UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2017

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

Commission File Number: 001-38285

Bandwidth Inc.

(Exact name of registrant as specified in its charter)

Delaware	**56-2242657**
(State or other jurisdiction of incorporation or organization)	(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)

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

Title of each class	Name of each exchange on which registered
Class A Common Stock, par value $0.001 per share	NASDAQ Global Select Market

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

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

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

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 x No o

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 x No o

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

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

The aggregate market value of stock held by non-affiliates as of November 10, 2017, was $203.4 million based upon $21.19 per share, the closing price for such date on the NASDAQ Global Select Market.

As of January 31, 2018, 4,197,831 shares of the registrant’s Class A common stock and 13,441,976 shares of registrant’s Class B common stock were outstanding, respectively.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for the 2018 Annual Meeting of Stockholders are incorporated herein by reference in Part II and Part III of this Annual Report on Form 10-K to the extent stated herein. Such Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the registrant's fiscal year ended December 31, 2017.

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Special Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). All statements contained in this Annual Report on Form 10-K, 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 Annual Report on Form 10-K 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;
- our ability to comply with modified or new laws and regulations; and
- the increased expenses associated with being a public company.

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

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

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

PART I

Item 1. Business

Overview

We 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 Communications Platform-as-a-Service ("CPaaS") space through our innovation-rich culture and focus on empowering enterprises with end-to-end communications solutions.

As technologies evolve and new mobile applications and connected devices proliferate, enterprises must adapt and innovate their communications solutions to create a “connected” experience anywhere, anytime, on any device. Enterprises looking to capitalize on trends such as voice as an interface and Application-to-Person ("A2P") messaging need solutions that are reliable, secure, scalable and cost-efficient. Most software-powered communications providers rely heavily on leased networks and cannot provide enterprise-grade service and support. We believe traditional large-scale network providers lack the capabilities to build robust software platforms for agile development of communications solutions. Enterprises focus on their core businesses, but lack the technical know-how or strategic flexibility to build the customized solutions they require in-house. As a result, enterprises need a third-party, end-to-end, cloud-based software solution that eliminates the complexity and expense of building and maintaining their own communications platform.

Our solutions address enterprises’ communications needs, which we believe are shaping the future of how enterprises connect through embedded voice and text for applications and devices. At the core of our solutions are our communications software APIs, which allow companies to build products and services on top of our cloud-based, out-of-the-box software. Our software APIs include pre-defined functions that are easily customizable for specific use cases without the challenge and expense of building and deploying complex code. Moreover, our platform collects and analyzes terabytes of call and messaging data records in real-time and provide a seamless integration to CRM and Business Intelligence analytics tools to provide meaningful data driven actionable insights for critical business decisions. Customers can then launch and scale applications and solutions with reliability using our own nationwide IP voice network. 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.

Our customers currently include only enterprises, which includes large enterprises, small and medium-sized businesses, emerging technology companies and any other business. Our customers operate in a diverse set of industries, including technology, communications, hospitality and services, that need to launch and scale robust communications experiences. Our customers choose Bandwidth because we empower them to embed seamless communications within their products and services in a reliable, flexible, scalable and cost-efficient manner. Our customers include Google Voice, Microsoft Office 365 Skype for Business, Cisco-Webex, Dialpad, RingCentral, GoDaddy, Kipsu, Rover and ZipRecruiter, among many others. We do not currently have any consumer or residential customers, although our enterprise customers may utilize our solutions to serve their own consumer or residential customers or end users.

Our usage-based revenue model allows us to grow with our customers and increase our revenue base as our customers deepen their usage of our solutions. Our dollar-based net retention rate, which measures our customers' increased utilization of our platform, was 115%, 111% and 107% for the years ended December 31, 2015, 2016 and 2017, respectively.

We have continued growing our business in recent periods. For the years ended December 31, 2015, 2016 and 2017, our revenue was $137.8 million, $152.1 million and $163.0 million, respectively, and our net (loss) income was $(6.7) million, $22.4 million and $6.0 million, respectively.

Segments

We have two reportable segments, CPaaS and Other. Segments are evaluated based on revenue and gross profit. We do not allocate operating expenses, interest expense or income tax expense to our segments. Accordingly, we do not report such information. 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. 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. See Note 9, "Segment and Geographic Information," in our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, for additional information about our segments.

Our Platform

Our Bandwidth Communications Platform empowers enterprises to create and scale voice or text communications services across any application and device. Our software platform and IP voice network enable our enterprise customers to rapidly develop and deploy real-time and mission-critical, software-powered communications solutions. Our sophisticated and easy-to-use software APIs allow enterprises to enhance their products and services by incorporating advanced voice and text capabilities. 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.

Our cloud-based platform is a proprietary CPaaS offering consisting of voice and messaging solutions:

Voice Software API. We provide flexible software APIs that are used to build voice calling within applications, innovative call flows between users or machines, call recording, text-to-speech for interactive voice response, call detail records, conference calling or bridging and more. We provide the ability to have customized high-quality call routing for business voice use cases and global reach. Our voice quality monitoring service provides tools and processes for network quality tests and proactive tuning. While we provide a wide range of functionalities, some of the common use cases are:

- ***Enabling local and toll-free numbers via software API****:* Our platform empowers enterprises with a capability to activate and manage phone numbers instantly and at scale. Using our easy to use software APIs, our enterprise customers can easily add additional lines to their business as well as for their end users.

- ***Automating voice communication while preserving privacy***: Our software APIs enable voice communication capabilities from a mobile application to an individual or a group with or without disclosing personal identity.

- ***Embedding 'click-to-call' communication feature****:* We enhance our enterprise customers mobile and web marketing capabilities by embedding click-to-call functionality in their customer outreach, including advertising campaigns that enables them to connect with consumers instantly.

- ***Real-time call analytics****:* We provide our enterprise customers with real-time call analytics through our dashboard that correlates the raw data from calls with CRM records, including the call duration, customer sentiment and other attributes, in order to provide meaningful contextual sales and other business insights.

Messaging API. Our software APIs for messaging deliver a complete wireless experience, including: delivery receipts, SMS, MMS, long text support, emoji support and bi-directional unicode (international characters) and short codes interoperability. While we provide a wide range of functionalities, some of the common use cases are:

- ***Automated real-time notification and alerts****:* Our software APIs empower our enterprise customers with predefined functionalities to send and receive text messages to and from an application to an individual or a group. Our customers often build more customized use cases on top of our predefined use cases. For instance, ZipRecruiter uses this functionality to update job seekers of available jobs in real time via automated text alerts.

- ***Two-factor authentication***: We enable enterprises to verify the identity and maintain security of end users through our software-based SMS verification service that sends unique codes to end users in order to log in to mobile and web applications.

- ***Group messaging***: Enterprises utilize our platform to collaborate with their end users on a real-time basis by enabling group messaging within their user community to share messages, videos, carry out polls and surveys amongst other uses without leaving the application.

911 Software API. We are the only software platform that provides complete communications solutions with integrated 911 services. We can instantly connect numbers or applications to emergency services with reliable and accurate emergency routing. Our Dynamic Geospatial Routing uses geocoding to enable real-time routing based on X,Y coordinates of the caller and defined Public Safety Access Point boundaries. Our Advanced "Next Generation 911" "i3"-ready NENA i2 "Enhanced" service network covers approximately 98% of the U.S.

Key Benefits of Our Software Platform

Our Bandwidth Communications Platform provides the following benefits to the enterprises we serve:

- *Easy to Build and Deploy*. Our easy-to-use, intuitive software APIs are ready to launch and scale from day one. We enable enterprises to rapidly and easily scale communications functionalities to a vast range of applications and devices. Our technology requires minimal lines of code to build customized applications, which allows for rapid composition of customized solutions and seamless embedding within other applications.

- *Easy to Scale*. We enable enterprises to easily scale nationwide at launch, without sacrificing quality, while meeting the most stringent requirements. We can deliver full end-to-end automation for even the largest of enterprises using our IP voice network, which is the largest of any CPaaS provider based on the number of rate centers, a measure for the footprint covered by our IP voice network. We are able to support high user volumes without impacting deliverability. Our software, built on our own IP voice network, removes complexity, eliminates performance degradation and increases cost efficiencies at scale.

- *Flexibility*. Our software APIs are easy to deploy and use and allow for the creation of solutions to address a broad array of use cases. Our software can be implemented directly into product workflow for a variety of custom solutions such as creation of virtual call centers, group messaging and dynamic call location routing. We enable developers to easily and rapidly innovate with our platform.

Key Benefits of Our Network

Our owned and managed IP voice network provides the following benefits to the enterprises we serve:

- *Enhanced Quality and Reliability*. We offer greater levels of quality and delivery assurance than providers offering services across the public Internet or through partnerships. As a result, the enterprises we serve have enjoyed 99.9% network uptime in 2017 and we have not experienced any material system failures in the past three years.

- *Total Accountability.* The ability to vertically integrate our software platform with our own IP voice network provides us with a differentiated ability to continuously monitor, report and resolve any software- or network-related issues on a real-time basis. For our enterprise customers, having a single platform solution for their entire communications requirements, including software and network, provides tremendous value with respect to time and financial resources. Our service-level agreements with our enterprise customers assures that we provide high quality service and gives them peace of mind and confidence in our service.

- *Lower Total Cost to Our Customers*. The differentiated pairing of our software combined with owning the delivery capability through our IP voice network leads to significant savings for the enterprises we serve as compared to our competitors. Our IP voice network lowers total cost to our customers as compared to our competitors because of our reduced capital expenditure requirements and lower marginal costs at scale, which we are able to pass on to our customers.

Our Competitive Strengths

In our 19 years of business, we have prided ourselves on maintaining a start-up culture and our focus on continuous innovation. We have innovated on our CPaaS offerings to empower our enterprise customers with the most comprehensive software-powered communications platform that integrates seamlessly with one of the largest IP voice networks in the U.S. that we have built and operate. Our innovation-rich culture, customer-centric solutions and track record of successful execution provide us with the following competitive strengths:

- *Highly Scalable Platform Built for the Enterprise.* We built our Bandwidth Communications Platform from the ground up as an enterprise-grade cloud application. As a result, our deployment is fast, our software APIs are flexible and easy-to-use, and we enable enterprises to launch and scale on day one. Our software APIs allow the enterprise customers we serve to grow with flexibility and seamlessly embed communications in their applications or devices. Our scalable platform allows us to serve large-scale Internet companies and cloud service providers.

- *Broadest, Most Complete Solutions in the Industry.* We provide enterprises the broadest, most complete communications services solutions in the industry through our integrated software and IP voice network. Our large library of voice and text APIs enables our customers to incorporate into their products and services a broad range of capabilities not otherwise attainable.

- *Purpose-Built IP Voice Network.* Our Bandwidth Communications Platform's IP voice network, which we own and operate nationwide, supports our ability to scale at a reliable and consistent quality for the enterprises we serve. The control and scale we have over our own IP voice network integrated with our Bandwidth Communications Platform provides us distinct competitive advantages that include consistent high quality, in-depth enterprise support, real-time network visibility and economies of scale.

- *Deep Experience and Expertise in Voice and Messaging.* The combination of our versatile software API platform and our IP voice network control allows us to offer not just best efforts, but best-in-class voice and messaging solutions for enterprises. Our senior leadership team has a combined 135 years of industry experience and an average tenure with Bandwidth of 10 years.

- *Growing, Long-Term Relationships with Low Customer Churn.* We deliver comprehensive solutions that address the unique and complex needs of the enterprises we serve. As a result, these enterprises have continued to innovate and grow with our platform over extended timeframes. Our relationship with each of the enterprises we serve often expands across different product suites, divisions and use cases over time. Our customers include large enterprises and small and medium-sized businesses across various industries, and we rarely lose customers that have been on our platform for more than three months. For example, our largest enterprise customer has been on our platform for more than ten years. Based on surveys conducted after customer interactions in 2017, our customers have expressed a 97% satisfaction rate.

- *CPaaS-Based 911 Network Capabilities.* We believe we are the only CPaaS software provider with 911 capabilities. We believe our 911 capabilities provide a significant advantage as compared to software platform providers that are enabling residential voice services through new connected device experiences. Moreover, our dynamic geospatial routing capability routes 911 calls based on a real-time location of the caller to produce industry-leading results.

Our Growth Strategy

- *Expand Existing Enterprise Relationships.* We will continue to expand our relationships with our existing enterprise customers. For example, enterprises often initially purchase only our voice solution and later expand to also purchase our messaging and 911 services. Additionally, we are able to help enterprises scale efficiently and offer their solutions to more of their customers as they grow.

- *Grow Our Enterprise Customer Base.* We believe there is a substantial opportunity to increase our enterprise customer base across a broad range of industries and companies. We plan to continue to grow and invest in our direct sales force and marketing to increase our enterprise customer base.

- *Continue to Innovate Our Platform.* We are committed to building on our track record of leveraging our innovative product capabilities to meet our customers' needs, just as we have done throughout our history, through dramatic waves of change in communications technology. We were early to deploy software-based networks and to offer hosted cloud-based voice services, while building out one of the fastest growing IP voice networks over the last ten years. Our team has continued to adapt to a dynamic environment to grow our business, and we intend to invest in continued development of our platform and product features to support new use cases such as virtual personal assistants ("VPAs") and help our enterprise customers succeed as communications technologies evolve.

- *Continue Our Focus on Enterprise Customer Satisfaction.* We intend to continue focusing on delivering world-class services and support to the enterprises we serve to ensure a high level of satisfaction. We believe that satisfied customers provide vital product feedback, purchase additional services, renew contracts at a high rate and provide broad advocacy and new customer referrals for our business.

- *Explore the Development and Growth of Our International Offerings.* Today, our international services are limited to outbound international calling and outbound international messaging. Some of our enterprise customers operate globally or have plans to so. While we do not have specific expansion plans, we are actively exploring opportunities, including those where we might have a cost or quality advantage in serving our customers.

- *Pursue Acquisitions and Strategic Investments Selectively.* We may selectively pursue acquisitions and strategic investments in businesses and technologies that strengthen our platform.

Our Customers

We have a broad and diversified customer base. We benefit from longstanding relationships with well-recognized enterprise customers, as well as small and medium-sized businesses. Many of our customers have multi-year contracts, with no single customer representing more than 8% of CPaaS revenue for the year ended December 31, 2017.

Our management is highly focused on creating and maintaining strategic partnerships beyond standard transactional customer relationships. We empower enterprises to create, scale and operate voice or text communications services across any mobile application or connected device and this reinforces our customer relationships.

The majority of our customers sign master service agreements ("MSAs") that contain standard terms and conditions, including billing and payment, default, termination, limitations of liability, confidentiality, assignment and notification, and other key terms and conditions. Customers order specific services in separate service order forms that incorporate the applicable MSA. Each service order form details the minimum contract duration, any applicable monthly recurring charge and applicable non-recurring charges. The terms and conditions for each order are also specified in the applicable service order form.

Sales and Marketing

Our sales and marketing teams work together to identify and establish relationships with prospects, acquire new enterprise customers, expand relationships with existing enterprises and integrate them with our Bandwidth Communications Platform. Our marketing staff generates leads through our website, online marketing campaigns, webinars, sponsored events, white papers, public relations and other outbound lead development efforts. Our marketing staff also targets companies with products that could use our services for the first time or to displace our competitors. Our marketing initiatives enhance awareness and adoption of our services.

We engage potential customers and existing customers through an enterprise sales approach. Our sales executives directly engage C-level executives and other senior business, product and technical decision makers responsible for the end user experience and financial results at their enterprises. Our sales executives work to educate these decision makers and their teams about the benefits of using our Bandwidth Communications Platform to launch and scale robust communications experiences. Our sales team includes sales development, inside sales, field sales and sales engineering personnel.

As of December 31, 2017, we had 63 employees in our sales and marketing organization.

Research and Development

Our ability to compete depends in large part on our continuous commitment to research and development ("R&D"). We also seek to continuously enhance our existing services and develop new products and services. Our product and network teams are responsible for the design, development, testing and release of our platform. These teams closely coordinate with our executive management, which is responsible for creating a vision for our platform, and with our sales and marketing teams, which relay enterprise demands and possible new use cases or enhancements. Our development efforts focus on the availability and resiliency of our Bandwidth Communications Platform and our IP voice network, including infrastructure, ease-of-use and flexibility, end-user experience and ability to integrate with other enterprise systems.

As of December 31, 2017, we had 66 employees in our research and development organization.

Competition

The CPaaS market is rapidly evolving and increasingly competitive. We believe that the principal competitive factors in our market are:

- platform scalability, reliability and performance;
- network control and quality;
- completeness of offering;
- ease of integration and programmability;
- product features;
- customer support;
- ability to deliver measurable value and savings;
- the cost of deploying and using our service offerings;
- the strength of sales and marketing efforts;

- brand awareness and reputation; and
- credibility with product executives and developers.

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

Our competitors fall into two primary categories:

- CPaaS companies that offer a narrower set of software APIs, less robust customer support and fewer other features while relying on third-party networks and physical infrastructure; and
- network service providers that offer limited developer functionality on top of their own networks and physical infrastructure, such as AT&T, Level 3 and Verizon.

Some of our competitors have greater financial, technical and other resources, greater geographic reach, greater name recognition, larger sales and marketing budgets and larger intellectual property portfolios. As a result, certain of our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or enterprise requirements. In addition, some competitors may offer products or services that address one or a limited number of functions at lower prices, with greater depth than our services or geographies where we do not operate. With the introduction of new products and services and new market entrants, we expect competition to intensify in the future. Moreover, as we expand the scope of our platform, we may face additional competition.

Intellectual Property

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

As of December 31, 2017, we had eight U.S. patents and five U.S. patent applications pending. In addition, as of December 31, 2017, we had fifteen registered trademarks and one pending trademark application in the United States.

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

Despite our efforts to protect our technology and proprietary rights through intellectual property rights, licenses and other contractual protections, unauthorized parties may still copy or otherwise obtain and use our software and other technology. Any significant impairment of our intellectual property rights could harm our business or our ability to compete. Further, companies in the communications and technology industries may own large numbers of patents, copyrights and trademarks and may frequently threaten litigation, or file suit against us based on allegations of infringement or other violations of intellectual property rights. In the future, we may face allegations that we have infringed the intellectual property rights of third parties, including our competitors and non-practicing entities.

Employees

As of December 31, 2017, we had a total of 378 employees, all of whom are located in the United States. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We have not experienced any work stoppages, and we consider our relations with our employees to be good.

Information about Geographic Revenue

Information about geographic revenue is set forth in Note 9, "Segment and Geographic Information," in our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Regulatory

General

We and the communications services that we provide through our software APIs are subject to many U.S. federal and state and foreign laws and regulations. These laws and regulations may involve telecommunications, as well as privacy, data protection, intellectual property, competition, consumer protection, taxation or other subjects. Many of the laws and regulations to which we and the communications services that we provide through our software APIs are subject are still evolving and being tested in courts and could be interpreted in ways that could harm our business. In addition, the application and interpretation of these laws and regulations often are uncertain, particularly in the new and rapidly evolving industry in which we operate. Because laws and regulations have continued to develop and evolve rapidly, it is possible that we may not be, or may not have been, compliant with each such applicable law or regulation.

Federal Telecommunications Regulation

The Federal Communications Commission ("FCC") has jurisdiction over interstate and international telecommunications services. We have obtained FCC authorization to provide services on a facilities and resale basis, as well as via a wireless telecommunications license.

Under the Communications Act of 1934, as amended by the Telecommunications Act of 1996 (the “1996 Act”), any entity, including cable television companies and electric and gas utilities, may enter any telecommunications market, subject to reasonable state regulation of safety, quality and consumer protection. The industry continues to evolve toward new services built upon IP technologies. With these technological advances, there have been challenges to the traditional regulatory structure under the 1996 Act. One of the challenges that has arisen is fraud and abuse in the form of illegal robocalling and unwanted text messaging. The FCC has initiated several proceedings to understand and address fraud and abuse, illegal robocalling and unwanted text messaging. Much of the FCC’s efforts to thwart illegal robocalling involve or relate to the Telephone Consumer Protection Act of 1991 (the "TCPA"), which restricts telemarketing calls and the use of automatic text messages without the recipient’s proper consent. The scope and interpretation of these laws and regulations continue to evolve and develop. If we do not comply with these laws or regulations or if we become liable under these laws or regulations due to the failure of our customers to comply with these laws by obtaining the recipient’s proper consent, we could face direct liability.

VoIP Regulation. Some of our communications services provided through our software APIs may qualify as Voice-over Internet Protocol ("VoIP"). The FCC has imposed various regulatory requirements on VoIP providers that previously applied only to traditional telecommunications providers, such as obligations to provide 911 functionality, to contribute to the federal universal service fund, to comply with regulations relating to local number portability, to abide by the FCC's service discontinuance rules, to contribute to the Telecommunications Relay Services fund and to abide by the regulations concerning Customer Proprietary Network Information, outage reporting, access for persons with disabilities and the Communications Assistance for Law Enforcement Act. In some instances, these regulations indirectly affect us because they directly apply to our customers. Several state public utility commissions are conducting regulatory proceedings that could affect our rights and obligations, or the rights and obligations of our customers, with respect to IP-based voice applications. Specifically, some states have taken the position that the "local" component of VoIP service is subject to traditional regulations applicable to local telecommunications services, such as the obligation to pay intrastate universal service fees. We cannot predict whether the FCC or state public utility commissions will impose additional requirements, regulations or charges upon our provision of services related to IP communications.

