brief description of the business intended to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (2) the name and address, as

they appear on the corporation's books, of the stockholder proposing such business and any Stockholder Associated Person (as defined below), (3) the class and number of shares of the corporation that are held of record or are beneficially owned by the stockholder or any Stockholder Associated Person and any derivative positions held or beneficially held by the stockholder or any Stockholder Associated Person, (4) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of such stockholder or any Stockholder Associated Person with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit from share price changes for, or to increase or decrease the voting power of, such stockholder or any Stockholder Associated Person with respect to any securities of the corporation, (5) any material interest of the stockholder or a Stockholder Associated Person in such business, and (6) a statement whether either such stockholder or any Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of at least the percentage of the voting power of the corporation's voting shares required under applicable law to carry the proposal (such information provided and statements made as required by clauses (1) through (6), a “ **Business Solicitation Statement** ”). In addition, to be in proper written form, a stockholder's notice to the secretary must be supplemented not later than ten days following the record date for the determination of stockholders entitled to notice of the meeting to disclose the information contained in clauses (3) and (4) above as of the record date. For purposes of this Section 2.4, a “ **Stockholder Associated Person** ” of any stockholder shall mean (i) any person controlling, directly or indirectly, or acting in concert with, such stockholder, (ii) any beneficial owner of shares of stock of the corporation owned of record or beneficially by such stockholder and on whose behalf the proposal or nomination, as the case may be, is being made, or (iii) any person controlling, controlled by or under common control with such person referred to in the preceding clauses (i) and (ii).

(c) Without exception, no business shall be conducted at any annual meeting except in accordance with the provisions set forth in this Section 2.4(i) and, if applicable, Section 2.4(ii). In addition, business proposed to be brought by a stockholder may not be brought before the annual meeting if such stockholder or a Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Business Solicitation Statement applicable to such business or if the Business Solicitation Statement applicable to such business contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that business was not properly brought before the annual meeting and in accordance with the provisions of this Section 2.4(i), and, if the chairperson should so determine, he or she shall so declare at the annual meeting that any such business not properly brought before the annual meeting shall not be conducted.

(ii) Advance Notice of Director Nominations at Annual Meetings. Notwithstanding anything in these bylaws to the contrary, only persons who are nominated in accordance with the procedures set forth in this Section 2.4(ii) shall be eligible for election or re-election as directors at an annual meeting of stockholders. Nominations of persons for election to the board of directors of the corporation shall be made at an annual meeting of stockholders only (A) by or at the direction of the board of directors or (B) by a stockholder of the corporation who

(1) was a stockholder of record at the time of the giving of the notice required by this Section 2.4(ii) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has complied with the notice procedures set forth in this Section 2.4(ii). In addition to any other applicable requirements, for a nomination to be made by a stockholder, the stockholder must have given timely notice thereof in proper written form to the secretary of the corporation.

(a) To comply with clause (B) of Section 2.4(ii) above, a nomination to be made by a stockholder must set forth all information required under this Section 2.4(ii) and must be received by the secretary of the corporation at the principal executive offices of the corporation at the time set forth in, and in accordance with, the final three sentences of Section 2.4(i) (a) above; *provided, however*, that in the event that the number of directors to be elected to the board of directors is increased and there is no Public Announcement naming all of the nominees for director or specifying the size of the increased board made by the corporation at least ten days before the last day a stockholder may deliver a notice of nomination pursuant to the foregoing provisions, a stockholder's notice required by this Section 2.4(ii) shall also be considered timely, but only with respect to nominees for any new positions created by such increase, if it shall be received by the secretary of the corporation at the principal executive offices of the corporation not later than the close of business on the tenth day following the day on which such Public Announcement is first made by the corporation.