Universal Service. Some of our services are subject to federal and state regulations that implement universal service support for access to communications services in rural and high-cost areas and to low-income consumers at reasonable rates; and access to advanced communications services by schools, libraries and rural health care providers. In some instances, these regulations indirectly affect us because they directly apply to our customers. The FCC assesses us a percentage of interstate and international revenue we receive from retail customers as our contribution to the Federal Universal Service Fund, which assessments we generally pass on to our customers. Additionally, the FCC has ruled that states may assess contributions to their state Universal Service Funds on VoIP providers' intrastate revenue. Any change in the assessment methodology may affect our revenue and expenses, but at this time it is not possible to predict the extent we would be affected, if at all.

Intercarrier Compensation. Telecommunications carriers compensate one another for traffic carried on each other's networks. Interexchange carriers pay access charges to local telephone companies for long distance calls that originate and terminate on local networks. Local telephone companies historically have charged one another for local and Internet-bound traffic terminating on each other's networks. The methodology by which carriers have compensated one another for exchanged traffic, whether it be for local, intrastate or interstate traffic, has been under review by the FCC for over a decade and continues to be subject to on-going reform efforts.

In November 2011, the FCC released its Universal Service Fund/Intercarrier Compensation Transformation Order (the "USF/ICC Transformation Order"). Along with addressing other matters, the USF/ICC Transformation Order established a prospective intercarrier compensation framework for terminating switched access and VoIP traffic. Under the USF/ICC Transformation Order and subsequent related FCC orders, most terminating switched access charges and all reciprocal compensation charges were capped at then-current levels, and will be reduced to zero over, as relevant to us, generally a six-year transition period that began July 1, 2012.

Pursuant to the USF/ICC Transformation Order, VoIP, while remaining unclassified as either an information or a telecommunications service, was prospectively categorized as either local or non-local traffic. If "local", then VoIP traffic is subject to reciprocal compensation; if "non-local", then it is subject to interstate rates, thus eliminating any intrastate access rate applicable to VoIP. The USF/ICC Transformation Order did not address the treatment of VoIP retroactively. During 2015, the FCC issued clarifications concerning the rating of VoIP traffic that were favorable to us. Those clarifications were appealed, and in November 2016 the appellate court vacated the FCC's 2015 clarification and ruled that additional action by the FCC is required. At this time, we cannot predict the outcome of the FCC actions.

State Telecommunications Regulation

The 1996 Act intended to increase competition in the telecommunications industry, especially in the local market. With respect to local services, incumbent local exchange carriers (or “ILECs”) such as AT&T are required to allow interconnection to their incumbent networks and to provide access to network facilities, as well as several other pro-competitive measures.

State regulatory agencies have jurisdiction when our facilities and services are used to provide intrastate telecommunications services. A portion of our traffic may be classified as intrastate telecommunications and therefore subject to state regulation. We are authorized to provide competitive local exchange telecommunications services in 49 states and the District of Columbia, and thus are subject to these additional regulatory regimes. Changes in applicable state regulations could affect our business.

In addition, we need to maintain interconnection agreements with ILECs where we wish to provide service, which are subject to approval by individual states and subject to state arbitration in the event of disputes. We expect that we should be able to negotiate or otherwise obtain renewals or successor agreements through adoption of others’ contracts or through arbitration proceedings, although the rates, terms and conditions applicable to interconnection and the exchange of traffic with certain ILECs could change significantly in certain cases.

Corporate Information

Bandwidth Inc. was founded in July 2000 and incorporated in Delaware on March 29, 2001. Our principal executive offices are located at 900 Main Campus Drive Raleigh, NC 27606, and our telephone number is (800) 808-5150. Our website address is www.bandwidth.com. Information contained on, or that can be accessed through, our website does not constitute part of this Annual Report on Form 10-K.

Available Information

The following information can be found, free of charge, on our corporate website at https://www.bandwidth.com/:

- our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission;
- our policies related to corporate governance, including our Code of Business Conduct and Ethics applying to our directors, officers and employees (including our principal executive officer and principal financial and accounting officer) that we have adopted to meet applicable rules and regulations;
- the charters of the Audit and Compensation Committees of our Board of Directors.

In addition, copies of our annual report will be made available, free of charge, upon written request.

We intend to satisfy the applicable disclosure requirements regarding amendments to, or waivers from, provisions of our Code of Business Conduct and Ethics by posting such information on our website. The information contained on our website or accessible through our website is not incorporated by reference into this Annual Report on Form 10-K and should not be considered part of this report.

Item 1A. Risk Factors

A description of the risks and uncertainties associated with our business is set forth below. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our condensed consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. The risks and uncertainties described below may not be the only ones we face. If any of the risks actually occur, our business, financial condition, results of operations and prospects could be materially and adversely affected. In that event, the market price of our Class A common stock could decline.

Risks Related to Our Business

The success of our growth and expansion plans depends on a number of factors that are beyond our control.

We have grown our business considerably over the last several years. We cannot guarantee that we will be able to maintain our growth or that we will choose to target the same pace of growth in the future. Our success in achieving continued growth depends upon several factors including:

- the availability and retention of qualified and effective personnel with the expertise required to sell and operate effectively or successfully;
- the overall economic health of new and existing markets;
- the number and effectiveness of competitors;
- the pricing structure under which we will be able to purchase services required to serve our customers;
- the availability to us of technologies needed to remain competitive; and
- federal and state and regulatory conditions, including the maintenance of state regulation that protects us from unfair business practices by traditional network service providers or others with greater market power who have relationships with us as both competitors and suppliers.

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

The market for cloud communications is rapidly evolving, significantly fragmented and highly competitive, with relatively low barriers to entry in some segments. The principal competitive factors in our market include completeness of offering, credibility with developers, global reach, ease of integration and programmability, product features, platform scalability, reliability, security and performance, brand awareness and reputation, the strength of sales and marketing efforts, customer support, as well as the cost of deploying and using our services. Our competitors fall into two primary categories:

- CPaaS companies that offer a narrower set of software APIs, less robust customer support and fewer other features while relying on third-party networks and physical infrastructure; and
- network service providers that offer limited developer functionality on top of their own networks and physical infrastructure, such as AT&T, Level 3 and Verizon.

Some of our competitors and potential competitors are larger and have greater name recognition, longer operating histories, more established customer relationships, a larger global reach, larger budgets and significantly greater resources than we do. In addition, they have the operating flexibility to bundle competing products and services at little or no incremental cost, including offering them at a lower price as part of a larger sales transaction. As a result, our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In addition, some competitors may offer services that address one or a limited number of functions at lower prices, with greater depth than our services or in different geographies. Our current and potential competitors may develop and market new services with comparable functionality to our services, and this could lead to us having to decrease prices in order to remain competitive. In addition, some of our competitors have lower list prices than us, which may be attractive to certain customers even if those services have different or lesser functionality. If we are unable to maintain our current pricing due to the competitive pressures, our margins will be reduced and our business, results of operations and financial condition would be adversely affected. Customers utilize our services in many ways, and use varying levels of functionality that our services offer or are capable of supporting or enabling within their applications. Customers that use many of the features of our services or use our services to support or enable core functionality for their applications may have difficulty or find it impractical to replace our services with a competitor's services, while customers that use only limited functionality may be able to more easily replace our services with competitive offerings.

With the introduction of new services and new market entrants, we expect competition to intensify in the future. In addition, some of our customers choose to use our services and our competitors' services at the same time. Moreover, as we expand the scope of our services, we may face additional competition. Further, customers and consumers may choose to adopt other forms of electronic communications or alternative communication platforms, including developing necessary networks and platforms in-house.

Furthermore, if our competitors were to merge such that the combined entity would be able to compete fully with our service offering, then our business, results of operations and financial condition may be adversely effected. If one or more of our competitors were to merge or partner with another of our competitors, the change in the competitive landscape could also adversely affect our ability to compete effectively. In addition, pricing pressures and increased competition generally could result in reduced revenue, reduced margins, increased losses or the failure of our services to achieve or maintain widespread market acceptance, any of which could harm our business, results of operations and financial condition.

We presently operate in the United States and provide certain limited services in Canada. Our IP voice network, which is at the core of our product offerings, is located in the United States. Our current and potential competitors have developed and may develop in the future product solutions that are available internationally as well as domestically. To the extent that customers seek product solutions that include support and scaling internationally, they may choose to use other service providers to fill their communication service needs. Furthermore, while we believe the U.S. market is sufficiently large and expanding to allow us to continue to grow our business, we may face slower growth due to our relative lack of exposure to international markets. Each of these factors could lead to reduced revenue, slower growth and lower brand name recognition amongst our industry competitors, any or all of which could harm our business, results of operations and financial condition.

If we are unable to attract new customers in a cost-effective manner, then our business, results of operations and financial condition would be adversely affected.

In order to grow our business, we must continue to attract new customers in a cost-effective manner. We use a variety of marketing channels to promote our services, our Bandwidth Communications Platform, and we periodically adjust the mix of our marketing programs. If the costs of the marketing channels we use increase dramatically, then we may choose to use alternative and less expensive channels, which may not be as effective as the channels we currently use. As we add to or change the mix of our marketing strategies, we may need to expand into more expensive channels than those we are currently in, which could adversely affect our business, results of operations and financial condition. We will incur marketing expenses before we are able to recognize any revenue that the marketing initiatives may generate, and these expenses may not result in increased revenue or brand awareness. We have made in the past, and may make in the future, significant expenditures and investments in new marketing campaigns. We cannot assure you that any new investments in sales and marketing, including any increased focus on enterprise sales efforts, will lead to the cost-effective acquisition of additional customers or increased sales or that our sales and marketing efficiency will be consistent with prior periods. If we are unable to maintain effective marketing programs, then our ability to attract new customers could be materially and adversely affected, our advertising and marketing expenses could increase substantially and our results of operations may suffer.

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

We have been developing and providing a cloud-based platform that enables developers and organizations to integrate voice and messaging communications capabilities into their software applications. This market is relatively new and unproven and is subject to a number of risks and uncertainties. We believe that our future success will depend in large part on the growth, if any, of this market. For example, the utilization of software APIs by developers and organizations to build communications functionality into their applications is still relatively new, and developers and organizations may not recognize the need for, or benefits of, our services and platform. Moreover, if they do not recognize the need for and benefits of our services and platform, they may decide to adopt alternative services and/or develop the necessary services in-house to satisfy their business needs. In order to grow our business and expand our market position, we intend to focus on educating enterprise customers about the benefits of our services and platform, expanding the functionality of our services and bringing new technologies to market to increase market acceptance and use of our platform. Our ability to expand the market that our services and platform address depends upon a number of factors, including the cost, performance and perceived value associated with such services and platform. The market for our services and platform could fail to grow significantly or there could be a reduction in demand for our services and platform as a result of a lack of customer acceptance, technological changes or challenges, competing services, platforms and services, decreases in spending by current and prospective customers, weakening economic conditions and other causes. If our market does not experience significant growth or demand for our services and platform decreases, then our business, results of operations and financial condition could be adversely affected.

We must increase the network traffic and resulting revenue from the services that we offer to realize our targets for anticipated revenue growth, cash flow and operating performance.

We must increase the network traffic and resulting revenue from our inbound and outbound voice calling, text messaging, emergency voice functions, telephone numbers and related services at acceptable margins to realize our targets for anticipated revenue growth, cash flow and operating performance. If:

- we do not maintain or improve our current relationships with existing key customers;
- we are not able to expand the available capacity on our network to meet our customers' demands in a timely manner;
- we do not develop new large wholesale and enterprise customers; or

- our customers determine to obtain these services from either their own network or from one of our competitors,

then we may be unable to increase or maintain our revenue at acceptable margins.

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

Our ability to grow and generate incremental revenue depends, in part, on our ability to maintain and grow our relationships with existing customers and to have them increase their usage of our Bandwidth Communications Platform. If our customers do not increase their use of our services, then our revenue may decline and our results of operations may be harmed. Customers generally are charged based on the usage of our services. Most of our customers do not have long-term contractual financial commitments to us and, therefore, most of our customers may reduce or cease their use of our services at any time without penalty or termination charges. We cannot accurately predict customers' usage levels and the loss of customers or reductions in their usage levels of our services may each have a negative impact on our business, results of operations and financial condition. If a significant number of customers cease using, or reduce their usage of, our services, then we may be required to spend significantly more on sales and marketing than we currently plan to spend in order to maintain or increase revenue from customers. Such additional sales and marketing expenditures could adversely affect our business, results of operations and financial condition.

If we are unable to increase the revenue that we derive from enterprises, our business, results of operations and financial condition may be adversely affected.

We currently generate all of our revenue from enterprise customers. Our ability to expand our sales to enterprise customers will depend, in part, on our ability to effectively organize, focus and train our sales and marketing personnel and to attract and retain sales personnel with experience selling to enterprises. We believe that there is significant competition for experienced sales professionals with the skills and technical knowledge that we require. Our ability to achieve significant revenue growth in the future will depend, in part, on our ability to recruit, train and retain a sufficient number of experienced sales professionals, particularly those with experience selling to enterprises. In addition, even if we are successful in hiring qualified sales personnel, new hires require significant training and experience before they achieve full productivity, particularly for sales efforts targeted at enterprises and new territories. Our recent hires and planned hires may not become as productive as quickly as we expect and we may be unable to hire or retain sufficient numbers of qualified individuals in the future in the markets where we do business.

With respect to enterprise customers, the decision to adopt our services may require the approval of multiple technical and business decision makers, including security, compliance, procurement, operations and IT. In addition, while enterprise customers may quickly deploy our services on a limited basis, before they will commit to deploying our services at scale, they often require extensive education about our services and significant customer support time, engage in protracted pricing negotiations and seek to secure readily available development resources. In addition, sales cycles for enterprises are inherently complex, and some enterprise customers may not generate revenue that justifies the cost to obtain such customers. In addition, these complex and resource-intensive sales efforts could place additional strain on our limited product and engineering resources. Further, enterprises, including some of our customers, may choose to develop their own solutions that do not include our services. They also may demand reductions in pricing as their usage of our services increases, which could have an adverse impact on our gross margin. Our efforts to sell to these potential customers may not be successful. If we are unable to increase the revenue that we derive from enterprises, then our business, results of operations and financial condition may be adversely affected.

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

Our ability to attract new customers and increase revenue from existing customers depends in part on our ability to enhance and improve our existing services, increase adoption and usage of our services and introduce new services. The success of any enhancements or new services depends on several factors, including timely completion, adequate quality testing, actual performance quality, market-accepted pricing levels and overall market acceptance. Enhancements and new services that we develop may not be introduced in a timely or cost-effective manner, may contain errors or defects, may have interoperability difficulties with our Bandwidth Communications Platform or other services or may not achieve the broad market acceptance necessary to generate significant revenue. In certain instances, the introduction of new services requires the successful development of new technology. To the extent that upgrades of existing technology are required for the introduction of new services, the success of these upgrades may be dependent on reaching mutually acceptable terms with vendors and on vendors meeting their obligations in a timely manner.

Furthermore, our ability to increase the usage of our services depends, in part, on the development of new use cases for our services, which may be outside of our control. Our ability to generate usage of additional services by our customers may also require increasingly sophisticated and more costly sales efforts and result in a longer sales cycle. If we are unable to successfully enhance our existing services to meet evolving customer requirements, increase adoption and usage of our services or develop new services, or if our efforts to increase the usage of our services are more expensive than we expect, then our business, results of operations and financial condition would be adversely affected.

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

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

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

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

Our pricing and billing systems are complex and errors could adversely affect our revenue and profits.

Our pricing and billing efforts are complex to develop and challenging to implement. To be profitable, we must have accurate and complete information about the costs associated with voice and text communications, and properly incorporate such information into our pricing model. Our pricing model must also reflect accurate and current information about the market for our services, including the pricing of competitive alternatives for our services, as well as reliable forecasts of traffic volume. We may determine pricing for our services based on data that is outdated or otherwise flawed. Even if we have complete and accurate market information, we may not set prices to optimize both revenue and profitability. If we price our services too high, the amount of traffic that our customers may route to our network may decrease and accordingly our revenue may decline. If we price our services too low, our margins may be adversely affected, which will reduce our ability to achieve and maintain profitability.

Additionally, we rely heavily on third parties to provide us with key software and services for our billing. If these third parties cease to provide those services to us for any reason, or fail to perform billing services accurately and completely, we may not be able to deliver accurate invoices promptly. Delays in invoicing can lead to delays in revenue recognition, and inaccuracies in our billing could result in lost revenue. If we fail to adapt quickly and effectively to changes affecting our costs, pricing and billing, our profitability and cash flow will be adversely affected.

We must continue to develop effective business support systems to implement customer orders and to provide and bill for services.

We depend on our ability to continue to develop effective business support systems. This complicated undertaking requires significant resources and expertise and support from third-party vendors. Following the development of the business support systems, the data migration must be completed for the full benefit of the systems to be realized. Business support systems are needed for:

- quoting, accepting and inputting customer orders for services;
- provisioning, installing and delivering services;
- providing customers with direct access to the information systems included in our Bandwidth Communications Platform so that they can manage the services they purchase from us, generally through web-based customer portals; and
- billing for services.

Because our business provides for continued rapid growth in the number of customers that we serve, the volume of services offered, as well as the integration of any acquired companies' business support systems, if any, we must continue to develop our business support systems on a schedule sufficient to meet proposed milestone dates. If we fail to develop effective business support systems or complete the data migration into these systems, it could materially adversely affect our ability to implement our business plans, realize anticipated benefits from our acquisitions, if any, and meet our financial goals and objectives.

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

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

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

The promotion of our brand also requires us to make substantial expenditures, and we anticipate that these expenditures will increase as our market becomes more competitive and as we expand into new markets. To the extent that these activities increase revenue, this revenue still may not be enough to offset the increased expenses we incur. If we do not successfully maintain and enhance our brand, then our business may not grow, we may see our pricing power reduced relative to competitors and we may lose customers, all of which would adversely affect our business, results of operations and financial condition.

Any failure to deliver and maintain high-quality customer support may adversely affect our relationships with our customers and prospective customers and could adversely affect our reputation, business, results of operations and financial condition.

Many of our customers depend on our customer support team to assist them in deploying or using our services effectively, to help them resolve post-deployment issues quickly and to provide ongoing support. If we do not devote sufficient resources or are otherwise unsuccessful in assisting our customers effectively, it could adversely affect our ability to retain existing customers and could prevent prospective customers from adopting our services. We may be unable to respond quickly enough to accommodate short-term increases in demand for customer support. We also may be unable to modify the nature, scope and delivery of our customer support to compete with changes in the support services provided by our competitors. Increased demand for customer support, without corresponding revenue, could increase costs and adversely affect our business, results of operations and financial condition. Our sales are highly dependent on our business reputation and on positive recommendations from existing customers. Any failure to deliver and maintain high-quality customer support, or a market perception that we do not maintain high-quality customer support, could adversely affect our reputation, business, results of operations and financial condition.

Our revenue is concentrated in a limited number of enterprise customers.

A significant portion of our revenue is concentrated among a limited number of enterprise customers. If we lost one or more of our top ten customers, or, if one or more of these major customers significantly decreased orders for our services, our business would be materially and adversely affected.

Breaches of our networks or systems, or those of third parties upon which we rely, could degrade our ability to conduct our business, compromise the integrity of our services and our Bandwidth Communications Platform, result in significant data losses and the theft of our intellectual property,

damage our reputation, expose us to liability to third parties and require us to incur significant additional costs to maintain the security of our networks and data.

We depend upon our IT systems to conduct virtually all of our business operations, ranging from our internal operations and R&D activities to our marketing and sales efforts and communications with our customers and business partners. Cyber attacks, including through the use of malware, computer viruses, dedicated denial of services attacks, credential harvesting and other means for obtaining unauthorized access to or disrupting the operation of our networks and systems and those of our suppliers, vendors and other service providers, could cause harm to our business, including by misappropriating our proprietary information or that of our customers, employees and business partners or to cause interruptions of our services and our Bandwidth Communications Platform. Cyber attacks may cause equipment failures, loss of information, including sensitive personal information of customers or employees or valuable technical and marketing information, as well as disruptions to our or our customers' operations. Cyber attacks against companies have increased in frequency, scope and potential harm in recent years. Further, the perpetrators of cyber attacks are not restricted to particular groups or persons. These attacks may be committed by company employees or external actors operating in any geography, including jurisdictions where law enforcement measures to address such attacks are unavailable or ineffective, and may even be launched by or at the behest of nation states. While, to date, we have not been subject to cyber attacks which, individually or in the aggregate, have been material to our operations or financial condition, the preventive actions we take to reduce the risks associated with cyber attacks, including protection of our systems and networks, may be insufficient to repel or mitigate the effects of a major cyber attack in the future. Because the techniques used by such individuals or entities to access, disrupt or sabotage devices, systems and networks change frequently and may not be recognized until launched against a target, we may be unable to anticipate these techniques, and we may not become aware in a timely manner of such a security breach which could exacerbate any damage we experience. Additionally, we depend upon our employees and contractors to appropriately handle confidential and sensitive data, including customer data and customer proprietary network information pursuant to applicable federal law, and to deploy our IT resources in a safe and secure manner that does not expose our network systems to security breaches or the loss of data. Any data security incidents, including internal malfeasance by our employees, unauthorized access or usage, virus or similar breach or disruption of us or our services providers, could result in a loss of confidential information, theft of our intellectual property, damage to our reputation, loss of customers, litigation, regulatory investigations, fines, penalties and other liabilities.

Our existing general liability insurance may not cover, or may cover only a portion of, any potential claims related to security breaches to which we are exposed or may not be adequate to indemnify us for all or any portion of liabilities that may be imposed. Accordingly, if our cybersecurity measures and those of our service providers, fail to protect against unauthorized access, attacks (which may include sophisticated cyber attacks) and the mishandling of data by our employees and contractors, then our reputation, business, results of operations and financial condition could be adversely affected.

We are currently subject to litigation related to taxes and charges associated with our provision of 911 services, which could divert management's attention and adversely affect our results of operations.

We, along with many other telecommunications companies and similar service providers, currently are subject to litigation and a civil investigation regarding our billing, collection and remittance of non-income-based taxes and other similar charges regarding 911 services alleged to apply in certain states, counties, and municipalities located in Alabama, Georgia, Illinois, Minnesota, North Carolina, Pennsylvania, Rhode Island, South Carolina and the District of Columbia. See the section titled "Item 3. Legal Proceedings." We may face similar litigation in other jurisdictions in the future. While we are vigorously defending these lawsuits, litigation is inherently uncertain. Tax assessments, penalties and interest or future requirements arising from these lawsuits, or any other lawsuits that may arise in other jurisdictions, may adversely affect our business, results of operations and financial condition.

We face a risk of litigation resulting from customer misuse of our services and software to make or send unauthorized calls and/or text messages in violation of the Telephone Consumer Protection Act.

Calls and/or text messages originated by our customers may subject us to potential risks. For example, the TCPA restricts telemarketing and the use of technologies that enable automatic calling and/or SMS text messages without proper consent. This may result in civil claims against us and requests for information through third-party subpoenas or regulatory investigations. The scope and interpretation of the laws that are or may be applicable to the making and/or delivery of calls and/or text messages are continuously evolving and developing. If we do not comply with these laws or regulations or if we become liable under these laws or regulations due to the failure of our customers to comply with these laws by obtaining proper consent, we could become subject to lawsuits, fines, civil penalties, potentially significant statutory damages, consent decrees, injunctions, adverse publicity, loss of user confidence in our services, loss of users and other adverse consequences, which could materially harm our business.

The communications industry faces significant regulatory uncertainties and the resolution of these uncertainties could harm our business, results of operations and financial condition.

If current or future regulations change, the FCC or state regulators may not grant us any required regulatory authorization or may take action against us if we are found to have provided services without obtaining the necessary authorizations, or to have violated other requirements of their rules and orders. Delays in receiving required regulatory approvals or the enactment of new adverse regulation or regulatory requirements may slow our growth and have a material adverse effect on our business, results of operations and financial condition.

Proceedings before the FCC could limit our access to various network services or further increase the rates we must pay for such services. Likewise, proceedings before the FCC could impact the availability and price of special access facilities. Other proceedings before the FCC could result in an increase in the amount we pay to other carriers or a reduction in the revenue we derive from other carriers in, or retroactive liability for, access charges and reciprocal compensation. Additionally, other proceedings before the FCC could result in increases in the cost of regulatory compliance. For example, the FCC has opened a proceeding to examine how to improve the delivery of emergency 911 services and whether to expand requirements to include communications services not currently subject to emergency calling obligations. A number of states also have proceedings pending that could impact our access to and the rates we pay for network services. Other state proceedings could limit our pricing and billing flexibility. Our business would be substantially impaired if the FCC, the courts or state commissions eliminated our access to the facilities and services we use to serve our customers, substantially increased the rates we pay for facilities and services, increased the costs or complexity associated with providing emergency 911 services or adversely affected the revenue we receive from other carriers or our customers. In addition, congressional legislative efforts to rewrite the Telecommunications Act of 1996 or enact other telecommunications legislation, as well as various state legislative initiatives, may cause major industry and regulatory changes. We cannot predict the outcome of these proceedings or legislative initiatives or the effects, if any, that these proceedings or legislative initiatives may have on our business and operations.

While we believe we are currently in compliance with all federal, state and local rules and regulations, these regulations are subject to interpretation and the relevant regulators may determine that our application of these rules and regulations is not consistent with their interpretation. Additionally, in certain instances, third parties or government agencies may bring action with federal, state or local regulators if they believe a provider has breached applicable rules and regulations.

The effects of increased regulation of IP-based service providers are unknown.

While the FCC has to date generally subjected IP-based service providers to less stringent regulatory oversight than traditional common carriers, the FCC has more recently imposed certain regulatory obligations on providers of VoIP services, including the obligations to contribute to the Universal Service Fund, to provide 911 services and/or to comply with the Communications Assistance for Law Enforcement Act. Some states have imposed taxes, fees and/or surcharges on VoIP telephony services. The imposition of additional regulations could have a material adverse effect on our business.

We must obtain and maintain permits and licenses to operate our network.

If we are unable, on acceptable terms and on a timely basis, to obtain and maintain the permits and licenses needed to expand and operate our network, our business could be materially adversely affected. In addition, the cancellation or non-renewal of the permits or licenses that are obtained could materially adversely affect our business. In particular, although we have received approval from the FCC, we are currently awaiting approval from the state public utility commissions of California and Hawaii in connection with our expected change of control (the “Necessary Approvals”). Holders of our Class B common stock are prohibited from converting their shares of Class B common stock to Class A common stock prior to the earlier of: (i) the receipt of the Necessary Approvals and (ii) the 181st day following our initial public offering (the “Conversion Commencement Date”). If we have not received the Necessary Approvals by the Conversion Commencement Date, we will not be able to restrict holders of our Class B common stock from converting their shares of Class B common stock to Class A common stock, which may result in a change of control. If a change of control occurs prior to receipt of regulatory approval in a jurisdiction, we may be subject to fines, penalties, enforcement actions or loss of our authorization in such jurisdiction. In the event we are the target of an acquisition, the regulatory agencies responsible for granting, renewing or transferring permits and licenses may delay or reject applications to transfer such permits or licenses and as a result these uncertainties, we may not be as attractive an acquisition target.

Our operations are subject to regulation and require us to obtain and maintain several governmental licenses and permits. If we violate those regulatory requirements or fail to obtain and maintain those licenses and permits, including payment of related fees, if any, we may not be able to conduct our business. Moreover, those regulatory requirements could change in a manner that significantly increases our costs or otherwise adversely affects our operations.

In the ordinary course of operating our network and providing our services, we must obtain and maintain a variety of telecommunications and other licenses and authorizations. We also must comply with a variety of regulatory obligations. There can be no assurance we can maintain our licenses or that they will be renewed upon their expiration. Our failure to obtain or maintain necessary licenses, authorizations or to comply with the obligations imposed upon license holders, including the payment of fees, may cause sanctions or additional costs, including the revocation of authority to provide services.

Our operations are subject to regulation at the national level and, often, at the state and local levels. Changes to existing regulations or rules, or the failure to regulate going forward in areas historically regulated on matters such as network neutrality, licensing fees, environmental, health and safety, privacy, intercarrier compensation, emergency 911 services interconnection and other areas, in general or particular to our industry, may increase costs, restrict operations or decrease revenue. Our inability or failure to comply with telecommunications and other laws and regulations could cause the temporary or permanent suspension of our operations, and if we cannot provide emergency calling functionality through our Bandwidth Communications Platform to meet any new federal or state requirements, the competitive advantages that we currently have may not persist, adversely affecting our ability to obtain and to retain enterprise customers which could have an adverse impact on our business.

The FCC recently repealed its Network Neutrality Rules. Our business could suffer with respect to the quality of the services we offer, our ability to maintain our internet-based services and our services offered through our Bandwidth Communications Platform, decrease our profitability or increase the price of our services making our offerings less competitive in the marketplace.

In January, 2018, the FCC adopted an order largely repealing its network neutrality rules. Among other things, the pre-existing network neutrality rules prevented providers of broadband internet access services - like cable and telephone companies - from blocking, impairing and degrading service offerings from non-affiliated third parties like us. The repeal of the pre-existing rules is not yet effective and several state attorneys' general and associations have appealed the FCC's repeal of the pre-existing network neutrality rules. There are also efforts in Congress to repeal the FCC's January 2018 order. We cannot predict whether either the appeals or Congress will be successful and result in restoring the pre-existing network neutrality rules that prevent broadband internet access service providers from blocking, impairing and degrading offerings from third parties like us. If broadband providers were to block, impair or degrade our internet-based services or services we offer through our Bandwidth Communications Platform, or if broadband internet access providers were to charge us or our customers to access and use our internet-based services or services offered through our Bandwidth Communications Platform, we could lose customers, our profitability could decrease, or we may have to raise prices making our service less competitive in the marketplace. Most of the major broadband internet access providers have publicly stated that they will not block, impair or degrade third party offerings. We cannot predict the potential impact of the January, 2018, FCC network neutrality order on our offerings at this time.

We are subject to privacy and data security obligations in the U.S. The FCC, other Federal agencies or state attorneys' general could fine or subject us to other adverse actions that may negatively impact our business reputation. If we are subject to an investigation or suffer a breach, we may incur costs or be subject to forfeitures and penalties that could reduce our profitability.

For certain of our internet-based and Bandwidth Communications Platform offerings, we are subject to individual or joint jurisdiction of the FCC, the Federal Trade Commission, and state attorneys' general with respect to privacy and data security obligations. If we were to suffer or if one of our customers were to suffer a breach, we may be subject to the jurisdiction of a variety of federal agencies' jurisdictions as well as state attorneys' general. We may have to comply with a variety of data breach laws at the federal and state levels, comply with any resulting investigations, as well as offer mitigation to customers and potential end users of certain wholesale customers to which we provide services. We could also be subject to fines, forfeitures and other penalties that may adversely impact our business.

We are or may be subject to data privacy, security and transfer rules in the European Union. The current law governing the transfer of personal data from the European Union to the United States is ambiguous. We may be subject to enforcement actions or we may have to restructure our service offerings in order to comply with relevant law. Our business reputation could suffer, we could be subject to fines, penalties or forfeitures, and we could be subject to increased costs that could negatively impact our profitability or require us to increase the prices for our offerings making our services less competitive.

Like many other companies operating in the European Union (EU) and the U.S., we rely on certain methods to transfer personal data from the EU to the U.S. There has been considerable litigation and legal uncertainty associated with all established methods for transferring personal data from the EU to the U.S. As a result, there is substantial uncertainty as to the state of law governing the transfer of personal data between the EU and the U.S. for all companies engaged in such transfers including us. We cannot predict when or how this issue will be resolved nor can we predict its impact on us at this time. We may be subject to fines or penalties if the existing data transfer methods are invalidated or we may have to restructure our business operations. Depending on what we may have to do to comply with the law when and if it is ultimately resolved, we could incur increased operating costs which may decrease our profitability or we may increase the price of our services that may result in our services being less competitive in the marketplace.

The European Union's General Data Protection Regulation (GDPR) becomes effective on May 25, 2018. If we are found to be in non-compliance with the GDPR, we could be subject to substantial monetary forfeitures and other penalties. Our business reputation could also suffer.

The EU adopted the General Data Protection Regulation (GDPR), which will become effective on May 25, 2018, replacing the Data Protection Directive 95/46/EC. The GDPR provides for far more significant forfeitures and penalties than the regulation it replaces for noncompliance. Much remains unknown with respect to how to interpret and implement the GDPR. Moreover, for our internet-based service offerings as well as those services we offer through the Bandwidth Communications Platform, there is substantial complexity associated with interpreting and implementing the GDPR. Should we be found to be not in compliance with the GDPR, we could be subject to substantial monetary forfeitures and other penalties that could negatively impact our operating results. Our business reputation could also suffer. We cannot evaluate our potential liability at this time.

Our business could suffer if we cannot obtain or retain local or toll-free numbers, are prohibited from obtaining local or toll-free numbers, or are limited to distributing local or toll-free numbers to only certain customers.

Our future success depends on our ability to procure large quantities of local and toll-free numbers in the United States in desirable locations at a reasonable cost and without restriction. Our ability to procure and distribute numbers depends on factors outside of our control, such as applicable regulations, the practices of the communications carriers that provide numbers to us in certain jurisdictions, the cost of these numbers and the level of demand for new numbers. Due to their limited availability, there are certain popular area code prefixes and specialized “vanity” toll-free numbers that we may not be able to obtain in desired quantities or at all. Our inability to acquire or retain numbers for our operations would make our services, including our Bandwidth Communications Platform, less attractive to potential customers that desire assignments of particular numbering resources. In addition, future growth of our customer base, together with growth of customer bases of other providers of communications services, has increased, which increases our dependence on needing large quantities of local and toll-free numbers associated with desirable area codes or specific toll-free numbering resources at a reasonable cost and without restriction. If we are not able to obtain or retain adequate local and toll-free numbers, or attractive subsets of such resources, our business, results of operations and financial condition could be materially adversely affected.

Intellectual property and proprietary rights of others could prevent us from using necessary technology to provide our services or subject us to expensive intellectual property litigation.

If technology that we require to provide our services, including our Bandwidth Communications Platform, was determined by a court to infringe a patent held by another entity that will not grant us a license on terms acceptable to us, we could be precluded by a court order from using that technology and we would likely be required to pay significant monetary damages to the patent holder. The successful enforcement of these patents, or our inability to negotiate a license for these patents on acceptable terms, could force us to cease (i) using the relevant technology and (ii) offering services incorporating the technology. If a claim of infringement was brought against us based on the use of our technology or against our customers based on their use of our services for which we are obligated to indemnify, we could be subject to litigation to determine whether such use or sale is, in fact, infringing. This litigation could be expensive and distracting, regardless of the outcome.

While our own limited patent portfolio may deter other operating companies from bringing such actions, patent infringement claims are increasingly being asserted by patent holding companies, which do not use technology and whose sole business is to enforce patents against operators, such as us, for monetary gain. Because such patent holding companies, commonly referred to as patent “trolls,” do not provide services or use technology, the assertion of our own patents by way of counter-claim would be largely ineffective.

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

Our services, including our Bandwidth Communications Platform, incorporate open source software, and we expect to continue to incorporate open source software in our services in the future. Few of the licenses applicable to open source software have been interpreted by courts, and there is a risk that these licenses could be construed in a manner that could impose unanticipated conditions or restrictions on our ability to commercialize our services, including our Bandwidth Communications Platform. Moreover, although we have implemented policies to regulate the use and incorporation of open source software into our services, we cannot be certain that we have not incorporated open source software in our services in a manner that is inconsistent with such policies. If we fail to comply with open source licenses, we may be subject to certain requirements, including requirements that we offer our services that incorporate the open source software for no cost, that we make available source code for modifications or derivative works we create based upon, incorporating or using the open source software and that we license such modifications or derivative works under the terms of applicable open source licenses. If an author or other third-party that distributes such open source software were to allege that we had not complied with the conditions of one or more of these licenses, we could be required to incur significant legal expenses defending against such allegations and could be subject to significant damages, enjoined from generating revenue from customers using services that contained the open source software and required to comply with onerous conditions or restrictions on these services. In any of these events, we and our customers could be required to seek licenses from third parties in order to continue offering our services and to re-engineer our services or discontinue offering our services to customers in the event re-engineering cannot be accomplished on a timely basis. Any of the foregoing could require us to devote additional R&D resources to re-engineer our services, could result in customer dissatisfaction and may adversely affect our business, results of operations and financial condition.

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

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

The storage, processing and use of personal information and related data subjects us to evolving governmental laws and regulation, commercial standards, contractual obligations and other legal obligations related to consumer and data privacy, which may have a material impact on our costs, use of our services, or expose us to increased liability.

Federal, state, local and foreign laws and regulations, commercial obligations and industry standards, each provide for obligations and restrictions with respect to data privacy and security, as well as the collection, storage, retention, protection, use, processing, transmission, sharing, disclosure and protection of personal information and other customer data, including customer proprietary network information under applicable federal law. The evolving nature of these obligations and restrictions subjects us to the risk of differing interpretations, inconsistency or conflicts among countries or rules, and creates uncertainty regarding their application to our business.

These obligations and restrictions may limit our ability to collect, store, process, use, transmit and share data with our customers, employees and third-party providers and to allow our customers to collect, store, retain, protect, use, process, transmit, share and disclose data with others through our services. Compliance with, and other burdens imposed by, such obligations and restrictions could increase the cost of our operations and impact our ability to market our services through effective segmentation.

Failure to comply with obligations and restrictions related to applicable data protection laws, regulations, standards, and codes of conduct, as well as our own posted privacy policies and contractual commitments could subject us to lawsuits, fines, criminal penalties, statutory damages, consent decrees, injunctions, adverse publicity, loss of user confidence in our services, and loss of users, which could materially harm our business. Because these obligations and restrictions have continued to develop and evolve rapidly, it is possible that we may not be, or may not have been, compliant with each such obligation and restriction. Additionally, third-party contractors may have access to customer or employee data. If these or other third-party vendors violate obligations and restrictions related to applicable data protection laws or our policies, such violations may also put our customers' or employees' information at risk and could in turn have a material and adverse effect on our business.

If we fail to protect our internally developed systems, technology and software and our patents and trademarks, we may become involved in costly litigation or our business or brand may be harmed.

Our ability to compete effectively is dependent in large part upon the maintenance and protection of systems and software that we have developed internally, including some systems and software-based on open standards. While we have eight U.S. patents and five pending U.S. patent applications, we cannot patent much of the technology that is important to our business. In addition, our pending patent applications may not be granted, and any issued patent that we own may be challenged, narrowed, invalidated or circumvented. To date, we have relied on patent, copyright and trade secret laws, as well as confidentiality procedures and licensing arrangements, to establish and protect our rights to our technology. While we typically enter into confidentiality agreements with our employees, consultants, customers, and vendors in an effort to control access to and distribution of technology, software, documentation and other information, these agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. Despite these precautions, it may be possible for a third-party to copy or otherwise obtain and use our technology without authorization. In addition, others may independently discover trade secrets and proprietary information, and in such cases we could not assert any rights against such party. Policing unauthorized use of our technology is difficult. The steps we take may not prevent misappropriation of the technology we rely on. In addition, effective protection may be unavailable or limited in some jurisdictions outside the United States. Litigation may be necessary in the future to enforce or protect our rights or to determine the validity and scope of the rights of others. That litigation could cause us to incur substantial costs and divert resources away from our daily business, which in turn could adversely affect our business, results of operations and financial condition.

The unlicensed use of our brands by third parties could harm our reputation, cause confusion among our customers or impair our ability to market our services. Accordingly, we have registered numerous trademarks and service marks and have applied for registration of our trademarks and service marks in the United States to establish and protect our brand names as part of our intellectual property strategy. We cannot assure you that our pending or future trademark applications will be approved. Although we anticipate that we would be given an opportunity to respond to any such rejections, we may be unable to overcome any such rejections. In addition, in proceedings before the United States Patent and Trademark Office third parties are given an opportunity to oppose pending trademark applications and seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. In the event that our trademarks are successfully challenged, we could be forced to rebrand our services, which could result in loss of brand name recognition. Moreover, successful opposition to our applications might encourage third parties to make additional oppositions or commence trademark infringement proceedings against us, which could be costly and time consuming to defend against. If we decide to take limited or no action to protect our trademarks, our trademark rights may be diluted and subject to challenge or invalidation, which could materially and adversely affect our brand in the marketplace. Certain of the trademarks we may use may become so well known by the public that their use becomes generic and they lose trademark protection. Over the long term, if we are unable to establish name recognition based on our trademark and tradenames, then we may not be able to compete effectively and our business may be adversely affected. Further, we cannot assure you that competitors will not infringe our trademarks or that we will have adequate resources to enforce our trademarks.

We are subject to litigation in the ordinary course of business, and uninsured judgments or a rise in insurance premiums may adversely affect our results of operations.

In the ordinary course of business, we are subject to various claims and litigation. Any such claims, regardless of merit, could be time-consuming and expensive to defend and could divert management’s attention and resources. In accordance with customary practice, we maintain insurance against some, but not all, of these potential claims. We may elect not to obtain insurance if we believe that the cost of available insurance is excessive relative to the risks presented. The levels of insurance we maintain may not be adequate to fully cover any and all losses or liabilities. Further, we may not be able to maintain insurance at commercially acceptable premium levels or at all. If any significant judgment, claim (or a series of claims) or other event is not fully insured or indemnified against, it could have a material adverse impact on our business, financial condition and results of operations. There can be no assurance as to the actual amount of these liabilities or the timing thereof. We cannot be certain that the outcome of current or future litigation will not have a material adverse impact on our business and results of operations.