(b) To be in proper written form, such stockholder's notice to the secretary must set forth:

(1) as to each person (a "**nominee**") whom the stockholder proposes to nominate for election or re-election as a director: (A) the name, age, business address and residence address of the nominee, (B) the principal occupation or employment of the nominee, (C) the class and number of shares of the corporation that are held of record or are beneficially owned by the nominee and any derivative positions held or beneficially held by the nominee, (D) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of the nominee with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit of share price changes for, or to increase or decrease the voting power of the nominee, (E) a description of all arrangements or understandings between or among any of the stockholder, each nominee and/or any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder or relating to the nominee's potential service on the board of directors, (F) a written statement executed by the nominee acknowledging that as a director of the corporation, the nominee will owe a fiduciary duty under Delaware law with respect to the corporation and its stockholders, and (G) any other information relating to the nominee that would be required to be disclosed about such nominee if proxies were being solicited for the election of the nominee as a director, or that is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including without limitation the nominee's written consent to being named in the proxy statement, if any, as a nominee and to serving as a director if elected); and

(2) as to such stockholder giving notice, (A) the information required to be provided pursuant to clauses (2) through (5) of Section 2.4(i)(b) above, and the supplement referenced in the second sentence of Section 2.4(i)(b) above (except that the references to “business” in such clauses shall instead refer to nominations of directors for purposes of this paragraph), and (B) a statement whether either such stockholder or Stockholder Associated Person will deliver a proxy statement and form of proxy to holders at least the percentage of the corporation’s voting shares reasonably believed by such stockholder or Stockholder Associated Person to be necessary to elect such nominee(s) (such information provided and statements made as required by clauses (A) and (B) above, a “**Nominee Solicitation Statement**”).

(c) At the request of the board of directors, any person nominated by a stockholder for election as a director must furnish to the secretary of the corporation (1) that information required to be set forth in the stockholder’s notice of nomination of such person as a director as of a date subsequent to the date on which the notice of such person’s nomination was given and (2) such other information as may reasonably be required by the corporation to determine the eligibility of such proposed nominee to serve as an independent director of the corporation or that could be material to a reasonable stockholder’s understanding of the independence, or lack thereof, of such nominee; in the absence of the furnishing of such information if requested, such stockholder’s nomination shall not be considered in proper form pursuant to this Section 2.4(ii).

(d) Without exception, no person shall be eligible for election or re-election as a director of the corporation at an annual meeting of stockholders unless nominated in accordance with the provisions set forth in this Section 2.4(ii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that a nomination was not made in accordance with the provisions prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the annual meeting, and the defective nomination shall be disregarded.

(iii) Advance Notice of Director Nominations for Special Meetings.

(a) For a special meeting of stockholders at which directors are to be elected pursuant to Section 2.3, nominations of persons for election to the board of directors shall be made only (1) by or at the direction of the board of directors or (2) by any stockholder of the corporation who (A) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(iii) and on the record date for the determination of stockholders entitled to vote at the special meeting and (B) delivers a timely written notice of the nomination to the secretary of the corporation that includes the information set forth in Sections 2.4(ii)(b) and (ii)(c) above. To be timely, such notice must be received by the secretary at the principal executive offices of the corporation not later than the close of business on the later of the 90th day prior to such special meeting or the tenth day following the day on which Public Announcement is first made of the date of the special meeting and of the nominees proposed by the board of directors to be elected at such

meeting. In no event shall any adjournment, rescheduling or postponement of a special meeting or the announcement thereof commence a new time period for the giving of a stockholder's notice. A person shall not be eligible for election or re-election as a director at a special meeting unless the person is nominated (i) by or at the direction of the board of directors or (ii) by a stockholder in accordance with the notice procedures set forth in this Section 2.4(iii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading.

(b) The chairperson of the special meeting shall, if the facts warrant, determine and declare at the meeting that a nomination or business was not made in accordance with the procedures prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the meeting, and the defective nomination or business shall be disregarded.

(iv) Other Requirements and Rights. In addition to the foregoing provisions of this Section 2.4, a stockholder must also comply with all applicable requirements of state law and of the 1934 Act and the rules and regulations thereunder with respect to the matters set forth in this Section 2.4, including, with respect to business such stockholder intends to bring before the annual meeting that involves a proposal that such stockholder requests to be included in the corporation's proxy statement, the requirements of Rule 14a-8 (or any successor provision) under the 1934 Act. Nothing in this Section 2.4 shall be deemed to affect any right of the corporation to omit a proposal from the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act.

2.5 Notice of Stockholders' Meetings. Whenever stockholders are required or permitted to take any action at a meeting, a written notice of the meeting shall be given which shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Except as otherwise provided in the DGCL, the certificate of incorporation or these bylaws, the written notice of any meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

2.6 Quorum. The holders of a majority of the voting power of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders, unless otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange. Where a separate vote by a class or series or classes or series is required, a majority of the voting power of the issued and outstanding shares of such class or series or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on

that matter, except as otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange.

Whether or not a quorum is present at a meeting of stockholders, the chairperson of the meeting shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the original meeting.

2.7 Adjourned Meeting; Notice. When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the board of directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 213(a) of the DGCL and Section 2.11 of these bylaws, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

2.8 Conduct of Business. The chairperson of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business. The chairperson of any meeting of stockholders shall be designated by the board of directors; in the absence of such designation, the chairperson of the board, if any, the chief executive officer (in the absence of the chairperson) or the lead independent director (in the absence of the chairperson of the board and the chief executive officer), or in their absence any other executive officer of the corporation, shall serve as chairperson of the stockholder meeting.

2.9 Voting. The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.11 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the DGCL.

Except as may be otherwise provided in the certificate of incorporation, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

Except as otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange, in all matters other than the election of directors, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the subject matter shall be the act of the stockholders. Except as otherwise required by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange, directors shall be elected by a plurality of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the election

of directors. Where a separate vote by a class or series or classes or series is required, in all matters other than the election of directors, the affirmative vote of the majority of the voting power of shares of such class or series or classes or series present in person or represented by proxy at the meeting shall be the act of such class or series or classes or series, except as otherwise provided by law, the certificate of incorporation, these bylaws or the rules of any applicable stock exchange.

2.10 Stockholder Action By Written Consent Without A Meeting. Subject to the rights of the holders of the shares of any series of preferred stock or any other class of stock or series thereof that have been expressly granted the right to take action by written consent, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of stockholders of the corporation and may not be effected by any consent in writing by such stockholders.

2.11 Record Dates. In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the board of directors and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the board of directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the board of directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination.

If no record date is fixed by the board of directors, the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the board of directors may fix a new record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance with the provisions of Section 213 of the DGCL and this Section 2.11 at the adjourned meeting.

In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

2.12 Proxies. Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing

or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL. A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the stockholder.

2.13 List of Stockholders Entitled to Vote. The officer who has charge of the stock ledger of the corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; *provided, however*, if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of at least 10 days prior to the meeting: (i) on a reasonably accessible electronic network; *provided* that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation's principal place of business. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then a list of stockholders entitled to vote at the meeting shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then such list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

2.14 Inspectors of Election. Before any meeting of stockholders, the board of directors shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting may, and upon the request of any stockholder or a stockholder's proxy shall, appoint a person to fill that vacancy; *provided, further*, that, in any case, if no inspector or alternate is able to act at a meeting of stockholders, the chairperson of the meeting shall appoint at least one (1) inspector to act at the meeting.

Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath to execute faithfully the duties of inspector with strict impartiality and according to the best of his or her ability. Such inspectors shall:

- (i) determine the number of shares outstanding and the voting power of each, the number of shares represented at the meeting, the existence of a quorum, and the authenticity, validity, and effect of proxies;
- (ii) receive votes, ballots or consents;
- (iii) hear and determine all challenges and questions in any way arising in connection with the right to vote;
- (iv) count and tabulate all votes or consents;
- (v) determine when the polls shall close;
- (vi) determine the results; and
- (vii) do any other acts that may be proper to conduct the election or vote with fairness to all stockholders.

The inspectors of election shall perform their duties impartially, in good faith, to the best of their ability and as expeditiously as is practical. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all. Any report or certificate made by the inspectors of election is prima facie evidence of the facts stated therein.

ARTICLE III

DIRECTORS

3.1 Powers. The business and affairs of the corporation shall be managed by or under the direction of the board of directors, except as may be otherwise provided in the DGCL or the certificate of incorporation.

3.2 Number of Directors. The board of directors shall consist of one or more members, each of whom shall be a natural person. Unless the certificate of incorporation fixes the number of directors, the number of directors shall be determined from time to time by resolution of the board of directors. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 Election, Qualification and Term of Office Of Directors. Except as provided in Section 3.4 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director's successor is elected and qualified or until such director's earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of incorporation or these bylaws may prescribe other qualifications for directors.

In accordance with the provisions of the certificate of incorporation, the directors of the corporation shall be divided into three classes.