We may be liable for the information that content owners or distributors distribute over our network.

The law relating to the liability of private network operators for information carried on or disseminated through their networks remains unsettled. While we disclaim any liability for third-party content in our services agreements, we may become subject to legal claims relating to the content disseminated on our network, even though such content is owned or distributed by our customers or a customer of our customers. For example, lawsuits may be brought against us claiming that material distributed using our network was inaccurate, offensive or violated the law or the rights of others. Claims could also involve matters such as defamation, invasion of privacy and copyright infringement. In addition, the law remains unclear over whether content may be distributed from one jurisdiction, where the content is legal, into another jurisdiction, where it is not. Companies operating private networks have been sued in the past, sometimes successfully, based on the nature of material distributed, even if the content is not owned by the network operator and the network operator has no knowledge of the content or its legality. It is not practical for us to monitor all of the content distributed using our network. We may need to take costly measures to reduce our exposure to these risks or to defend ourselves against such claims, which could adversely affect our results of operations and financial condition.

Third parties may fraudulently use our name to obtain access to customer accounts and other personal information, use our services to commit fraud or steal our services, which could damage our reputation, limit our growth or cause us to incur additional expenses.

Our customers may have been subject to “phishing,” which occurs when a third-party calls or sends an email or pop-up message to a customer that claims to be from a business or organization that provides services to the customer. The purpose of the inquiry is typically to encourage the customer to visit a bogus website designed to look like a website operated by the legitimate business or organization or provide information to the operator. At the bogus website, the operator attempts to trick the customer into divulging customer account or other personal information such as credit card information or to introduce viruses through “Trojan horse” programs to the customers’ computers. This could result in identity theft from our customers and the unauthorized use of our services. Third parties also have used our communications services to commit fraud. If we are unable to detect and prevent “phishing” and other similar methods, use of our services for fraud and similar activities, our brand reputation and growth may suffer and we may incur additional costs, including costs to increase security, or be required to credit significant amounts to customers.

Third parties also have used our communications services without paying, including by submitting fraudulent credit information and fraudulent credit card information. This has resulted in our incurring the cost of providing the services, including incurring call termination fees, without any corresponding revenue. We have implemented anti-fraud procedures in order to limit the expenses resulting from theft of service. If our procedures are not effective, theft of service could significantly increase our expenses and adversely affect our business, results of operations and financial condition.

If our customers or their end users do not accept the differences between our service and traditional telephone service, they may choose to remain with their current telephone service provider or may choose to return to service provided by traditional network service providers.

Aspects of our services based on VoIP, including our Bandwidth Communications Platform, are not the same as traditional network service providers. Our continued growth is dependent on the adoption of our services by mainstream customers and their end users, so these differences are important. For example:

- Our 911 calling services are different, in significant respects, from the 911 service associated with traditional wireline and wireless telephone providers and, in certain cases, with other VoIP providers.
- In the event of a power loss or Internet access interruption experienced by a customer, our service may be interrupted.
- Our customers’ end users may experience lower call quality than they are used to from traditional wireline or wireless telephone companies, including static, echoes and delays in transmissions.

- Our customers' end users may not be able to call premium-rate telephone numbers such as 1-900 numbers and 976 numbers.

We may lose customers if we experience failures of our system or Bandwidth Communications Platform that significantly disrupt the availability and quality of the services that we provide. Such failures may also cause interruptions to service delivery and the completion of other corporate functions.

Our operations depend on our ability to limit and mitigate interruptions or degradation in service for customers. Interruptions in service or performance problems, for whatever reason, could undermine our customers' confidence in our services and cause us to lose customers or make it more difficult to attract new ones. Because many of our services are critical to the businesses or daily lives of many of our customers or our customers' end users, any significant interruption or degradation in service also could result in lost profits or other losses to customers. Although our service agreements generally limit our liability for service failures and generally exclude any liability for "consequential" damages such as lost profits, a court might not enforce these limitations on liability, which could expose us to financial loss. We also sometimes provide our customers with committed service levels. If we fail to meet these committed service levels, we could be required to provide service credits or other compensation to our customers, which could adversely affect our results of operations.

The failure of any equipment or facility on our network, including our network operations control centers and network data storage locations, could interrupt customer service and other corporate functions until we complete necessary repairs or install replacement equipment. Our business continuity plans also may be inadequate to address a particular failure that we experience. Delays, errors or network equipment or facility failures could result from natural disasters, disease, accidents, terrorist acts, power losses, security breaches, vandalism or other illegal acts, computer viruses or other causes. These delays, errors or failures could significantly impair our business due to:

- service interruptions;
- misfunction of our Bandwidth Communications Platform on which our enterprise users rely for voice, messaging or 911 functionality;
- exposure to customer liability;
- the inability to install new service;
- the unavailability of employees necessary to provide services;
- the delay in the completion of other corporate functions such as issuing bills and the preparation of financial statements; or
- the need for expensive modifications to our systems and infrastructure.

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

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

If our 911 services do not function properly, we may be exposed to significant liability from our users.

Certain of our IP telephony offerings, as well as the 911 solutions that we offer are subject to FCC rules governing the delivery of emergency calling services. Similar to other providers of IP telephony services, our 911 service are different from those associated with traditional telecommunications services. These differences may lead to an inability to make and complete calls that would not occur for users of traditional telephony services. For example, to provide the emergency calling services required by the FCC's rules to our IP telephony consumers, we may use components of both the wireline and wireless infrastructure in unique ways that can result in failed connections and calls routed to incorrect emergency call centers. Routing emergency calls over the Internet may be adversely affected by power outages and network congestion that may not occur for users of traditional telephony services. Emergency call centers may not be equipped with appropriate hardware or software to accurately process and respond to emergency calls initiated by consumers of our IP telephony services, and calls routed to the incorrect emergency call center can significantly delay response times for first responders. Users of our IP telephony services from a fixed address are required to manually update their location information, and failure to do so may result in dispatching of assistance to the wrong location. Even manual updates made appropriately require a certain amount of time before the updated address appears in the relevant databases which could result in misrouting emergency calls to the wrong emergency calling center, dispatching first responders to the wrong address, or both. Moreover, the relevant rules with respect to what address information should be provided to emergency call centers when the call originates from a mobile application are unsettled. As a result, we could be subject to enforcement action by the FCC or other entities-possibly exposing us to significant monetary penalties, cease and desist orders, civil liability, loss of user confidence in our services, loss of users, and other adverse consequences, which could materially harm our business. The FCC's rules, and some states, also impose other obligations on us, such as properly recording our customers' registered locations, obtaining affirmative acknowledgement from customers that they are aware of the differences between emergency calling services associated with IP telephony as compared with traditional telecommunications services, and distribution of appropriate warning labels to place on or near hardware used to place IP telephony calls. Failure to comply with these requirements, or failure of our Bandwidth Communications Platform such that 911 calls did not complete or were misrouted, may result in FCC enforcement action, state attorneys' general investigations, potential exposure to significant monetary penalties, cease and desist orders, civil liability to our users and their customers, loss of user confidence in our services, loss of users, and other adverse consequences, which could materially harm our business.

The FCC's rules also require that we timely report certain 911 service outages. The FCC may make further inquiries regarding matters related to any reported 911 service outage. Any inquiry could result in FCC enforcement action, potential monetary penalties and other adverse consequences.

Termination of relationships with key suppliers could cause delay and additional costs.

Our business is dependent on third-party suppliers for fiber, computers, software, transmission electronics and related network components, as well as providers of network colocation facilities that are integrated into our network, some of which are critical to the operation of our business. If any of these critical relationships is terminated, a supplier either exits or curtails its business as a result of economic conditions, a supplier fails to provide critical services or equipment, or the supplier is forced to stop providing services due to legal constraints, such as patent infringement, and we are unable to reach suitable alternative arrangements quickly, we may experience significant additional costs or we may not be able to provide certain services to customers. If that happens, our business, results of operations and financial condition could be materially adversely affected.

Many of our third-party suppliers do not have long-term committed contracts with us and may terminate their agreements with us without notice or by providing 30 days prior written notice. Although we expect that we could receive similar services from other third-party suppliers, if any of our arrangements with our third-party suppliers are terminated, we could experience interruptions in our ability to make our services available to customers, as well as delays and additional expenses in arranging alternative providers. If a significant portion of our third-party suppliers fail to provide these services to us on a cost-effective basis or otherwise terminate these services, the delay caused by qualifying and switching to other providers could be time consuming and costly and could adversely affect our business, results of operations and financial condition.

One of our third-party suppliers, Level 3, provides us with certain 911 call routing and termination services. Pursuant to the agreement with Level 3, Level 3 is our preferred provider for these services until December 31, 2020, after which the agreement automatically renews for consecutive one-year periods, unless terminated by either Level 3 or us. After December 31, 2020, Level 3 may cancel the agreement upon two years' notice and we may cancel the agreement upon one year's notice. If our agreement with Level 3 terminates for any reason other than our default, Level 3 must continue to provide these services to us for at least two years to allow us to transition to another provider. We are obligated to pay Level 3 a minimum of $100,000 per month for as long as the agreement continues. Additionally, Level 3 has a right of first refusal to provide these 911 call routing and termination services to us in additional geographic areas.

Our growth and financial health are subject to a number of economic risks.

The financial markets in the United States have experienced substantial uncertainty during recent years. This uncertainty has included, among other things, extreme volatility in securities prices, drastically reduced liquidity and credit availability, rating downgrades of certain investments and declining values with respect to others. If capital and credit markets continue to experience uncertainty and available funds remain limited, we may not be able to obtain debt or equity financing or to refinance our existing indebtedness on favorable terms or at all, which could affect our strategic operations and our financial performance and force modifications to our operations. These conditions currently have not precluded us from accessing credit markets or financing our operations, but there can be no assurance that financial markets and confidence in major economies will not deteriorate. An extended period of economic deterioration could materially adversely affect our results of operations and financial condition and exacerbate some of the other risk factors contained in this Annual Report on Form 10-K. For example, our customers might defer or entirely decline purchases of our services due to tighter credit or negative financial news or reduce demand for our services. Our customers also may not be able to obtain adequate credit, which could adversely affect the timeliness of their payments to us or ultimately result in a filing by the customer for protection from creditors under applicable insolvency or bankruptcy laws. If our customers cannot make timely payments to us, our accounts receivable could increase. The demand for, and the prices of, our services also may decline due to the actions of our competitors or otherwise.

Key vendors upon which we rely also could be unwilling or unable to provide us with the materials or services that we need to operate our Bandwidth Communications Platform or otherwise on a timely basis or on terms that we find acceptable. Our financial counterparties, insurance providers or others also may default on their contractual obligations to us. If any of our key vendors fail, we may not be able to replace them without disruptions to, or deterioration of, our services and we also may incur higher costs associated with new vendors. Transitioning to new vendors also may result in the loss of the value of assets associated with our integration of third-party services into our network or service offerings.

Our customer churn rate may increase.

Customer churn occurs when a customer discontinues service with us, whether voluntarily or involuntarily, such as a customer switching to a competitor or going out of business. Changes in the economy, increased competition from other providers, or issues with the quality of service we deliver can impact our customer churn rate. We cannot predict future pricing by our competitors, but we anticipate that price competition will continue. Lower prices offered by our competitors could contribute to an increase in customer churn. We cannot predict the timing, duration or magnitude of any deteriorated economic conditions or its impact on our target of customers. Higher customer churn rates could adversely affect our revenue growth. Higher customer churn rates could cause our dollar-based net retention rate to decline. A sustained and significant growth in the churn rate could have a material adverse effect on our business.

The market prices for certain of our services have decreased in the past and may decrease in the future, resulting in lower revenue than we anticipate.

Market prices for certain of our services have decreased over recent years. These decreases resulted from downward market pressure and other factors including:

- technological changes and network expansions, which have resulted in increased transmission capacity available for sale by us and by our competitors; and
- some of our competitors have been willing to accept smaller operating margins in the short term in an attempt to increase long-term revenue.

To retain customers and revenue, we must sometimes reduce prices in response to market conditions and trends. We cannot predict to what extent we may need to reduce our prices to remain competitive or whether we will be able to sustain future pricing levels as our competitors introduce competing services or similar services at lower prices. Our ability to meet price competition may depend on our ability to operate at costs equal to or lower than our competitors or potential competitors. As our prices for some of our services decrease, our operating results may suffer unless we are able to either reduce our operating expenses or increase traffic volume from which we can derive additional revenue.

The need to obtain additional IP circuits from other providers increases our costs. In addition, the need to interconnect our network to networks that are controlled by others could increase our costs.

We lease over 150,000 IP circuits from third parties nationwide. We could incur material expenses if we were required to locate alternative IP circuits. We may not be able to obtain reasonable alternative IP circuits if needed. Failure to obtain usage of alternative IP circuits, if necessary, could have a material adverse effect on our ability to carry on business operations. In addition, some of our agreements with other providers require the payment of amounts for services whether or not those services are used. Our reliance on third-party providers may reduce our operating flexibility, ability to make timely service changes and ability to control quality of service.

In the normal course of business, we need to enter into interconnection agreements with many local telephone companies, as well as the owners of networks that our customers desire to access to deliver their services. We are not always able to secure these interconnection agreements on favorable terms. Costs of obtaining service from other communications carriers comprise a significant proportion of the operating expenses of long distance carriers. Changes in regulation, particularly the regulation of telecommunication carriers and local access network owners, could indirectly, but significantly, affect our competitive position. These changes could increase or decrease the costs of providing our services. Further, if problems occur with our third-party providers or local telephone companies, it may cause errors or poor quality communications, and we could encounter difficulties identifying the source of the problem. The occurrence of errors or poor quality communications on our services, whether caused by our platform or a third-party provider, may result in the loss of our existing customers or the delay of adoption of our services by potential customers and may adversely affect our business, results of operations and financial condition.

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

Our future performance depends on the continued services and contributions of our senior management and other key employees to execute on our business plan, to develop our platform, to deliver our services to customers, to attract and retain customers and to identify and pursue opportunities. The loss of services of senior management or other key employees could significantly delay or prevent the achievement of our development and strategic objectives. In particular, we depend to a considerable degree on the vision, skills, experience and effort of our Cofounder, Chief Executive Officer and Chairman, David A. Morken. The replacement of any of our senior management personnel would likely involve significant time and costs, and such loss could significantly delay or prevent the achievement of our business objectives. The loss of the services of our senior management or other key employees for any reason could adversely affect our business, results of operations and financial condition.

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

Our future success depends, in part, on our ability to continue to attract and retain highly skilled personnel. We believe that there is, and will continue to be, intense competition for highly skilled management, technical, sales and other personnel with experience in our industry in the Raleigh, North Carolina area, where our headquarters are located, and in other locations where we maintain offices. We must provide competitive compensation packages and a high-quality work environment to hire, retain and motivate employees. If we are unable to retain and motivate our existing employees and attract qualified personnel to fill key positions, we may be unable to manage our business effectively, including the development, marketing and sale of our services, which could adversely affect our business, results of operations and financial condition. To the extent we hire personnel from competitors, we also may be subject to allegations that they have been improperly solicited or hired, or that they divulged proprietary or other confidential information.

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

Our management team has limited experience managing a public company.

Most members of our management team have limited, if any, experience managing a publicly-traded company, interacting with public company investors and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage us as a public company. As a result of being a public company, we are subject to significant regulatory oversight and reporting obligations under the federal securities laws and the continuous scrutiny of securities analysts and investors. These new obligations and constituents require significant attention from our senior management and could divert their attention away from the day-to-day management of our business, which could adversely affect our business, results of operations and financial condition.

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

We conduct operations in many tax jurisdictions throughout the United States. In many of these jurisdictions, non-income-based taxes such as sales, use and telecommunications taxes, including those associated with (or potentially associated with) VoIP telephony services or 911 services, are or may be assessed on our operations. The systems and procedures necessary to comply in these jurisdictions are complex to develop and challenging to implement. Additionally, we rely heavily on third parties to provide us with key software and services for compliance. If these third parties cease to provide those services to us for any reason, or fail to perform services accurately and completely, we may not be able to accurately bill, collect or remit applicable non-income-based taxes. Historically, we have not billed or collected certain of these taxes and, in accordance with generally accepted accounting principles ("GAAP"), we have recorded a provision for our tax exposure in these jurisdictions when it is both probable that a liability has been incurred and the amount of the exposure can be reasonably estimated. These estimates include several key assumptions including, but not limited to, the taxability of our services, the jurisdictions in which we believe we have nexus, and the sourcing of revenue to those jurisdictions. In the event these jurisdictions challenge our assumptions and analysis, our actual exposure could differ materially from our current estimates.

Taxing authorities also may periodically perform audits to verify compliance and include all periods that remain open under applicable statutes, which customarily range from three to four years. At any point in time, we may undergo audits that could result in significant assessments of past taxes, fines and interest if we were found to be non-compliant. During the course of an audit, a taxing authority may, as a matter of policy, question our interpretation and/or application of their rules in a manner that, if we were not successful in substantiating our position, could potentially result in a significant financial impact to us.

Furthermore, certain jurisdictions in which we do not collect sales, use and similar taxes may assert that such taxes are applicable, which could result in tax assessments, penalties and interest, and we may be required to collect such taxes in the future. Such tax assessments, penalties and interest or future requirements may adversely affect our business, results of operations and financial condition.

We may be subject to significant U.S. federal income tax-related liabilities if certain ownership changes were to occur, including as a result of subsequent issuances or acquisitions of our stock, and we may determine to forego certain transactions in light of such liabilities as well as the restrictions and obligations imposed by and under the Tax Sharing Agreement.

We may be subject to significant U.S. federal income tax-related liabilities with respect to our prior distribution of all of the issued and outstanding shares of the common stock of Republic Wireless, Inc. (“Republic Wireless”), our former subsidiary, to our stockholders as of and on November 30, 2016 (the “Spin-Off”), if certain ownership changes were to occur. In particular, even if the Spin-Off otherwise qualifies as a tax-free transaction to us and our stockholders under Section 355, Section 368(a)(1)(D) and related provisions of the U.S. Internal Revenue Code of 1986, as amended (the “Code”), it may result in corporate-level taxable gain to us under Section 355(e) of the Code (“Section 355(e)”) if there is a 50% or greater change in ownership, by vote or value, of shares of our stock or Republic Wireless’s stock occurring as part of a plan or series of related transactions that includes the Spin-Off. In addition, pursuant to the Tax Sharing Agreement, dated November 30, 2016, between us and Republic Wireless (the “Tax Sharing Agreement”), we and Republic Wireless are each prohibited from taking or failing to take any action that prevents the Spin-Off from qualifying for tax-free treatment under Section 355, Section 368(a)(1)(D) and related provisions of the Code, and we and Republic Wireless must generally indemnify one another for any taxes or losses incurred by the other (or its respective subsidiaries), as applicable, resulting from the application of Section 355(e) to the Spin-Off as a result of subsequent actions we or Republic Wireless take or fail to take.

To preserve the tax-free nature of the Spin-Off to us as well as Republic Wireless (and its subsidiaries), we might forego certain transactions that might otherwise have been advantageous. In particular, we might continue to operate certain of our business operations for the foreseeable future even if a sale or discontinuance of such business might have otherwise been advantageous.

In addition, for purposes of Section 355(e), any acquisitions or issuances of our stock or Republic Wireless’s stock that occur within two years after the Spin-Off will generally be presumed to be part of a plan or series of related transactions with respect to the Spin-Off. Although we or Republic Wireless may be able to rebut that presumption, determining whether an acquisition or issuance is part of a plan or series of related transactions under these rules is generally complex, inherently factual and subject to interpretation of the facts and circumstances of a particular case. For this purpose, whether any increase in voting power by holders of our Class B common stock by reason of the conversion by other holders of our Class B common stock to our Class A common stock should be considered an acquisition of voting power as part of a plan or series of related transactions is unclear.

In light of the implications that would arise for us if Section 355(e) were to apply to the Spin-Off, we received an opinion from Kilpatrick Townsend & Stockton LLP, our special tax counsel, in conjunction with our initial public offering to the effect that (i) as of November 9, 2017, we are not required to recognize gain with respect to the Spin-Off pursuant to Section 355(e) as a result of one or more persons directly or indirectly acquiring our stock, and (ii) any increases in voting power attributable to conversions of our Class B common stock to Class A common stock by those who hold our Class B common stock as of our initial public offering will not cause us to recognize gain with respect to the Spin-Off pursuant to Section 355(e) (the “Tax Opinion”). The Tax Opinion is not binding on the Internal Revenue Service (the “IRS”) or the courts, however, and the IRS or the courts may not agree with the conclusions reached in the Tax Opinion. Moreover, the Tax Opinion was based upon, among other things, then-current law and certain assumptions and representations as to factual matters made by us. Any change in currently applicable law, which may be retroactive, or the failure of any such assumptions or representations to be true, could adversely affect the validity of the conclusions reached in the Tax Opinion. If the conclusions in the Tax Opinion were not correct and Section 355(e) were to apply to the Spin-Off, we would be liable for significant U.S. federal income tax related liabilities and indemnity obligations under the Tax Sharing Agreement.