3.4 Resignation and Vacancies. Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation. A resignation is effective when the resignation is delivered unless the resignation specifies a later effective date or an effective date determined upon the happening of an event or events. A resignation which is conditioned upon the director failing to receive a specified vote for reelection as a director may provide that it is irrevocable. Unless otherwise provided in the certificate of incorporation or these bylaws, when one or more directors resign from the board of directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class shall be filled only by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. If the directors are divided into classes, a person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If at any time, by reason of death or resignation or other cause, the corporation should have no directors in office, then any officer or any stockholder or an executor, administrator, trustee or guardian of a stockholder, or other fiduciary entrusted with like responsibility for the person or estate of a stockholder, may call a special meeting of stockholders in accordance with the provisions of the certificate of incorporation or these bylaws, or may apply to the Delaware Court of Chancery for a decree summarily ordering an election as provided in Section 211 of the DGCL.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole board of directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the voting power of the voting stock at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.5 Place of Meetings; Meetings By Telephone. The board of directors may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 Regular Meetings. Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board of directors.

3.7 Special Meetings; Notice. Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairperson of the board of directors, the chief executive officer, the president, the secretary or a majority of the authorized number of directors, at such times and places as he or she or they shall designate.

Notice of the time and place of special meetings shall be:

- (i) delivered personally by hand, by courier or by telephone;
- (ii) sent by United States first-class mail, postage prepaid;
- (iii) sent by facsimile; or
- (iv) sent by electronic mail,

directed to each director at that director's address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the corporation's records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least 24 hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation's principal executive office) nor the purpose of the meeting.

3.8 Quorum; Voting. At all meetings of the board of directors, a majority of the total authorized number of directors shall constitute a quorum for the transaction of business. If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present. A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the board of directors, except as may be otherwise specifically provided by statute, the certificate of incorporation or these bylaws.

If the certificate of incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in these bylaws to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of the directors.

3.9 Board Action By Written Consent Without A Meeting. Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the board of directors, or of any committee thereof, may be taken without a meeting if all members of the board of directors or committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the board of directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form. Any person (whether or not then a director) may provide, whether through instruction to an agent or otherwise, that a consent to action will be effective at a future time (including a time determined upon the happening of an event), no later than 60 days after such instruction is given or such provision is made and such consent shall be deemed to have been given for purposes of this Section 3.9 at such effective time so long as such person is then a director and did not revoke the consent prior to such time. Any such consent shall be revocable prior to its becoming effective.

3.10 Fees and Compensation of Directors. Unless otherwise restricted by the certificate of incorporation or these bylaws, the board of directors shall have the authority to fix the compensation of directors.

3.11 Removal of Directors. A director may be removed from office by the stockholders of the corporation only as provided in the certificate of incorporation.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director's term of office.

ARTICLE IV

COMMITTEES

4.1 Committees of Directors. The board of directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board of directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in these bylaws, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 Committee Minutes. Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

4.3 Meetings and Action of Committees. Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of:

- (i) Section 3.5 (place of meetings and meetings by telephone);
- (ii) Section 3.6 (regular meetings);
- (iii) Section 3.7 (special meetings and notice);
- (iv) Section 3.8 (quorum; voting);
- (v) Section 3.9 (action without a meeting); and
- (vi) Section 7.5 (waiver of notice),

with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the board of directors and its members. However:

- (i) the time of regular meetings of committees may be determined either by resolution of the board of directors or by resolution of the committee;
- (ii) special meetings of committees may also be called by resolution of the board of directors; and
- (iii) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The board of directors or a committee may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

Any provision in the certificate of incorporation providing that one or more directors shall have more or less than one vote per director on any matter shall apply to voting in any committee or subcommittee, unless otherwise provided in the certificate of incorporation or these bylaws.

4.4 Subcommittees. Unless otherwise provided in the certificate of incorporation, these bylaws or the resolutions of the board of directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

ARTICLE V

OFFICERS

5.1 Officers. The officers of the corporation shall be a president and a secretary. The corporation may also have, at the discretion of the board of directors, a chairperson of the board of

directors, a vice chairperson of the board of directors, a chief executive officer, a chief financial officer, treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 Appointment of Officers. The board of directors shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Sections 5.3 of these bylaws, subject to the rights, if any, of an officer under any contract of employment.

5.3 Subordinate Officers. The board of directors may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the board of directors may from time to time determine.