Even if Section 355(e) does not apply to the Spin-Off as of the date of our initial public offering or as a result of an increase in voting power attributable to conversions of our Class B common stock by those who hold such stock as of our initial public offering, subsequent acquisitions or issuances of our stock could be treated as part of a plan or series of related transactions with respect to the Spin-Off. Accordingly, in light of the requirements of Section 355(e), we might forego share repurchases, stock issuances and other strategic transactions for some period of time following our initial public offering. Notwithstanding the foregoing, it is possible that we, Republic Wireless or the holders of our respective stock might inadvertently cause, permit or otherwise not prevent a change in the ownership of our stock or Republic Wireless’s stock to occur, which would cause Section 355(e) to apply to the Spin-Off, thereby triggering significant U.S. federal income tax-related liabilities and indemnity obligations under the Tax Sharing Agreement of approximately $50 million.

This approximation is based on our current expectations and the tax laws in effect as of our initial public offering. However, we cannot provide any assurance that this estimate will prove to be accurate in the event that Section 355(e) were to apply.

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

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, as provided in “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities and equity, and the amount of revenue and expenses that are not readily apparent from other sources. Significant assumptions and estimates used in preparing our consolidated financial statements include those related to revenue recognition, capitalized internal-use software costs, other non-income taxes, business combination and valuation of goodwill and purchased intangible assets and share-based compensation. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our Class A common stock.

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

As a public company, we are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”), and the rules and regulations of the applicable listing standards of the NASDAQ Global Select Market. We expect that the requirements of these rules and regulations will continue to increase our legal, accounting and financial compliance costs, make some activities more difficult, time-consuming and costly and place significant strain on our personnel, systems and resources.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. Our disclosure controls and other procedures are designed to ensure that information required to be disclosed by us in the reports that we will file with the Securities and Exchange Commission ("SEC") is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers, and we continue to evaluate how to improve controls. We are also continuing to improve our internal control over financial reporting. In order to develop, maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs and significant management oversight.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our consolidated financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting could also adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our Class A common stock. In addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the NASDAQ Global Select Market. We are not currently required to comply with the SEC rules that implement Section 404 of the Sarbanes-Oxley Act and are therefore not required to make a formal assessment of the effectiveness of our internal control over financial reporting for that purpose. As a public company, we are required to provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second Annual Report on Form 10-K.

Our independent registered public accounting firm is not required to attest to the effectiveness of our internal control over financial reporting until after we are no longer an “emerging growth company” as defined in the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"). At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could have a material and adverse effect on our business, results of operations and financial condition and could cause a decline in the trading price of our Class A common stock.

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

We review our intangible assets for impairment when events or changes in circumstances indicate the carrying value may not be recoverable. Goodwill is required to be tested for impairment at least annually. An adverse change in market conditions, particularly if such change has the effect of changing one of our critical assumptions or estimates, could result in a change to the estimation of fair value that could result in an impairment charge to our goodwill or intangible assets. Any such charges may adversely affect our results of operations.

We are an “emerging growth company” and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our Class A common stock less attractive to investors.

We are an “emerging growth company,” as defined in the JOBS Act, and 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 cannot predict if investors will find our Class A common stock less attractive because we will rely on these exemptions. If some investors find our Class A common stock less attractive as a result, there may be a less active trading market for our Class A common stock and the trading price of our Class A common stock may be more volatile.

Earthquakes, hurricanes, fires, floods, power outages, terrorist attacks and other significant events could disrupt our business and ability to serve our clients.

A significant event, such as an earthquake, hurricane, a fire, a flood or a power outage, could have a material adverse effect on our business, results of operations or financial condition. Our IP network is designed to be redundant and to offer seamless backup support in an emergency. While our network is designed to withstand the loss of any one data center at any point in time, the simultaneous failure of multiple data centers could disrupt our ability to serve our clients. Additionally, certain of our capabilities cannot be made redundant feasibly or cost-effectively. Acts of physical or cyber terrorism or other geopolitical unrest also could cause disruptions in our business. The adverse impacts of these risks may increase if our disaster recovery plans prove to be inadequate.

As we have elected to avail ourselves of the JOBS Act extended accounting transition period, our financial statements may not be easily comparable to other companies.

Pursuant to the JOBS Act, as an “emerging growth company,” we can elect to avail ourselves of the extended transition period for any new or revised accounting standards that may be issued by the Public Company Accounting Oversight Board or the SEC. We have elected to avail ourselves of such extended transition period, which means that when a standard is issued or revised and it has different application dates for public or private companies, we, as an “emerging growth company,” expect to adopt the standard on the timeline for private companies. This may make comparison of our financial statements with other public companies that are not emerging growth companies or emerging growth companies that have opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

Our financial condition and growth may depend upon the successful integration of acquired businesses. We may not be able to efficiently and effectively integrate acquired operations, and thus may not fully realize the anticipated benefits from such acquisitions.

Achieving the anticipated benefits of any acquisitions depends in part upon whether we can integrate new businesses in an efficient and effective manner. The integration of any acquired businesses involves a number of risks, including, but not limited to:

- demands on management related to any significant increase in size after the acquisition;
- the disruption of ongoing business and the diversion of management’s attention from the management of daily operations to management of integration activities;
- failure to fully achieve expected synergies and costs savings;
- unanticipated impediments in the integration of departments, systems, including accounting systems, technologies, books and records and procedures, as well as in maintaining uniform standards, controls, including internal control over financial reporting required by the Sarbanes-Oxley Act, procedures and policies;
- loss of customers or the failure of customers to order incremental services that we expect them to order;
- failure to provision services that are ordered by customers during the integration period;
- higher integration costs than anticipated; and
- difficulties in the assimilation and retention of highly qualified, experienced employees, many of whom may be geographically dispersed.

Successful integration of any acquired businesses or operations will depend on our ability to manage these operations, realize opportunities for revenue growth presented by strengthened service offerings and expanded geographic market coverage, obtain better terms from our vendors due to increased buying power, and eliminate redundant and excess costs to fully realize the expected synergies. Because of difficulties in combining geographically distant operations and systems which may not be fully compatible, we may not be able to achieve the financial strength and growth we anticipate from the acquisitions.

We may not realize our anticipated benefits from our acquisitions, if any, or may be unable to efficiently and effectively integrate acquired operations as planned. If we fail to integrate acquired businesses and operations efficiently and effectively or fail to realize the benefits we anticipate, we would be likely to experience material adverse effects on our business, financial condition, results of operations and future prospects.

Our credit facility contains restrictive and financial covenants that may limit our operating flexibility.

Our credit facility contains certain restrictive covenants that either limit our ability to, or require a mandatory prepayment in the event we, among other things, incur additional indebtedness, issue guarantees, create liens on assets, make certain investments, merge with or acquire other companies, change business locations, pay dividends or make certain other restricted payments, transfer or dispose of assets, enter into transactions with affiliates and enter into various specified transactions. We, therefore, may not be able to engage in any of the foregoing transactions unless we obtain the consent of our lenders or prepay the outstanding amount under our credit facility. Our credit facility also contains certain financial covenants and financial reporting requirements. Our obligations under our credit facility are secured by all of our property, with certain exceptions. We may not be able to generate sufficient cash flow or sales to meet the financial covenants or pay the principal and interest under our credit facility. Furthermore, future working capital, borrowings or equity financing could be unavailable to repay or refinance the amounts outstanding under our credit facility. In the event of a liquidation, all outstanding principal and interest would have to be repaid prior to distribution of assets to unsecured creditors, and the holders of our Class A and Class B common stock would receive a portion of any liquidation proceeds only if all of our creditors, including our lenders, were first repaid in full.

If we are unable to comply with the restrictive and financial covenants in our credit facility, there would be a default under the terms of that agreement, and this could result in an acceleration of payment of funds that have been borrowed.

If we were unable to comply with the restrictive and financial covenants in our credit facility, there would be a default under the terms of that agreement. As a result, any borrowings under other instruments that contain cross-acceleration or cross default provisions may also be accelerated and become due and payable. If any of these events occur, there can be no assurance that we would be able to make necessary payments to the lenders or that we would be able to find alternative financing. Even if we were able to obtain alternative financing, there can be no assurance that it would be on terms that are acceptable.

Risks Related to Ownership of Our Class A Common Stock

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

Prior to our initial public offering, there was no public market for shares of our Class A common stock. On November 10, 2017, we sold shares of our Class A common stock to the public at $20.00 per share. From November 10, 2017, the date that our Class A common stock began trading on the NASDAQ Global

Select Market, through January 31, 2018, the trading price of our Class A common stock has ranged from $18.05 per share to $24.99 per share. The trading price of our Class A common stock may continue to be volatile and could fluctuate significantly in response to numerous factors, many of which are beyond our control, including:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the trading prices and trading volumes of technology stocks;
- volatility in the trading volumes of our Class A common stock;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- sales of shares of our Class A common stock by us or our stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections or our failure to meet those projections;
- announcements by us or our competitors of new products or services;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our results of operations or fluctuations in our results of operations;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both;
- regulatory actions or developments affecting our operations, those of our competitors or our industry more broadly;
- developments or disputes concerning our intellectual property or other proprietary rights;
- announced or completed acquisitions of businesses, products, services or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- new rules adopted by certain index providers, such as S&P Dow Jones, that limit or preclude inclusion of companies with multi-class capital structures in certain of their indices;
- any significant change in our management; and
- general economic conditions and slow or negative growth of our markets.

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

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

The market price of our Class A common stock could decline as a result of substantial sales of our Class A common stock, particularly sales by our directors, executive officers and significant stockholders, or the perception in the market that holders of a large number of shares intend to sell their shares.

Additionally, the shares of Class A common stock subject to outstanding options and restricted stock unit awards under our equity incentive plans and the shares reserved for future issuance under our equity incentive plans will become eligible for sale in the public market upon issuance. Certain holders of our Class A common stock have rights, subject to some conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for our stockholders or ourselves.

The dual class structure of our common stock has the effect of concentrating voting control with those stockholders who held our capital stock prior to the completion of our initial public offering, including our directors, executive officers and significant stockholders and their respective affiliates who held in the aggregate 89.6% of the voting power of our capital as of December 31, 2017. This limits or precludes your ability to influence corporate matters, including the election of directors, amendments to our organizational documents and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval.

Our Class A common stock has one vote per share, and our Class B common stock has ten votes per share. As of December 31, 2017, our directors, executive officers and holders of more than 5% of our common stock, and their respective affiliates, hold in the aggregate 89.6% of the voting power of our capital stock. Because of the ten-to-one voting ratio between our Class B and Class A common stock, the holders of our Class B common stock collectively will continue to control a majority of the combined voting power of our common stock and therefore be able to control all matters submitted to our stockholders for approval. This concentrated control limits or precludes your ability to influence corporate matters for the foreseeable future, including the election of directors, amendments to our organizational documents, and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval. In addition, this may prevent or discourage unsolicited acquisition proposals or offers for our capital stock that you may feel are in your best interest as one of our stockholders.

Future transfers by holders of Class B common stock will generally result in those shares converting to Class A common stock, subject to limited exceptions, such as certain transfers effected for estate planning purposes. The conversion of Class B common stock to Class A common stock will have the effect, over time, of increasing the relative voting power of those holders of Class B common stock who retain their shares in the long term.

We may become controlled by David A. Morken, our Cofounder and Chief Executive Officer, whose interests may differ from other stockholders.

If all or substantially all of the holders of our Class B common stock convert their shares into Class A common stock voluntarily or otherwise, David A. Morken, our Cofounder and Chief Executive Officer may control approximately 53% of the combined voting power of our outstanding capital stock. As a result, Mr. Morken may have the ability to control the appointment of our management, the entering into of mergers, sales of substantially all or all of our assets and other extraordinary transactions and influence amendments to our certificate of incorporation and bylaws. If Mr. Morken controls a majority of the voting power of our outstanding capital stock, he would have the ability to control the vote in any election of directors and would have the ability to prevent any transaction that requires shareholder approval regardless of whether other shareholders believe the transaction is in our best interests. In any of these matters, the interests of Mr. Morken may differ from or conflict with your interests. Moreover, this concentration of ownership may also adversely affect the trading price for our Class A common stock to the extent investors perceive disadvantages in owning stock of a company with a controlling shareholder.

To the extent we become a "controlled company," we plan to take advantage of the applicable exemption to the corporate governance rules for NASDAQ-listed companies, which could make our Class A common stock less attractive to some investors or otherwise harm our stock price.

If all or substantially all of the holders of our Class B common stock convert their shares into Class A common stock voluntarily or otherwise, we may qualify as a "controlled company" under the corporate governance rules for NASDAQ-listed companies and expect to take advantage of related exemptions to the corporate governance rules. As a result, we will not be required to have a majority of our board of directors be independent, nor will we be required to have a compensation committee or an independent nominating function. Accordingly, should the interests of our controlling stockholder differ from those of other stockholders, the other stockholders may not have the same protections afforded to stockholders of companies that are subject to all of the corporate governance rules for NASDAQ-listed companies. Our status as a controlled company could make our Class A common stock less attractive to some investors or otherwise harm our stock price. If fewer shares of Class B common stock are converted into shares of Class A common stock than we expect, Mr. Morken may not control sufficient voting power of our outstanding capital stock for us to qualify as a "controlled company" under the corporate governance rules for NASDAQ-listed companies. If we are not a "controlled company" by the first anniversary of our listing on NASDAQ, we will have to comply with the corporate governance standards applicable to non-controlled companies, including with respect to independent directors, and we may not have a long-lead time to satisfy those standards.

We cannot predict the impact our capital structure may have on our stock price.

In July 2017, S&P Dow Jones, a provider of widely followed stock indices, announced that companies with multiple share classes, such as ours, will not be eligible for inclusion in certain of their indices. As a result, our Class A common stock will likely not be eligible for these stock indices. Additionally, FTSE Russell, another provider of widely followed stock indices, recently stated that it plans to require new constituents of its indices to have at least five percent of their voting rights in the hands of public stockholders. Many investment funds are precluded from investing in companies that are not included in such indices, and these funds would be unable to purchase our Class A common stock if we were not included in such indices. We cannot assure you that other stock indices will not take a similar approach to S&P Dow Jones or FTSE Russell in the future. Exclusion from indices could make our Class A common stock less attractive to investors and, as a result, the market price of our Class A common stock could be adversely affected.

If securities or industry analysts cease publishing research or reports about us, our business or our market, or if they change their recommendations regarding our Class A common stock adversely, the trading price of our Class A common stock and trading volume could decline.

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

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

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

- authorizing "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our Class A and Class B common stock;
- limiting the liability of, and providing indemnification to, our directors and officers;
- limiting the ability of our stockholders to call and bring business before special meetings;
- providing for a dual class common stock structure in which holders of our Class B common stock have the ability to control the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the outstanding shares of our Class A and Class B common stock, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or its assets;
- providing that our board of directors is classified into three classes of directors with staggered three-year terms;
- prohibiting stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- requiring super-majority voting to amend some provisions in our second amended and restated certificate of incorporation and second amended and restated bylaws;
- requiring advance notice of stockholder proposals for business to be conducted at meetings of our stockholders and for nominations of candidates for election to our board of directors; and
- controlling the procedures for the conduct and scheduling of board of directors and stockholder meetings.

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

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

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

Our second amended and restated certificate of incorporation and our second amended and restated bylaws include super-majority voting provisions that will limit your ability to influence corporate matters.

Our second amended and restated certificate of incorporation and our second amended and restated bylaws include provisions that require the affirmative vote of two-thirds of all of the outstanding shares of our capital stock entitled to vote to effect certain changes. These changes include amending or repealing our second amended and restated bylaws or second amended and restated certificate of incorporation or removing a director from office for cause. If all or substantially all of the holders of our Class B common stock convert their shares into Class A common stock voluntarily or otherwise, Mr. Morken may control the majority of the voting power of our outstanding capital stock, and therefore he may have the ability to prevent any such changes, which will limit your ability to influence corporate matters.

Our amended and restated bylaws provide, subject to certain exceptions, that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for certain stockholder litigation matters, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees or stockholders.

Our amended and restated bylaws provide, subject to limited exceptions, that the Court of Chancery of the State of Delaware will, to the fullest extent permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or stockholder to us or our stockholders; (iii) any action asserting a claim against us that is governed by the internal affairs doctrine; or (iv) any action arising pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws. If a stockholder files an action within the scope of the preceding sentence in any other court than a court located in Delaware, the stockholder shall be deemed to have consented to the provisions of our amended and restated bylaws described above. This choice of forum provision may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or any of our directors, officers, other employees or stockholders which may discourage lawsuits with respect to such claims. Alternatively, if a court were to find the choice of forum provision contained in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could materially adversely affect our business, financial condition and results of operations.

We may need additional capital in the future and such capital may be limited or unavailable. Failure to raise capital when needed could prevent us from growing in accordance with our plans.

We may require more capital in the future from equity or debt financings to fund our operations, finance investments in equipment and infrastructure, acquire complementary businesses and technologies, and respond to competitive pressures and potential strategic opportunities. If we are required to raise additional funds through further issuances of equity or other securities convertible into equity, our existing stockholders could suffer significant dilution, and any new shares we issue could have rights, preferences or privileges senior to those of the holders of our Class A common stock. The additional capital we may seek may not be available on favorable terms or at all. In addition, our credit facility limits our ability to incur additional indebtedness under certain circumstances. If we are unable to obtain capital on favorable terms or at all, we may have to reduce our operations or forego opportunities, and this may have a material adverse effect on our business, financial condition and results of operations.

We do not intend to pay dividends for the foreseeable future.

We have never declared or paid any cash dividends on our Class A common stock and do not intend to pay any cash dividends in the foreseeable future. We anticipate that we will retain all of our future earnings for use in the development of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our board of directors. In addition, the terms of our credit facility contain restrictions on our ability to declare and pay cash dividends on our capital stock. Accordingly, investors must rely on sales of their Class A common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

If a large number of shares of our Class A common stock is sold in the public market, the sales could reduce the trading price of our Class A common stock and impede our ability to raise future capital.

We cannot predict what effect, if any, future issuances by us of our Class A common stock will have on the market price of our Class A common stock. In addition, shares of our Class A common stock that we issue in connection with an acquisition may not be subject to resale restrictions. The market price of our Class A common stock could drop significantly if certain large holders of our Class A common stock, or recipients of our Class A common stock in connection with an acquisition, sell all or a significant portion of their shares of Class A common stock or are perceived by the market as intending to sell these shares other than in an orderly manner. In addition, these sales could impair our ability to raise capital through the sale of additional Class A common stock in the capital markets.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters is located in Raleigh, North Carolina, where we lease approximately 83,218 square feet of office space at 900 Main Campus Drive. We also lease approximately 40,657 square feet of space subject to a facilities sharing agreement with Republic Wireless. This operating space is leased under leases expiring in 2022. Additionally, on January 12, 2018, we entered into a seven-year office building lease with Keystone-Centennial II, LLC for approximately 40,000 square feet of additional office space on the Centennial Campus of North Carolina State University in Raleigh, North Carolina.

In addition to our headquarters, we lease space in Denver, CO and Rochester, NY, each of which are used for both our CPaaS and Other segments. We also maintain data centers located in Raleigh, NC (including our network operations center); Los Angeles, CA; Dallas, TX; Atlanta, GA; and New York, NY.

We lease all our facilities and do not own any real property. We may procure additional space in the future as we continue to add employees or expand geographically. We believe our facilities are adequate and suitable for our current needs, and to the extent we require it, we believe additional or alternative space will be readily available in the future to accommodate our operations.

Item 3. 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; that partial dismissal is the subject of subsequent motions that have not yet been resolved. 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 and that dismissal is currently pending appeal; the remaining 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.

We intend to vigorously defend these lawsuits and believe we have meritorious defenses to each. However, litigation is inherently uncertain, and any judgment or injunctive relief entered against us or any adverse settlement could negatively affect our business, results of operations and financial condition.

In 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.

At December 31, 2017, we had 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. At December 31, 2017, we were 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. At December 31, 2017, Verizon had asserted counterclaims against us. See Note 17, "Subsequent Events," in our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, for current developments.