5.4 Removal and Resignation of Officers. Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board of directors or, except in the case of an officer chosen by the board of directors, by any officer upon whom such power of removal may be conferred by the board of directors.

Any officer may resign at any time by giving written notice to the corporation. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 Vacancies In Offices. Any vacancy occurring in any office of the corporation shall be filled by the board of directors or as provided in Section 5.3.

5.6 Representation of Shares of Other Corporations. The chairperson of the board of directors, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the board of directors or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares or other equity interests of any other corporation or corporations or entity or entities standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 Authority and Duties of Officers. All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the board of directors or the stockholders and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the board of directors.

ARTICLE VI

STOCK

6.1 Stock Certificates; Partly Paid Shares. The shares of the corporation shall be represented by certificates; *provided* that the board of directors may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock represented by certificates shall be entitled to have a certificate signed by, or in the name of the corporation by the chairperson of the board of directors or vice-chairperson of the board of directors, or the president or a vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of the corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent or registrar at the date of issue. The corporation shall not have power to issue a certificate in bearer form.

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly-paid shares, or upon the books and records of the corporation in the case of uncertificated partly-paid shares, the total amount of the consideration to be paid therefor and the amount paid thereon shall be stated. Upon the declaration of any dividend on fully-paid shares, the corporation shall declare a dividend upon partly-paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

6.2 Special Designation On Certificates. If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; *provided, however*, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Within a reasonable time after the issuance or transfer of uncertificated stock, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to this Section 6.2 or Sections 151, 156, 202(a) or 218(a) of the DGCL or with respect to this Section 6.2 a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/

or rights. Except as otherwise expressly provided by law, the rights and obligations of the holders of uncertificated stock and the rights and obligations of the holders of certificates representing stock of the same class and series shall be identical.

6.3 Lost Certificates. Except as provided in this Section 6.3, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

6.4 Dividends. The board of directors, subject to any restrictions contained in the certificate of incorporation or applicable law, may declare and pay dividends upon the shares of the corporation's capital stock.

The board of directors may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

6.5 Transfer of Stock. Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by an attorney duly authorized, and, subject to Section 6.3 of these bylaws, if such stock is certificated, upon the surrender of a certificate or certificates for a like number of shares, properly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer.

6.6 Stock Transfer Agreements. The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

6.7 Registered Stockholders. The corporation:

- (i) shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner;
- (ii) shall be entitled to hold liable for calls and assessments the person registered on its books as the owner of shares; and
- (iii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII

MANNER OF GIVING NOTICE AND WAIVER

7.1 Notice of Stockholders' Meetings. Notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the corporation's records. An affidavit of the secretary or an assistant secretary of the corporation or of the transfer agent or other agent of the corporation that the notice has been given shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

7.2 Notice By Electronic Transmission. Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

(i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and

(ii) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice.

2 However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

(i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;

(ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;

(iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and

(iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

An “ **electronic transmission** ” means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient.

Notice by a form of electronic transmission shall not apply with respect to Sections 164, 296, 311, 312 or 324 of the DGCL.

7.3 Notice To Stockholders Sharing An Address. Except as otherwise prohibited under the DGCL, without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the corporation under the provisions of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any stockholder who fails to object in writing to the corporation, within 60 days of having been given written notice by the corporation of its intention to send the single notice, shall be deemed to have consented to receiving such single written notice.

7.4 Notice To Person With Whom Communication Is Unlawful. Whenever notice is required to be given, under the DGCL, the certificate of incorporation or these bylaws, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

7.5 Waiver of Notice. Whenever notice is required to be given under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders need be specified in any written waiver of notice or any waiver by electronic transmission unless so required by the certificate of incorporation or these bylaws.

ARTICLE VIII

FORUM FOR CERTAIN ACTIONS

Unless the corporation consents in writing to the selection of an alternative forum, the Court of Chancery (the “ Chancery Court ”) of the State of Delaware (or, in the event that the Chancery Court does not have jurisdiction, the federal district court for the District of Delaware or other state

courts of the State of Delaware) shall, to the fullest extent permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on behalf of the corporation, (ii) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or stockholder of the corporation to the corporation or to the corporation's stockholders, (iii) any action arising pursuant to any provision of the DGCL or the certificate of incorporation or these bylaws (as either may be amended from time to time) or (iv) any action asserting a claim against the corporation governed by the internal affairs doctrine. If any action the subject matter of which is within the scope of the preceding sentence is filed in a court other than a court located within the State of Delaware (a "Foreign Action") in the name of any stockholder, such stockholder shall be deemed to have consented to (a) the personal jurisdiction of the state and federal courts located within the State of Delaware in connection with any action brought in any such court to enforce the preceding sentence and (b) having service of process made upon such stockholder in any such action by service upon such stockholder's counsel in the Foreign Action as agent for such stockholder.