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

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market Information for Class A Common Stock

Our Class A common stock has been listed on the NASDAQ Global Select Market under the symbol "BAND" since November 10, 2017. Prior to that date, there was no public trading market for our Class A common stock. The following table sets forth for the periods indicated the high and low intraday sales prices per share of our Class A common stock as reported on the NASDAQ Global Select Market:

	Price	
Year ended December 31, 2017	High	Low
Fourth Quarter (from November 10, 2017)	$24.99	$18.05

Stockholders

As of December 31, 2017, we had 110 holders of record of our Class A and Class B common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

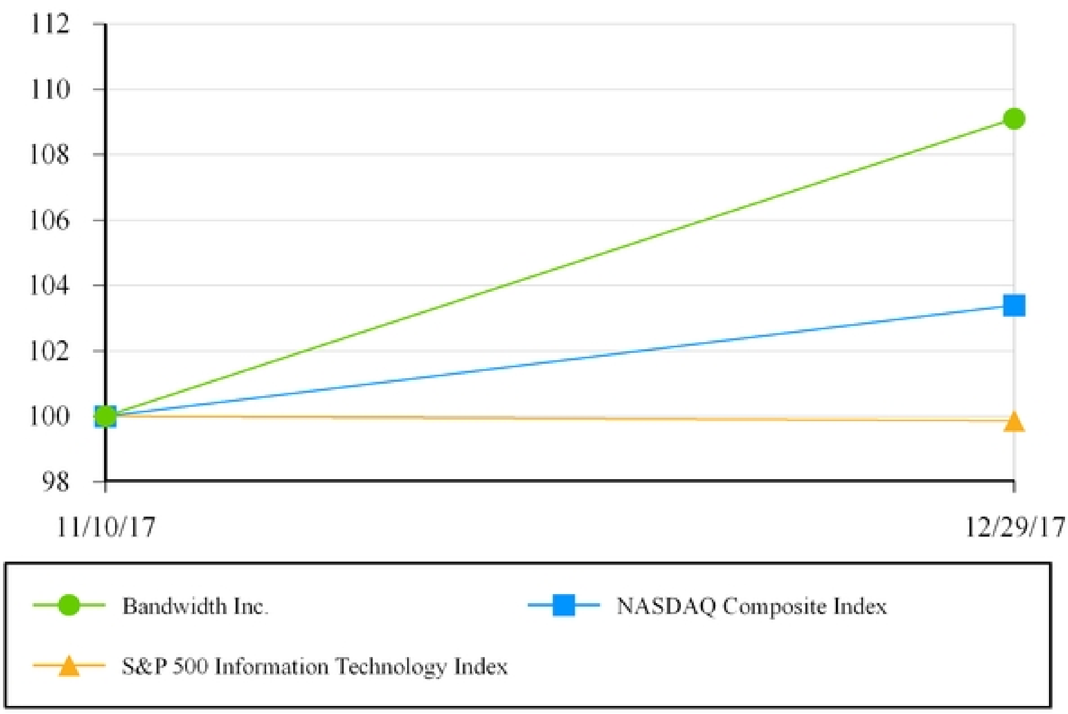
Dividend Policy

We have never declared or paid any cash dividend on our common stock. We currently intend to retain all of our future earnings, if any, generated by our operations for the development and growth of our business for the foreseeable future. The decision to pay dividends is at the discretion of our board of directors and depends upon our financial condition, results of operations, capital requirements, and other factors that our board of directors deems relevant.

Stock Performance Graph

The graph below compares the cumulative total return to our stockholders between November 10, 2017 (the date our Class A common stock commenced trading on the NASDAQ Global Select Market) through December 31, 2017 in comparison to the NASDAQ Composite Index and the S&P 500 Information Technology Index. The graph assumes $100 was invested in the Class A common stock of Bandwidth Inc., the NASDAQ Composite Index and the S&P 500 Information Technology Index, and assumes reinvestment of any dividends.

The comparisons in the graph below are based on historical data and are not indicative of, nor intended to forecast, the future performance of our Class A common stock.



Securities Authorized for Issuance under Equity Compensation Plans

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2018 Annual Meeting of Shareholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017.

Recent Sales of Unregistered Securities

From January 1, 2017 through December 31, 2017, we sold the following securities on an unregistered basis: (a) 47,760 shares of common stock upon the exercise of options under our 2001 and 2010 Plans, at exercise prices ranging from $4.70 to $6.74 per share, for an aggregate exercise price of $0.2 million; and (b) 17,260 shares of common stock upon the exercise of warrants, at exercise prices ranging from $5.80 to $6.57 per share, for an aggregate exercise price of $0.1 million.

Use of Proceeds from Public Offering of Common Stock

In November 2017, we sold 4,000,000 shares of our Class A common stock at a public offering price of $20.00 per share, including shares sold in connection with the exercise of the underwriters' option to purchase additional shares. The offer and sale of all the shares in the initial public offering were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-220945), which was declared effective by the SEC on November 9, 2017. We received proceeds of $74.4 million, after deducting underwriting discounts and commissions of $5.6 million. In addition, we incurred expenses of approximately $5.4 million; thus, the net offering proceeds, after deducting underwriting discounts and offering expenses, were approximately $69.0 million. Upon the initial public offering and in accordance with David Morken's employment agreement, the Chief Executive Officer received a cash bonus of $750,000. No other 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. The underwriters of our initial public offering were Morgan Stanley, KeyBank Capital Markets, Baird, Canaccord Genuity and JMP Securities.

There has been no material change in the planned use of proceeds from our initial public offering as described in our final prospectus filed with the SEC on November 13, 2017 pursuant to Rule 424(b) under the Securities Act.

Item 6. Selected Financial Data

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

Consolidated Statements of Operations Data:	Year Ended December 31, 2015	2016	2017
	(In thousands)		
Revenue:			
CPaaS revenue	$ 101,502	$ 117,078	$ 131,572
Other revenue	36,299	35,057	31,383
Total revenue	137,801	152,135	162,955
Cost of revenue:			
CPaaS cost of revenue	64,760	71,218	75,859
Other cost of revenue	14,482	14,000	13,403
Total cost of revenue	79,242	85,218	89,262
Gross profit	58,559	66,917	73,693
Operating expenses:			
Research and development	7,375	8,520	10,789
Sales and marketing	8,620	9,294	11,218
General and administrative	34,602	33,859	37,069
Total operating expenses	50,597	51,673	59,076
Operating income	7,962	15,244	14,617
Other expense:			
Interest expense, net	(589)	(908)	(1,728)
Total other expense	(589)	(908)	(1,728)
Income from continuing operations before income taxes	7,373	14,336	12,889
Income tax (provision) benefit	(408)	11,094	(6,918)
Income from continuing operations	6,965	25,430	5,971
Loss from discontinued operations, net of income taxes	(13,665)	(3,072)	—
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971
Earnings from continuing operations per share:			
Income from continuing operations	$ 6,965	$ 25,430	$ 5,971
Less: income from continuing operations allocated to participating securities	931	3,355	644
Income from continuing operations attributable to common stockholders	$ 6,034	$ 22,075	$ 5,327
Income from continuing operations per share:			
Basic	$ 0.52	$ 1.89	$ 0.42
Diluted	$ 0.48	$ 1.72	$ 0.37
Weighted average number of common shares outstanding:			
Basic	11,497,727	11,678,568	12,590,221
Diluted	12,456,540	12,870,632	14,543,170

Consolidated Balance Sheet Data:	As of December 31, 2016	2017
	(In thousands)	
Cash and cash equivalents	$ 6,788	$ 37,627
Working capital	(2,427)	40,734
Total assets	69,973	104,494
Long-term debt and capital lease obligations, net of current portion	37,738	—
Series A redeemable convertible preferred stock	21,818	—
Total stockholders’ (deficit) equity	(22,374)	76,711

Non-GAAP Financial Measures

We use Non-GAAP gross profit, Non-GAAP gross margin, Adjusted EBITDA, Non-GAAP net income and free cash flow for financial and operational decision making and to evaluate period-to-period differences in our performance. Non-GAAP gross profit, Non-GAAP gross margin, Adjusted EBITDA, 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."

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.

Consolidated

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
Consolidated Gross Profit	$ 58,559	$ 66,917	$ 73,693
Depreciation	5,258	4,574	4,315
Stock-based compensation	45	61	80
Non-GAAP Gross Profit	**$ 63,862**	**$ 71,552**	**$ 78,088**
Non-GAAP Gross Margin %	**46%**	**47%**	**48%**

By Segment

CPaaS

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
CPaaS Gross Profit	$ 36,742	$ 45,860	$ 55,713
Depreciation	5,258	4,574	4,315
Stock-based compensation	45	61	80
Non-GAAP Gross Profit	**$ 42,045**	**$ 50,495**	**$ 60,108**
Non-GAAP Gross CPaaS Margin %	**41%**	**43%**	**46%**

Other

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

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 provision (benefit);
- interest expense, net;
- depreciation and amortization expense;
- stock-based compensation expense;
- impairment of intangible assets, if any; and
- loss (gain) on disposal of property and equipment.

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.

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
Income from continuing operations	$ 6,965	$ 25,430	$ 5,971
Income tax provision (benefit)	408	(11,094)	6,918
Interest expense, net	589	908	1,728
Depreciation	6,167	5,251	4,873
Amortization	908	891	839
Stock-based compensation	3,493	1,370	1,803
Impairment of intangible asset	—	695	—
Loss on disposal of property and equipment	382	19	91
Adjusted EBITDA	**$ 18,912**	**$ 23,470**	**$ 22,223**

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;
- 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;
- estimated tax impact of above adjustments;
- benefit resulting from the release of the valuation allowance on our deferred tax assets (DTA); and
- impact of remeasurement of DTA as a result of 2017 tax reform act

We calculate Non-GAAP basic and diluted shares by adding the weighted average of outstanding Series A redeemable convertible preferred stock to the weighted average number of outstanding basic and diluted shares, respectively.

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.

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971
Stock-based compensation	3,493	1,370	1,803
Amortization related to acquisitions	520	520	520
Impairment of intangible asset	—	695	—
Loss on disposal of property and equipment	382	19	91
Estimated tax effects of adjustments (1)	—	(994)	(921)
Release of valuation allowance (2)	—	(14,138)	—
Remeasurement of DTA associated with tax rate change (3)	—	—	2,073
Non-GAAP net (loss) income	**$ (2,305)**	**$ 9,830**	**$ 9,537**
Non-GAAP net (loss) income per non-GAAP share			
Basic	$ (0.17)	$ 0.73	$ 0.68
Diluted	$ (0.16)	$ 0.67	$ 0.59
Non-GAAP Weighted Average Number of Shares outstanding			
Basic	11,497,727	11,678,568	12,590,221
Series A redeemable convertible preferred stock outstanding	1,775,000	1,775,000	1,522,123
Non-GAAP Basic Shares	**13,272,727**	**13,453,568**	**14,112,344**
Diluted	12,456,540	12,870,632	14,543,170
Series A redeemable convertible preferred stock outstanding	1,775,000	1,775,000	1,522,123
Non-GAAP Diluted Shares	**14,231,540**	**14,645,632**	**16,065,293**

(1) The Company had a full valuation allowance against its deferred tax assets for the year ended December 31, 2015.

(2) The Company recognized a tax benefit of $14,138 due to the release of the deferred tax asset valuation allowance subsequent to the spin-off of Republic Wireless.

(3) On December 22, 2017, the Tax Cuts and Jobs Act was enacted into law. As a result of this change in tax law, the Company recorded a remeasurement of its deferred tax assets, which resulted in additional income tax expense of $2,073.

Free Cash Flow

Free cash flow represents net cash provided by 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.

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
Net cash provided by operating activities from continuing operations	$ 18,651	$ 16,942	$ 14,623
Net cash used in investing activities from continuing operations(1)	(5,102)	(6,061)	(7,963)
Free cash flow	**$ 13,549**	**$ 10,881**	**$ 6,660**

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

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes that are included elsewhere in this Annual Report Form 10-K. 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 Annual Report Form 10-K. 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 APIs for voice and text functionality and our owned and managed, purpose- built 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 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 years ended December 31, 2015, 2016 and 2017, total revenue was $137.8 million, $152.1 million and $163.0 million, respectively. CPaaS revenue for the years ended December 31, 2015, 2016 and 2017 was $101.5 million, $117.1 million and $131.6 million, respectively, representing an increased rate of 15% in 2016 and an increase of 12% in 2017. Net (loss) income for the years ended December 31, 2015, 2016 and 2017 was $(6.7) million, $22.4 million and $6.0 million, respectively. The number of active CPaaS customer accounts increased from 704 as of December 31, 2015, to 798 as of December 31, 2016, or 13%. The number of active CPaaS customer accounts further increased to 965 as of December 31, 2017, up 21% from December 31, 2016.

Initial Public Offering

On November 10, 2017, we sold 4,000,000 shares of our Class A common stock at a public offering price of $20.00 per share. We received proceeds of $74,400, after deducting underwriting discounts and commissions of $5,600. Immediately prior to the pricing of the initial public offering on November 9, 2017, all shares of our then-outstanding Series A redeemable convertible preferred stock ("Series A preferred stock") converted into an aggregate of 1,775,000 shares of Class A voting common stock ("Old Class A common stock") and an aggregate of 13,586,485 shares of Old Class A common stock converted into Class B common stock. In addition, an aggregate of 34,840 shares of Class B non-voting common stock ("Old Class B common stock") converted into Class A common stock and warrants exercisable into shares of Old Class A common stock became exercisable into shares of Class B common stock. See Note 10, "Redeemable Convertible Preferred Stock and Stockholders' (Deficit) Equity," to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K, for further discussion of Class A and B common stock.

Key Performance Indicators

We monitor the following key performance indicators ("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:

	Year Ended December 31,		
	2015	2016	2017
	(Dollars in thousands)		
Number of active CPaaS customers (as of period end)	704	798	965
Dollar-based net retention rate	115%	111%	107%
Adjusted EBITDA	$ 18,912	$ 23,470	$ 22,223
Free cash flow	$ 13,549	$ 10,881	$ 6,660

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 years ended December 31, 2015, 2016 and 2017, revenue from active CPaaS customer accounts represented approximately 99% of total CPaaS revenue.

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 years ended December 31, 2015, 2016 and 2017, we generated 55%, 56% 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 years ended December 31, 2015, 2016 and 2017, we generated 42%, 41% and 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 47%, 44% and 41% of outstanding accounts receivable, net of allowance for doubtful accounts as of December 31, 2015, 2016 and 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 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

For the years ended December 31, 2015, 2016 and 2017, our effective tax rate was 5.5%, (77.4)% and 53.7%, 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 and the enactment of the Tax Cuts and Jobs Act (the “Act”) in the fourth quarter of 2017.

Results of Operations

Consolidated Results of Operations

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

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
Revenue:			
CPaaS revenue	$ 101,502	$ 117,078	$ 131,572
Other revenue	36,299	35,057	31,383
Total revenue	137,801	152,135	162,955
Cost of revenue:			
CPaaS cost of revenue	64,760	71,218	75,859
Other cost of revenue	14,482	14,000	13,403
Total cost of revenue	79,242	85,218	89,262
Gross profit:			
CPaaS	36,742	45,860	55,713
Other	21,817	21,057	17,980
Total gross profit	58,559	66,917	73,693
Operating expenses:			
Research and development	7,375	8,520	10,789
Sales and marketing	8,620	9,294	11,218
General and administrative	34,602	33,859	37,069
Total operating expenses	50,597	51,673	59,076
Operating income	7,962	15,244	14,617
Other expense:			
Interest expense, net	(589)	(908)	(1,728)
Income from continuing operations before income taxes	7,373	14,336	12,889
Income tax (provision) benefit	(408)	11,094	(6,918)
Income from continuing operations	6,965	25,430	5,971
Loss from discontinued operations, net of income taxes	(13,665)	(3,072)	—
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971

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

	Year Ended December 31,		
	2015	2016	2017
Revenue:			
CPaaS revenue	74 %	77 %	81 %
Other revenue	26 %	23 %	19 %
Total revenue	100 %	100 %	100 %
Cost of revenue:			
CPaaS cost of revenue	47 %	47 %	47 %
Other cost of revenue	11 %	9 %	8 %
Total cost of revenue	58 %	56 %	55 %
Gross profit:			
CPaaS	27 %	30 %	34 %
Other	16 %	14 %	11 %
Total gross profit	42 %	44 %	45 %
Operating expenses:			
Research and development	5 %	6 %	7 %
Sales and marketing	6 %	6 %	7 %
General and administrative	25 %	22 %	23 %
Total operating expenses	36 %	34 %	37 %
Operating income	6 %	10 %	9 %
Other expense:			
Interest expense, net	— %	(1)%	(1)%
Income from continuing operations before income taxes	5 %	9 %	8 %
Income tax (provision) benefit	— %	7 %	(4)%
Income from continuing operations	5 %	17 %	4 %
Loss from discontinued operations, net of income taxes	(10)%	(2)%	— %
Net (loss) income	(5)%	15 %	4 %

(*) Columns may not foot due to rounding.

Comparison of the Years Ended December 31, 2016 and 2017

Revenue

	Year Ended December 31, 2016	Year Ended December 31, 2017	Change	
	(In thousands)			
CPaaS revenue	$ 117,078	$ 131,572	$ 14,494	12 %
Other revenue	35,057	31,383	(3,674)	(10)%
Total revenue	$ 152,135	$ 162,955	$ 10,820	7 %

In 2017, total revenue increased by $10.8 million, or 7%, compared to 2016, and CPaaS revenue increased by $14.5 million, or 12%. As a percentage of total revenue, CPaaS revenue increased from 77% to 81% from 2016 to 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 $21.4 million of the increase in CPaaS revenue, and our phone number services and 911-enabled phone number services, which accounted for $4.1 million of the increase in CPaaS revenue. This overall increase in CPaaS revenue was partially offset by $11.1 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 2017 were reflected in our dollar-based net retention rate of 107%. The increase in usage was also attributable to a 21% increase in the number of active CPaaS customer accounts, from 798 as of December 31, 2016 to 965 as of December 31, 2017. In addition, revenue from new CPaaS customers contributed $5.7 million, or 5%, to CPaaS revenue for 2017 compared to $4.2 million, or 4% to CPaaS revenue in 2016. Other revenue decreased by $3.7 million, or 10%, due to expected declines in our legacy services of $3.1 million and a decrease in indirect revenue of $0.6 million.

Cost of Revenue and Gross Margin

	Year Ended December 31, 2016	Year Ended December 31, 2017	Change	
	(In thousands)			
Cost of revenue:				
CPaaS cost of revenue	$ 71,218	$ 75,859	$ 4,641	7 %
Other cost of revenue	14,000	13,403	(597)	(4)%
Total cost of revenue	85,218	89,262	4,044	5 %
Gross profit	$ 66,917	$ 73,693	$ 6,776	10 %
Gross margin:				
CPaaS	39%	42%		
Other	60%	57%		
Total gross margin	44%	45%		

In 2017, total gross profit increased by $6.8 million, or 10%, compared to 2016. Total gross margin increased from 44% to 45% during the same period. In 2017, CPaaS cost of revenue increased by $4.6 million, or 7% compared 2016. CPaaS cost of revenue increased primarily due to an increase in voice usage costs of $1.9 million due to growth in minutes used by customers, partially offset by a decrease in the cost per minute from vendors. Cost of phone numbers increased by $0.8 million due to an increase in phone numbers used by customers. Cost of messaging increased by $0.6 million due to an increase in number of messages used by customers and a slight increase in the cost per message. Additional increases were due to network costs and 911 services which increased $1.0 million and $0.2 million respectively. In 2017, CPaaS gross margin increased from 39% to 42% compared to 2016. Excluding depreciation and stock-based compensation of $4.6 million and $4.4 million for 2016 and 2017, respectively, CPaaS Non-GAAP gross margin would have been 43% and 46% for 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 $1.3 million decrease as a result of churn in legacy services, partially offset by a $0.7 million increase in cost of indirect revenue related to an increase in cost of carrier access revenue and toll-free number registration fees.

Operating Expenses

	Year Ended December 31,		Change	
	2016	2017		
	(In thousands)			
Research and development	$ 8,520	$ 10,789	$ 2,269	27%
Sales and marketing	9,294	11,218	1,924	21%
General and administrative	33,859	37,069	3,210	9%
Total operating expenses	$ 51,673	$ 59,076	$ 7,403	14%

In 2017, Research and development expenses increased by $2.3 million, or 27%, compared to 2016. This increase was primarily due to increased personnel costs of $2.2 million and professional fees of $0.1 million.

In 2017, sales and marketing expenses increased by $1.9 million, or 21%, compared to 2016 primarily due to an overall increase in sales personnel costs of $1.9 million.

General and administrative expenses increased by $3.2 million in 2017, or 9%, compared to 2016. This increase was due to increases of $1.2 million in facilities expenses, $1.0 million for hosted software costs, $0.4 million for professional expenses, partially offset by a $0.9 million decrease in depreciation and amortization expenses. An increase in personnel cost of $1.5 million also contributed the the overall general and administrative expenses.

Interest Expense, Net

In 2017, interest expense increased by $0.8 million compared to 2016, due to an increased balance outstanding of our credit facility that we entered into in November 2016. The balance of the credit facility was paid off in full in November 2017 with proceeds from the initial public offering.

Income Tax Expense

In 2017, income tax expense increased by $18.0 million compared to 2016. The effective tax rate for 2017 was 53.7% compared to (77.4)% in 2016. During 2016, we had a full valuation against our deferred tax assets. The valuation allowance was released in December 2016 subsequent to the Spin-Off.

On December 22, 2017, the Tax Cuts and Jobs Act (the “Act”) was enacted into law. The income tax effects of changes in tax laws are recognized in the period when enacted. Among its numerous changes to the Internal Revenue Code, the Act reduces U.S. corporate rates from 35% to 21% for periods beginning on or after January 1, 2018. We have incurred additional income tax expense of $2,073 due to the re-measurement of our deferred tax assets at the lower corporate tax rate. Additional federal and state interpretive guidance is still forthcoming that could potentially affect the measurement of these balances or give rise to new deferred tax amounts. As such, the re-measurement of our deferred tax balance is provisional pending future guidance.

As a result of changes made by the Act, starting with compensation paid in 2018, Section 162(m) will limit us from deducting compensation, including performance-based compensation, in excess of $1 million paid to anyone who serves as the Chief Executive Officer, Chief Financial Officer, or who is among the three highest compensated executive officers. The only exception to this rule is for compensation that is paid pursuant to a binding contract in effect as of November 2, 2017 that would have otherwise been deductible under the prior Section 162(m) rules. Accordingly, any compensation paid in the future pursuant to new compensation arrangements entered into after November 2, 2017, even if performance-based, will count towards the $1 million fiscal year deduction limit if paid to a covered executive. Because many different factors influence a well-rounded, comprehensive executive compensation program, some of the compensation we provide to our executive officers may not be deductible under Code Section 162(m) if our Compensation Committee believes it will contribute to the achievement of our business objectives.

Loss from Discontinued Operations, Net of Income Tax

In 2017, loss from discontinued operations decreased by $3.1 million compared to 2016. The Spin-Off of Republic took place on November 30, 2016.

Comparison of the Years Ended December 31, 2015 and 2016

Revenue

	Year ended December 31,			
	2015	2016	Change	
	(In thousands)			
CPaaS revenue	$ 101,502	$ 117,078	$ 15,576	15 %
Other revenue	36,299	35,057	(1,242)	(3)%
Total revenue	$ 137,801	$ 152,135	$ 14,334	10 %

In 2016, total revenue increased by $14.3 million, or 10%, compared to 2015. CPaaS revenue increased by $15.6 million, or 15% compared to the prior year. As a percentage of total revenue, CPaaS revenue increased from 74% to 77% year over year. The increase in CPaaS revenue was primarily attributable to an increase in the usage of all our products, particularly our voice and messaging services, and the adoption of additional services by our existing CPaaS customers. This increase was partially offset by 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, as well as in exchange for contract renewals for certain key customers. The changes in usage and price for the year ended December 31, 2016 were reflected in our dollar-based net retention rate of 111%. The increase in usage was also attributable to a 13% increase in the number of active CPaaS customer accounts, from 704 as of December 31, 2015 to 798 as of December 31, 2016. Other revenue decreased by $1.2 million, or 3%, due to declines in our legacy services of $4.2 million, partially offset by a $3.0 million increase in indirect revenue related to new messaging and toll-free number registration fees.

Cost of Revenue and Gross Margin

	Years ended December 31,		Change	
	2015	2016		
	(In thousands)			
Cost of revenue:				
CPaaS cost of revenue	$ 64,760	$ 71,218	$ 6,458	10 %
Other cost of revenue	14,482	14,000	(482)	(3)%
Total cost of revenue	$ 79,242	$ 85,218	$ 5,976	8 %
Gross profit	$ 58,559	$ 66,917	$ 8,358	14 %
Gross margin:				
CPaaS	36%	39%		
Other	60%	60%		
Total gross margin %	42%	44%		

Total gross profit increased by $8.4 million in 2016 as compared to 2015 and total gross margin increased from 42% to 44% from 2015 to 2016. CPaaS cost of revenue increased by $6.5 million, or 10%, in 2016. All CPaaS services saw an increase in cost of revenue but the overall increase was largely driven by the cost for minutes of use, which increased by $3.4 million due to growth in minutes used by customers, partially offset by a slight decrease in the cost per minute. Network costs increased by $2.0 million and cost of messaging increased by $0.5 million. Cost of phone numbers increased by $0.4 million due to an increase in phone numbers used by customers, partially offset by decreased cost per phone number. 911 costs remained constant due to an increase in 911-enabled phone numbers used by customers, partially offset by decreased cost per record. CPaaS gross margin increased from 36% in 2015 to 39% in 2016. Excluding depreciation and stock-based compensation of $5.3 million and $4.6 million for 2015 and 2016, respectively, CPaaS Non-GAAP gross margin would have been 41% and 43% for 2015 and 2016, respectively, and total Non-GAAP gross margin would have been 46% and 47% for the same periods.

Cost of Other revenue decreased by $0.5 million, or 3%, which was due to a $2.1 million decrease as a result of churn in legacy services, partially offset by a $1.6 million increase in cost of indirect revenue from 2015 to 2016 related to new required messaging and toll-free number registration fees. Total gross margin was affected by churn and a reduction in indirect margins.

Operating Expenses

	Years ended December 31,		Change	
	2015	2016		
	(In thousands)			
Research and development	$ 7,375	$ 8,520	$ 1,145	16 %
Sales and marketing	8,620	9,294	674	8 %
General and administrative	34,602	33,859	(743)	(2)%
Total operating expenses	$ 50,597	$ 51,673	$ 1,076	2 %

In 2016, R&D expenses increased by $1.1 million, or 16%, compared to 2015. This increase was due primarily to increases in hosting software costs and increased headcount.

In 2016, sales and marketing expenses increased by $0.7 million, or 8%, compared to 2015 due to an overall increase in sales headcount.

General and administrative expenses decreased by $0.7 million in 2016, or 2%, compared to 2015 mostly due to a decrease in stock-based compensation expenses. This decrease was partially offset by increases in headcount, increases from gains on fixed asset disposals, increases in consulting fees and increased rent.

Interest Expense, Net

In 2016, interest expense increased by $0.3 million compared to 2015 due to increased borrowings on our credit facility that we entered into in November 2016.

Income Tax Expense

In 2016, income tax expense decreased by $11.5 million compared to 2015 primarily due to the $14.1 million release of the valuation allowance in 2016 subsequent to the Republic Wireless Spin-Off. The effective tax rate for 2016 was (77.4)% compared to 5.5% for 2015.

Loss from Discontinued Operations, Net of Income Tax

In 2016, loss from discontinued operations decreased by $10.6 million compared to 2015 due to the Republic Wireless Spin-Off in December 2016.

Quarterly Results of Operations

The following tables set forth our unaudited quarterly statements of operations data for each of the eight quarters ended December 31, 2017. The information for each quarter has been prepared on a basis consistent with our audited consolidated financial statements included in this Annual Report on Form 10-K, and reflect, in the opinion of management, all adjustments of a normal, recurring nature that are necessary for a fair presentation of the financial information contained in those statements. Our historical results are not necessarily indicative of the results that may be expected in the future. The following quarterly financial data should be read in conjunction with our audited consolidated financial statements included in this Annual Report on Form 10-K.

	Three Months Ended							
	March 31, 2016	June 30, 2016	September 30, 2016	December 31, 2016	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017
Revenue:								
CPaaS revenue	$ 27,735	$ 28,916	$ 30,249	$ 30,178	$ 31,647	$ 31,547	$ 33,397	$ 34,981
Other revenue	9,204	8,914	8,354	8,585	7,978	7,979	7,941	7,485
Total revenue	36,939	37,830	38,603	38,763	39,625	39,526	41,338	42,466
Cost of revenue:								
CPaaS cost of revenue	17,220	18,159	18,197	17,642	18,228	18,919	19,247	19,465
Other cost of revenue	3,792	3,491	3,317	3,400	3,338	3,375	3,324	3,366
Total cost of revenue	21,012	21,650	21,514	21,042	21,566	22,294	22,571	22,831
Gross profit	15,927	16,180	17,089	17,721	18,059	17,232	18,767	19,635
Operating expenses:								
Research and development	1,854	1,913	2,390	2,363	2,682	2,409	2,771	2,927
Sales and marketing	2,189	2,269	2,418	2,418	2,558	2,413	3,128	3,119
General and administrative	7,455	8,217	7,898	10,289	7,637	8,257	9,797	11,378
Total operating expenses	11,498	12,399	12,706	15,070	12,877	13,079	15,696	17,424
Operating income	4,429	3,781	4,383	2,651	5,182	4,153	3,071	2,211
Other (expense) income:								
Interest expense, net	(184)	(185)	(229)	(310)	(421)	(438)	(402)	(467)
Change in fair value of stockholders' anti-dilutive arrangement	—	—	—	—	—	(553)	(136)	689
Total other (expense) income	(184)	(185)	(229)	(310)	(421)	(991)	(538)	222
Income from continuing operations before income taxes	4,245	3,596	4,154	2,341	4,761	3,162	2,533	2,433
Income tax (provision) benefit	(182)	(87)	(137)	11,500	(1,772)	(1,215)	(899)	(3,032)
Income (loss) from continuing operations	4,063	3,509	4,017	13,841	2,989	1,947	1,634	(599)
(Loss) income from discontinued operations, net of income taxes	(1,028)	(1,983)	(728)	667	—	—	—	—
Net income (loss)	$ 3,035	$ 1,526	$ 3,289	$ 14,508	$ 2,989	$ 1,947	$ 1,634	$ (599)
Total comprehensive income (loss), net of income tax	$ 3,035	$ 1,526	$ 3,289	$ 14,508	$ 2,989	$ 1,947	$ 1,634	$ (599)
Net income (loss) per share:								
Basic	$ 0.23	$ 0.11	$ 0.25	$ 1.07	$ 0.22	$ 0.14	$ 0.12	$ (0.04)
Diluted	$ 0.21	$ 0.10	$ 0.22	$ 0.97	$ 0.20	$ 0.13	$ 0.11	$ (0.04)

Liquidity and Capital Resources

To date, our principal sources of liquidity have been the proceeds of $74.4 million, net of underwriting discounts and commissions, from our initial public offering in November 2017, in addition to free cash flow driven by payments received from customers using our services, as well as borrowings under our senior secured credit facility. We believe that our cash and cash equivalents balances, our credit facility and the cash flows generated by our operations will be sufficient to satisfy our anticipated cash needs for working capital and capital expenditures for at least the next 12 months.

Statement of Cash Flows

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

	Year Ended December 31,		
	2015	2016	2017
		(In thousands)	
Net cash provided by operating activities from continuing operations	$ 18,651	$ 16,942	$ 14,623
Net cash used in investing activities from continuing operations	(5,102)	(6,061)	(7,963)
Net cash provided by (used in) financing activities from continuing operations	11,038	(1,053)	24,179
Net increase in cash and cash equivalents from continuing operations	$ 24,587	$ 9,828	$ 30,839

Cash Flows from Operating Activities

In 2017, cash provided by operating activities from continuing operations was $14.6 million, which primarily consisted of net income of $6.0 million, depreciation and amortization of $5.7 million, amortization of debt issuance costs of $0.4 million, stock-based compensation expenses of $1.8 million, deferred taxes of $6.2 million and loss on disposal of property and equipment of $0.1 million partially offset by a decrease in working capital of $5.5 million. Working capital consisted primarily of increases in accounts receivable of $4.4 million, prepaid expenses of $1.6 million, deferred costs of $0.9 million and $2.4 million in accounts payable offset by decreases in accrued expenses of $1.3 million and deferred revenue of $2.6 million.

In 2016, cash provided by operating activities from continuing operations was $16.9 million, which primarily consisted of net income from continuing operations of $22.4 million that includes $3.1 million net loss by discontinued operations, depreciation and amortization of $6.1 million, amortization of debt issuance costs of $0.1 million, $1.4 million of stock-based compensation expenses and impairment of intangible assets of $0.7 million partially offset by a decrease in deferred taxes of $11.1 million and working capital of $5.7 million. Working capital consisted primarily of increases in accounts receivable of $4.0 million, prepaid expenses of $0.8 million, deferred costs of $1.0 million and accrued expenses of $0.6 million, offset by increases in accounts payable of $0.2 million and deferred revenue of $0.5 million.

In 2015, cash provided by operating activities from continuing operations was $18.7 million due to net loss of $6.7 million that includes $13.7 million net loss by discontinued operations, depreciation and amortization of $7.1 million, $3.5 million of stock-based compensation expenses, loss on disposal of property and equipment of $0.4 million, deferred taxes of $0.3 million and an increase in working capital of $0.4 million. Working capital consisted of a decrease in deferred costs of $2.9 million, an increase in accounts payable of $1.0 million and a decrease in accrued expenses and other liabilities of $2.5 million, and increases in prepaid expenses of $0.6 million and accounts receivable of $0.5 million.

As of December 31, 2017, we had 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 $10.3 million and $9.6 million for the years ended December 31, 2016 and 2017, respectively. We recognize revenue for this customer only to the extent to which payments have been made. These outstanding amounts represent disputed and unpaid billings and were fully reserved within our allowance for doubtful accounts. We had not recognized revenue related to the outstanding and disputed balances. Only if and when we reached an agreement with Verizon to settle the outstanding and disputed billings which resulted in a payment for any or all amounts outstanding, would we recognize any revenue. Recognition of revenue as a result of a settlement of disputed balances would result in an increase in cash flows from operating activities for the relevant period. On January 29, 2018, we entered into a settlement with Verizon (for further information see Note 17, "Subsequent Events," to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K).

Cash Flows from Investing Activities

In 2017, cash used in investing activities from continuing operations was $8.0 million from the purchase of property, plant and equipment and capitalized internally developed software costs.

In 2016, cash used in investing activities from continuing operations was $6.1 million used to purchase property, plant and equipment and capitalized internally developed software costs.

In 2015, cash used in investing activities from continuing operations was $5.1 million used to purchase property, plant and equipment and capitalized internally developed software costs.

Cash Flows from Financing Activities

In 2017, cash provided by financing activities from continuing operations was $24.2 million consisting primarily of $69.0 million from the net proceeds from the initial public offering, $0.2 million in proceeds from the issuances of common stock as a result of options exercised, and $0.1 million in proceeds from exercise of warrants, offset by net repayments of $5.0 million on our line of credit, $0.1 million in payments on capital leases, $40.0 million in payments on our term loan.

In 2016, cash used in financing activities from continuing operations was $1.1 million consisting primarily of $30.0 million in cash distributions to Republic Wireless, $0.6 million in payments of debt issuance costs, net repayments of $12.0 million on our line of credit, $0.1 million in payments on capital leases, offset by $40.0 million of borrowing on our term loan, $1.0 million in proceeds from the issuances of common stock as a result of options exercised, and $0.2 million in proceeds from exercise of warrants.

In 2015, cash provided by financing activities from continuing operations was $11.0 million due to the net $11.0 million in borrowings under our line of credit.

Debt

On November 4, 2016, we entered into a Credit and Security Agreement with a syndicate of four banks. The agreement includes a $40.0 million term loan and a $25.0 million revolving loan, which includes a swing line of up to $1.0 million and limits letters of credit commitments to a maximum of $2.5 million. Substantially all of our assets are pledged as security to the Credit and Security Agreement. The term of the Credit and Security Agreement is five years and matures on November 3, 2021. The interest rate used for the debt is based on our election to either apply the Federal Funds Effective Rate or LIBOR plus a stated margin, as defined in the Credit and Security Agreement. This agreement requires us to meet a certain leverage ratio and minimum debt service coverage ratio each quarter on a trailing 12-month basis.

On November 14, 2017, we paid in full the term loan with proceeds from our initial public offering. The revolving loan was paid in full on August 31, 2017. There is no loan balance outstanding as of December 31, 2017. We were in compliance with all financial covenants as of December 31, 2017. The availability under the Credit and Security Agreement was $25.0 million as of December 31, 2017.

Contractual Obligations and Other Commitments

The following table summarizes our noncancellable contractual obligations as of December 31, 2017:

	Total	Less Than 1 Year	1 to 2 Years	3 to 5 Years	More than 5 years
As of December 31, 2017:					
Operating leases[1]	$ 17,060	$ 3,631	$ 7,538	$ 5,890	$ —
Capital leases	92	92	—	—	—
Purchase obligations[2]	5,249	4,144	1,083	23	—
Total	$ 22,401	$ 7,867	$ 8,621	$ 5,913	$ —

(1) Operating leases represent total future minimum rent payments under non-cancellable operating lease agreements.
(2) Purchase obligations represent total future minimum payments under contracts to various service providers. Purchase obligations exclude agreements that are cancellable without penalty.

Off-Balance Sheet Arrangements

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

Critical Accounting Policies and Significant Judgments and Estimates

Our 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 the accounting policies discussed below are critical to the process of making significant judgments and estimates in the preparation of our financial statements, and to understanding our historical and future performance.

Revenue Recognition and Deferred Revenue

We generate revenue primarily from the sale of communication services to enterprise customers. We recognize revenue when all of the following criteria are met (i) persuasive evidence of an arrangement exists; (ii) delivery has occurred; (iii) the fee is fixed or determinable; and (iv) collection is reasonably assured. If collection is not reasonably assured, we defer revenue recognition until collectability becomes reasonably assured. Our arrangements do not contain general rights of return. We generally enter into arrangements with customers that are typically 2 to 3 years in length. Incremental direct costs incurred related to the acquisition of a customer contract are expensed as incurred.

Stock-Based Compensation

Stock options awarded to employees, directors and non-employee third parties are measured at fair value on each grant date. Options subject to service-based vesting generally vest annually over a four-year period. The determination of the fair value of stock-based compensation arrangements on the grant date requires judgment. We recognize stock-based compensation expense using the Black-Scholes option-pricing model, net of estimated forfeitures, in order to determine the fair value of stock options, the output of which is affected by a number of variables. These variables include the fair value of our common stock, expected term of the options, expected stock price volatility, risk-free interest rate and expected dividends, which are estimated as follows:

- *Fair value of our common stock.* The fair value of the shares of our common stock underlying stock options had historically been established by our board of directors with the assistance of an independent third-party valuation firm. Because there had been no public market for our common stock, our board of directors had relied on this independent valuation and other factors to establish the fair value of our common stock at the time of grant of the option. The determination of the fair value of our common stock is discussed further below.
- *Expected term.* The expected term was estimated using the simplified method allowed under SEC guidance as we do not have sufficient historical data to use any other method to estimate the expected term.
- *Expected volatility.* The expected volatility is derived from an average of the historical volatilities of the common stock of several entities with characteristics similar to ours, such as the size, and operational and economic similarities to our principle business operations. We use this method because we have limited information on the volatility of our common stock.
- *Risk-free interest rate.* The risk-free interest rate is based on the yields of U.S. Treasury securities with maturities similar to the expected term of the options for each option group.
- *Expected dividends.* The expected dividend is assumed to be zero as we have never paid dividends and have no current plans to pay any dividends on our common stock.

In addition to the assumptions used in the Black-Scholes option-pricing model, we must also determine a forfeiture rate to calculate the stock-based compensation for awards. Through December 31, 2017, we recognized compensation for only the portion of options expected to vest using an estimated forfeiture rate that was derived from historical employee termination behavior.

Determination of the Fair Value of Common Stock

Prior to our initial public offering, we had periodically determined for financial reporting purposes the estimated per share fair value of our common stock at various dates using contemporaneous valuations performed in accordance with the guidance outlined in the American Institute of Certified Public Accountants Practice Aid, “Valuation of Privately-Held Company Equity Securities Issued as Compensation.” In conducting the contemporaneous valuations, we considered all objective and subjective factors that we believed to be relevant for each valuation conducted, including the following:

- contemporaneous unrelated third-party valuations of our common stock;
- the rights, preferences and privileges of our redeemable convertible preferred stock relative to those of our common stock;
- our results of operations, financial position and capital resources;
- current business conditions and projections;

- the lack of marketability of our common stock;
- the hiring of key personnel and the experience of our management;
- the introduction of new products;
- the risk inherent in the development and expansion of our products;
- the fact that the option grants involve illiquid securities in a private company;
- the likelihood of achieving a liquidity event, such as an initial public offering or a sale of our company, given the prevailing market conditions;
- industry trends and competitive environment; and
- overall economic indicators, including gross domestic product, employment, inflation and interest rates.

In valuing our common stock, we had historically determined the equity value of our Company using both the income and the market approach valuation methods:

- The income approach estimates value based on the expectation of future cash flows that a company will generate. These future cash flows are discounted to their present values using a discount rate derived from an analysis of the cost of capital of comparable publicly traded companies in our industry as of each valuation date and is adjusted to reflect the risks inherent in our cash flows.
- The market approach estimates value based on a comparison of the subject company to comparable public companies in a similar line of business. From the comparable companies, a representative market value multiple is determined and then applied to the subject. The estimated value for our common stock is then discounted by a non-marketability factor (discount for lack of marketability) due to the fact that stockholders of private companies do not have access to trading markets similar to those enjoyed by stockholders of public companies, which affects liquidity.

As a result of the determination to pursue strategic financing through an initial public offering, in June 2017, we began using the Probability-Weighted Expected Return Method (“PWERM”) in order to estimate the value of our common stock based on various outcomes. Using the PWERM, the value of our common stock was estimated based upon a probability-weighted analysis of varying values for our common stock assuming possible future events for the company, including an initial public offering and a stay private company scenario in which operations continued as a privately held company. Application of this approach involved the use of estimates, judgment and assumptions that are highly complex and subjective, such as those regarding our expected future revenue, expenses and future cash flows, discount rates, market multiples, the selection of comparable companies and the probability of possible future events. Changes in any or all of these estimates and assumptions or the relationships between those assumptions impact our valuations as of each valuation date and may have a material impact on the valuation of our common stock.