ARTICLE IX

INDEMNIFICATION

9.1 Indemnification of Directors and Officers In Third Party Proceedings. Subject to the other provisions of this Article IX, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "**Proceeding**") (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director or officer of the corporation, or is or was a director or officer of the corporation serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such Proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person's conduct was unlawful. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that such person's conduct was unlawful.

9.2 Indemnification of Directors and Officers in Actions by or in the Right of the Corporation. Subject to the other provisions of this Article IX, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person is or was a director or officer of the corporation, or is or was a director or officer of the corporation serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including

attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation; except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

9.3 Successful Defense. To the extent that a present or former director or officer of the corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding described in Section 9.1 or Section 9.2, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

9.4 Indemnification of Others. Subject to the other provisions of this Article IX, the corporation shall have power to indemnify its employees and agents to the extent not prohibited by the DGCL or other applicable law. The board of directors shall have the power to delegate to such person or persons as the board shall in its discretion determine the determination of whether employees or agents shall be indemnified.

9.5 Advance Payment of Expenses. Expenses (including attorneys' fees) actually and reasonably incurred by an officer or director of the corporation in defending any Proceeding shall be paid by the corporation in advance of the final disposition of such Proceeding upon receipt of a written request therefor (together with documentation reasonably evidencing such expenses) and an undertaking by or on behalf of the person to repay such amounts if it shall ultimately be determined that the person is not entitled to be indemnified under this Article IX or the DGCL. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents of the corporation or by persons serving at the request of the corporation as directors, officers, employees or agents of another corporation, partnership, joint venture, trust or other enterprise may be so paid upon such terms and conditions, if any, as the corporation deems appropriate. The right to advancement of expenses shall not apply to any claim for which indemnity is excluded pursuant to these bylaws, but shall apply to any Proceeding referenced in Section 9.6(ii) or 9.6(iii) prior to a determination that the person is not entitled to be indemnified by the corporation.

9.6 Limitation On Indemnification. Subject to the requirements in Section 9.3 and the DGCL, the corporation shall not be obligated to indemnify any person pursuant to this Article IX in connection with any Proceeding (or any part of any Proceeding):

(i) for which payment has actually been made to or on behalf of such person under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;

(ii) for an accounting or disgorgement of profits pursuant to Section 16(b) of the 1934 Act, or similar provisions of federal, state or local statutory law or common law, if such person is held liable therefor (including pursuant to any settlement arrangements);

(iii) for any reimbursement of the corporation by such person of any bonus or other incentive-based or equity-based compensation or of any profits realized by such person from the sale of securities of the corporation, as required in each case under the 1934 Act (including any such reimbursements that arise from an accounting restatement of the corporation pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the “ **Sarbanes-Oxley Act** ”), or the payment to the corporation of profits arising from the purchase and sale by such person of securities in violation of Section 306 of the Sarbanes-Oxley Act), if such person is held liable therefor (including pursuant to any settlement arrangements);

(iv) initiated by such person, including any Proceeding (or any part of any Proceeding) initiated by such person against the corporation or its directors, officers, employees, agents or other indemnitees, unless (a) the board of directors authorized the Proceeding (or the relevant part of the Proceeding) prior to its initiation, (b) the corporation provides the indemnification, in its sole discretion, pursuant to the powers vested in the corporation under applicable law, (c) otherwise required to be made under Section 9.7 or (d) otherwise required by applicable law; or

(v) if prohibited by applicable law; *provided, however* , that if any provision or provisions of this Article IX shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (1) the validity, legality and enforceability of the remaining provisions of this Article IX (including, without limitation, each portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable, that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (2) to the fullest extent possible, the provisions of this Article IX (including, without limitation, each such portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

9.7 Determination; Claim. If a claim for indemnification or advancement of expenses under this Article IX is not paid in full within [90] days after receipt by the corporation of the written request therefor, the claimant shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of expenses. The corporation shall indemnify such person against any and all expenses that are incurred by such person in connection with any action for indemnification or advancement of expenses from the corporation under this Article IX, to the extent such person is successful in such action, and to the extent not prohibited by law. In any such suit, the corporation shall, to the fullest extent not prohibited by law, have the burden of proving that the claimant is not entitled to the requested indemnification or advancement of expenses.

9.8 Non-Exclusivity of Rights. The indemnification and advancement of expenses provided by, or granted pursuant to, this Article IX shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under the

certificate of incorporation or any statute, bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advancement of expenses, to the fullest extent not prohibited by the DGCL or other applicable law.

9.9 Insurance. The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of the DGCL.

9.10 Survival. The rights to indemnification and advancement of expenses conferred by this Article IX shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

9.11 Effect of Repeal or Modification. A right to indemnification or to advancement of expenses arising under a provision of the certificate of incorporation or a bylaw shall not be eliminated or impaired by an amendment to the certificate of incorporation or these bylaws after the occurrence of the act or omission that is the subject of the civil, criminal, administrative or investigative action, suit or proceeding for which indemnification or advancement of expenses is sought, unless the provision in effect at the time of such act or omission explicitly authorizes such elimination or impairment after such action or omission has occurred.

9.12 Certain Definitions. For purposes of this Article IX, references to the “ **corporation** ” shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Article IX with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued. For purposes of this Article IX, references to “ **other enterprises** ” shall include employee benefit plans; references to “ **finances** ” shall include any excise taxes assessed on a person with respect to an employee benefit plan; and references to “ **serving at the request of the corporation** ” shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner “ **not opposed to the best interests of the corporation** ” as referred to in this Article IX.

ARTICLE X

GENERAL MATTERS

10.1 Execution of Corporate Contracts and Instruments. Except as otherwise provided by law, the certificate of incorporation or these bylaws, the board of directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute any document or instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

10.2 Fiscal Year. The fiscal year of the corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

10.3 Seal. The corporation may adopt a corporate seal, which may be altered by the board of directors. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

10.4 Construction; Definitions. Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term “ **person** ” includes both a corporation and a natural person.

ARTICLE XI

AMENDMENTS

These bylaws may be adopted, amended or repealed by the stockholders entitled to vote; *provided, however*, that the affirmative vote of the holders of at least sixty-six and two-thirds percent (66-2/3%) of the total voting power of outstanding voting securities, voting together as a single class, shall be required for the stockholders of the corporation to alter, amend or repeal, or adopt any provision of these bylaws. The board of directors shall also have the power to adopt, amend or repeal bylaws.

A bylaw amendment adopted by stockholders which specifies the votes that shall be necessary for the election of directors shall not be further amended or repealed by the board of directors.

BANDWIDTH INC.

CERTIFICATE OF AMENDMENT OF BYLAWS

The undersigned hereby certifies that she is the duly elected, qualified, and acting Secretary of Bandwidth Inc., a Delaware corporation and that the foregoing bylaws were amended and restated effective as of November 9, 2017 by the corporation's board of directors.

IN WITNESS WHEREOF , the undersigned has hereunto set her hand this 9th day of November, 2017.

By: /s/ W. Christopher Matton
W. Christopher Matton, Secretary

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

I, David A. Morken, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Bandwidth Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a—15(e) and 15d—15(e)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 14, 2017

/s/ David A. Morken

David A. Morken

Chief Executive Officer and Chairman (*Principal Executive Officer*)

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

I, Jeffrey A. Hoffman certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Bandwidth Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a—15(e) and 15d—15(e)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 14, 2017

/s/ Jeffrey A. Hoffman
Jeffrey A. Hoffman
Chief Financial Officer
(Principal Accounting and Financial Officer)

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), David A. Morken, Chief Executive Officer of Bandwidth Inc. (the “Company”), and Jeffrey A. Hoffman, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company’s Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2017, to which this Certification is attached as Exhibit 32.1 (the “Periodic Report”), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and
2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: December 14, 2017

/s/ David A. Morken
David A. Morken
Chief Executive Officer
(Principal Executive Officer)

/s/ Jeffrey A. Hoffman
Jeffrey A. Hoffman
Chief Financial Officer
(Principal Accounting and Financial Officer)