The dates of our contemporaneous valuations have not always coincided with the dates of our stock-based compensation grants. In such instances, management’s estimates have been based on the most recent contemporaneous valuation of our shares of common stock and our assessment of additional objective and subjective factors we believed were relevant as of the grant date. The additional factors considered when determining any changes in fair value between the most recent contemporaneous valuation and the grant dates included our stage of development, our operating and financial performance, current business conditions and the market performance of comparable publicly traded companies.

Following our initial public offering, it was no longer necessary to determine the fair value of our Class A common stock using these valuation techniques as shares of our Class A common stock are traded on the the NASDAQ Global Select Market.

Goodwill and Intangible Assets

Goodwill

Goodwill represents the excess of the aggregate fair value of consideration transferred in a business combination, over the fair value of assets acquired, net of liabilities assumed. Goodwill is not amortized, but is subject to an annual impairment test. We test goodwill for impairment annually on December 31 of each calendar year or more frequently if events or changes in business circumstances indicate the asset might be impaired. Goodwill is tested for impairment at the reporting unit level. In evaluating the recoverability of goodwill, we perform a qualitative analysis to determine whether events and circumstances exist that indicate that it is more likely than not that goodwill is impaired. The qualitative factors we consider include but are not limited to, macroeconomic conditions, industry and market conditions, company-specific events and changes in circumstances. We completed our annual goodwill impairment analysis in each of the years ended December 31, 2015, 2016 and 2017 and no impairment charges were recorded. As of December 31, 2017 goodwill was $6.9 million.

Long-Lived Assets

Long-lived assets, including intangible assets with definite lives, are amortized over their estimated useful lives and are reviewed for impairment if indicators of impairment arise.

We evaluate the recoverability of our long-lived assets for impairment whenever events or circumstances indicate that the carrying amount of the assets may not be recoverable. Recoverability of long-lived assets are measured by comparison of the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset. As of December 31, 2017, intangible assets, net of accumulated amortization, were $7.6 million, which consists primarily of client relationships and client contracts. As part of our annual evaluation of intangibles, we re-evaluated our marketing and trade name assets and concluded that there was no further benefit to a trade name acquired in the Dash acquisition. As a result, we impaired the intangible asset and recognized a loss of $0.7 million in 2016. No indicators of impairment were identified for the years ended December 31, 2015 and 2017.

Internal-Use Software Development Costs

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

Capitalized costs of platform and other software applications are included in property and equipment. These costs are amortized over the estimated useful life of the software on a straight-line basis over three years, which is recorded in cost of revenue in the statement of operations. We evaluate the useful life of these assets on an annual basis and test for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that are included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We reduce the measurement of a deferred tax asset, if necessary, by a valuation allowance if it is more likely than not that we will not realize some or all the deferred tax asset. Quarterly, we review the deferred tax assets for recoverability based on historical taxable income, projected future taxable income, the expected timing of the reversals of existing temporary differences, the implementation of prudent and feasible tax planning strategies, and results of recent operations. The evaluation of the recoverability of deferred tax assets requires judgment in assessing future profitability. Should there be a change in the ability to recover deferred tax assets, our income tax provision would increase or decrease in the period in which the assessment is changed.

We account for uncertain tax positions by recognizing the financial statement effects of a tax position only when, based upon technical merits, it is more likely than not that the position will be sustained upon examination. The tax benefit recognized is measured as the largest amount of benefit determined on a cumulative probability basis that we believe is more likely than not to be realized upon ultimate settlement of the position. We recognize potential accrued interest and penalties associated with unrecognized tax positions in income tax expense.

Other Contingencies

We are subject to legal proceedings and litigation arising in the ordinary course of business. Periodically, we evaluate the status of each legal matter and assess our potential financial exposure. If the potential loss from any legal proceeding or litigation is considered probable and the amount can be reasonably estimated, we accrue a liability for the estimated loss. Significant judgment is required to determine the probability of a loss and whether the amount of the loss is reasonably estimable. The outcome of any proceeding is not determinable in advance. As a result, the assessment of a potential liability and the amount of any accruals recorded are based only on the information available to us at the time. As additional information becomes available, we reassess the potential liability related to the legal proceeding or litigation, and may revise our estimates. Any revisions could have a material effect on our results of operations.

We conduct operations in many tax jurisdictions throughout the United States. In many of these jurisdictions, non-income-based taxes and fees, such as sales and use taxes, telecommunications taxes, and regulatory fees including those associated with (or potentially associated with) VoIP telephony services or 911 services, are assessed or may be assessed on our operations. We are subject to indirect taxes, and may be subject to certain other taxes and surcharges in some of these jurisdictions. We generally bill and collect from our customers these taxes and surcharges. We record a liability for tax collected from customers but not yet paid to the appropriate jurisdiction. In addition, we record a provision for non-income based taxes and fees in jurisdictions where it is both probable that liability has been incurred and the amount of the exposure can be reasonably estimated. As a result, we have recorded a liability of $4.6 million, $2.8 million and $3.0 million as of December 31, 2015, 2016 and 2017, respectively. These estimates are based on several key assumptions, including the taxability of our services, the jurisdictions in which we believe we have nexus and the sourcing of revenue to those jurisdictions. In the event these jurisdictions challenge our assumptions and analysis, our actual exposure could differ materially from our current estimates.

Recently Issued Accounting Guidance

See Note 2, "Summary of Significant Accounting Policies," to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K, 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 7A.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 $37.6 million as of December 31, 2017, which were held for working capital purposes. Our cash and cash equivalents are comprised primarily of interest bearing checking accounts and money market 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.

Our debt is comprised of a revolving line of credit account, which had no amount outstanding as of December 31, 2017. The revolving line of credit has an interest rate based on the 1-month LIBOR rate plus 225 basis points as of December 31, 2017. 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 less than $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 8. Financial Statements and Supplementary Data

BANDWIDTH INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Bandwidth Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Bandwidth Inc. (the Company) as of December 31, 2017 and 2016, the related consolidated statements of operations and comprehensive (loss) income, changes in redeemable convertible preferred stock and stockholders' (deficit) equity and cash flows for each of the three years in the period ended December 31, 2017, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2017 and 2016, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2017, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company’s auditor since 2012.

Raleigh, North Carolina
February 26, 2018

BANDWIDTH INC.

CONSOLIDATED BALANCE SHEETS
(In Thousands, Except Share and per Share Amounts)

	As of December 31,	
	2016	**2017**
Assets		
Current assets:		
Cash and cash equivalents	$ 6,788	$ 37,627
Accounts receivable, net of allowance for doubtful accounts	16,838	21,225
Prepaid expenses and other current assets	2,318	3,767
Deferred costs	2,099	2,633
Total current assets	28,043	65,252
Property and equipment, net	11,180	14,946
Intangible assets, net	8,482	7,643
Deferred costs, non-current	1,696	2,068
Other long-term assets	1,011	1,192
Goodwill	6,867	6,867
Deferred tax asset	12,694	6,526
Total assets	$ 69,973	$ 104,494
Liabilities, redeemable convertible preferred stock and stockholders' (deficit) equity		
Current liabilities:		
Accounts payable	$ 4,688	$ 3,025
Accrued expenses and other current liabilities	14,649	15,633
Current portion of deferred revenue and advanced billings	4,032	5,768
Line of credit, current portion	5,000	—
Current portion of long-term debt and capital lease obligations	2,101	92
Total current liabilities	30,470	24,518
Other liabilities	609	716
Deferred revenue, net of current portion	1,712	2,549
Long-term debt and capital lease obligations, net of current portion	37,738	—
Total liabilities	70,529	27,783

BANDWIDTH INC.

CONSOLIDATED BALANCE SHEETS
(In Thousands, Except Share and per Share Amounts)

	As of December 31,	
	2016	**2017**
Redeemable convertible preferred stock:		
Series A redeemable convertible preferred stock; $0.001 par value; 1,200,000 shares authorized; 710,000 and 0 shares issued and outstanding at December 31, 2016 and 2017, respectively	21,818	—
Commitments and contingencies		
Stockholders' (deficit) equity:		
Class A voting common stock; $0.001 par value; 0 and 100,000,000 shares authorized as of December 31, 2016 and 2017, respectively; 0 and 4,197,831 shares issued and outstanding as of December 31, 2016 and 2017, respectively	—	4
Class B voting common stock, $0.001 par value; 0 and 20,000,000 shares authorized as of December 31, 2016 and 2017, respectively; 0 and 13,440,725 shares issued and outstanding as of December 31, 2016 and 2017, respectively	—	13
Old Class A voting common stock; $0.001 par value; 20,000,000 and 0 shares authorized as of December 31, 2016 and 2017, respectively; 11,779,975 and 0 shares issued and outstanding as of December 31, 2016 and 2017, respectively	12	—
Old Class B non-voting common stock, $0.001 par value; 3,341,275 and 0 shares authorized as of December 31, 2016 and 2017, respectively; 18,590 and 0 shares issued and outstanding as of December 31, 2016 and 2017, respectively	—	—
Preferred stock; $0.001 par value; 0 and 10,000,000 shares authorized as of December 31, 2016 and 2017, respectively; 0 shares issued and outstanding as of December 31, 2016 and 2017	—	—
Additional paid-in capital	9,356	102,465
Accumulated deficit	(31,742)	(25,771)
Total stockholders' (deficit) equity	(22,374)	76,711
Total liabilities, redeemable convertible preferred stock and stockholders' (deficit) equity	$ 69,973	$ 104,494

See accompanying notes.

BANDWIDTH INC.

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

	Year Ended December 31,		
	2015	2016	2017
Revenue:			
CPaaS revenue	$ 101,502	$ 117,078	$ 131,572
Other revenue	36,299	35,057	31,383
Total revenue	137,801	152,135	162,955
Cost of revenue:			
CPaaS cost of revenue	64,760	71,218	75,859
Other cost of revenue	14,482	14,000	13,403
Total cost of revenue	79,242	85,218	89,262
Gross profit	58,559	66,917	73,693
Operating expenses:			
Research and development	7,375	8,520	10,789
Sales and marketing	8,620	9,294	11,218
General and administrative	34,602	33,859	37,069
Total operating expenses	50,597	51,673	59,076
Operating income	7,962	15,244	14,617
Other expense:			
Interest expense, net	(589)	(908)	(1,728)
Total other expense	(589)	(908)	(1,728)
Income from continuing operations before income taxes	7,373	14,336	12,889
Income tax (provision) benefit	(408)	11,094	(6,918)
Income from continuing operations	6,965	25,430	5,971
Loss from discontinued operations, net of income taxes	(13,665)	(3,072)	—
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971
Total comprehensive (loss) income	$ (6,700)	$ 22,358	$ 5,971
Earnings (loss) per share:			
Income from continuing operations	$ 6,965	$ 25,430	$ 5,971
Less: income allocated to participating securities	931	3,355	644
Income from continuing operations attributable to common stockholders	$ 6,034	$ 22,075	$ 5,327
Income (loss) from continuing operations per share:			
Basic	$ 0.52	$ 1.89	$ 0.42
Diluted	$ 0.48	$ 1.72	$ 0.37
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971
Less: (loss) income allocated to participating securities	(896)	2,950	644
Net (loss) income attributable to common stockholders	$ (5,804)	$ 19,408	$ 5,327
Net (loss) income per share:			
Basic	$ (0.50)	$ 1.66	$ 0.42
Diluted	$ (0.47)	$ 1.51	$ 0.37
Weighted average number of common shares outstanding:			
Basic	11,497,727	11,678,568	12,590,221
Diluted	12,456,540	12,870,632	14,543,170

See accompanying notes.

BANDWIDTH INC.

Consolidated Statements of Changes in Redeemable Convertible Preferred Stock and Stockholders' (Deficit) Equity

(In Thousands Except Share Amounts)

	Series A redeemable convertible preferred stock		Class A voting common Stock		Class B voting common Stock		Old Class A voting common Stock		Old Class B non-voting common Stock		Additional paid-in capital	Accumulated deficit	Total stockholders' (deficit) equity
	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at December 31, 2014	710,000	$ 21,818	—	$ —	—	$ —	11,455,615	$ 12	14,060	$ —	$ 31,060	$ (47,820)	$ (16,748)
Issuance of Old Class A voting common stock	—	—	—	—	—	—	69,405	—	4,530	—	113	—	113
Issuance of Old Class B non-voting common stock	—	—	—	—	—	—	—	—	—	—	48	—	48
Exercise of warrants to purchase common stock	—	—	—	—	—	—	17,138	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	4,213	—	4,213
Net loss	—	—	—	—	—	—	—	—	—	—	—	(6,700)	(6,700)
Balance at December 31, 2015	710,000	21,818	—	—	—	—	11,542,158	12	18,590	—	35,434	(54,520)	(19,074)
Issuance of Old Class A voting common stock	—	—	—	—	—	—	218,345	—	—	—	1,111	—	1,111
Exercise of warrants to purchase common stock	—	—	—	—	—	—	19,472	—	—	—	150	—	150
Distribution of Republic	—	—	—	—	—	—	—	—	—	—	(28,899)	—	(28,899)
Shareholders' anti-dilutive arrangement	—	—	—	—	—	—	—	—	—	—	(324)	—	(324)
Cumulative effect of change in accounting principle	—	—	—	—	—	—	—	—	—	—	—	420	420
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	1,884	—	1,884
Net income	—	—	—	—	—	—	—	—	—	—	—	22,358	22,358
Balance at December 31, 2016	710,000	21,818	—	—	—	—	11,779,975	12	18,590	—	9,356	(31,742)	(22,374)
Issuance of Old Class A voting common stock	—	—	—	—	—	—	31,510	—	—		94	—	94
Issuance of Old Class B non-voting common stock	—	—	—	—	—	—	—	—	16,250	—	109	—	109
Exercise of warrants to purchase common stock	—	—	—	—	17,260	—	—	—	—	—	91	—	91
Stock-based compensation	—	—	—	—	—	—	—	—	—	—	1,803	—	1,803
Purchase of common stock	—	—	—	—	(29)	—	—	—	—	—	—	—	—
Conversion of Series A preferred stock to Old Class A voting common stock	(710,000)	(21,818)	—	—	—	—	1,775,000	1	—	—	21,817	—	21,818
Conversion of Old Class A voting common stock to Class B voting common stock	—	—	—	—	13,586,485	13	(13,586,485)	(13)	—	—	—	—	—
Conversion of Old Class B non-voting common stock to Class A voting common stock	—	—	34,840	—	—	—	—	—	(34,840)	—	—	—	—
Issuance of common stock in connection with initial public offering, net of underwriting discounts	—	—	4,000,000	4	—	—	—	—	—	—	74,396	—	74,400
Costs in connection with initial public offering	—	—	—	—	—	—	—	—	—	—	(5,385)	—	(5,385)
Conversion of Class B voting common stock to Class A voting common stock	—	—	162,991	—	(162,991)	—	—	—	—	—	—	—	—
Termination of Shareholders' anti-dilutive arrangement	—	—	—	—	—	—	—	—	—	—	184	—	184
Net income	—	—	—	—	—	—	—	—	—	—	—	5,971	5,971
Balance at December 31, 2017	—	$ —	4,197,831	$ 4	13,440,725	$ 13	—	$ —	—	$ —	$102,465	$ (25,771)	$ 76,711

See accompanying notes.

BANDWIDTH INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands)

	Year Ended December 31,		
	2015	**2016**	**2017**
Operating activities			
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971
Loss from discontinued operations, net of income taxes	13,665	3,072	—
Adjustments to reconcile net (loss) income to net cash provided by (used in) operating activities:			
Depreciation and amortization	7,075	6,142	5,712
Amortization of debt issuance costs	49	52	376
Stock-based compensation	3,493	1,370	1,803
Deferred taxes	304	(11,086)	6,168
Loss on disposal of property and equipment	382	19	91
Impairment of intangible asset	—	695	—
Changes in operating assets and liabilities:			
Accounts receivable	(533)	(4,043)	(4,387)
Prepaid expenses and other assets	(570)	(848)	(1,622)
Deferred costs	2,877	(975)	(906)
Accounts payable	1,041	243	(2,429)
Accrued expenses and other liabilities	(2,540)	(567)	1,273
Deferred revenue and advanced billings	108	510	2,573
Net cash provided by operating activities from continuing operations	18,651	16,942	14,623
Net cash used in operating activities from discontinued operations	(22,460)	(11,788)	—
Net cash (used in) provided by operating activities	(3,809)	5,154	14,623
Investing activities			
Purchase of property and equipment	(2,091)	(3,831)	(5,021)
Capitalized software development costs	(3,011)	(2,230)	(2,942)
Net cash used in investing activities from continuing operations	(5,102)	(6,061)	(7,963)
Net cash used in investing activities from discontinued operations	(860)	(1,311)	—
Net cash used in investing activities	(5,962)	(7,372)	(7,963)
Financing activities			
Borrowings on line of credit	43,500	56,950	4,000
Repayments on line of credit	(32,500)	(68,950)	(9,000)
Payments on capital leases	(155)	(102)	(73)
Borrowings on term loan	—	40,000	—
Repayments on term loan	—	—	(40,000)
Payment of debt issuance costs	(52)	(554)	(25)
Payment of costs related to the initial public offering	—	—	(5,385)
Proceeds from the initial public offering, net of underwriting discounts	—	—	74,400
Proceeds from issuances of common stock	129	974	174
Proceeds from exercises of warrants	—	150	91
Cash distribution to Republic	—	(30,000)	—
Decrease (increase) in restricted cash	116	479	(3)
Net cash provided by (used in) financing activities from continuing operations	11,038	(1,053)	24,179
Net increase (decrease) in cash and cash equivalents	1,267	(3,271)	30,839
Cash and cash equivalents, beginning of period	8,792	10,059	6,788
Cash and cash equivalents, end of period	$ 10,059	$ 6,788	$ 37,627
Supplemental disclosure of cash flow information			
Cash paid during the year for interest	$ 1,103	$ 1,314	$ 1,535
Cash paid for taxes	$ 73	$ 6	$ 855
Supplemental disclosure of noncash financing activities			
Non-cash distribution of net liabilities to Spin-Off	$ —	$ 1,101	$ —
Acquisition of equipment through capital leases	$ 32	$ 132	$ —

See accompanying notes.

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.

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, SMS registration 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 IPO, 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 voting common stock (“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 voting common stock ("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 Class B common stock and Class A common stock, respectively. In addition, immediately prior to pricing of the IPO, all shares of the Company’s then-outstanding Series A redeemable convertible preferred stock were converted into Old Class A common stock, which then converted into Class B common stock. In connection with the Company’s IPO, 4,000,000 shares of the Company's 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 of $5,600. On November 14, 2017, the outstanding term loan of $38,500 was paid in full with proceeds from the IPO.

2. Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements and accompanying notes were prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). The Company had no components of other comprehensive income (loss) during any of the periods presented, as such, a consolidated statement of comprehensive income (loss) is not presented.

Reclassification

The Company reclassified certain prior year amounts to conform to the current year presentation. These reclassifications had no impact on the previously reported total assets, liabilities, stockholder's deficit or net income.

Principles of Consolidation

The 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 U.S. 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 that 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 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.

Revenue Recognition

Revenue consists primarily of the sale of communications services offered through API software solutions to large enterprise, as well as small and medium-sized business, customers and are generally derived from usage and monthly service fees for both the CPaaS and Other segments. Usage revenue includes voice communication (primarily driven by inbound minutes, outbound minutes, toll-free minutes) and messaging communication (driven by the number of messages) that traverse the platform and network. Revenue for these services is recognized in the period the usage occurs. Monthly service fees include the provision and management of phone numbers and emergency services access, which is recognized as the service is provided. In addition, the Company earns Carrier Access Billings ("CABS") revenue by allowing interconnected telecommunication carriers to pass traffic through its network and, as such the Company is the principal in delivering communication services to such carriers. Due to the lack of timeliness of payments and the frequency of carrier disputes, the Company recognizes revenue related to this service only when collectability is probable.

When required as part of providing service, revenues and associated expenses related to nonrefundable, upfront service activation and setup fees are deferred and recognized over the longer of the associated service contract period or estimated customer life.

Revenue recognition commences when all of the following criteria are met (i) persuasive evidence of an arrangement exists; (ii) delivery has occurred; (iii) the fee is fixed or determinable; and (iv) collection is probable. Customers generally enter into arrangements that are typically two to three years in length.

Cost of Revenue

CPaaS cost of revenue consists primarily of fees paid to other network service providers from whom the Company buys services such as minutes of use, phone numbers, messages, porting of customer numbers, and network circuits. Cost of revenue also contains costs related to the support of the network, web services and 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 the communications network, customer support, as well as, third party support agreements, and depreciation are also recorded as cost of revenue.

Other cost of revenue consists of amortization of capital software development costs related to platform applications supporting non-CPaaS services including circuit costs paid to third party providers, internet connectivity expenses, minutes of use, contractors, regulatory fees and surcharges, depreciation, and software and hardware maintenance fees.

Operating Expenses

Research and Development

Research and development expenses consist primarily of personnel costs (including non-cash stock-based compensation expenses), outsourced software development and engineering services and cloud infrastructure fees for staging and development outsourced engineering services.

Sales and Marketing

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

General and Administrative

General and administrative expenses consist primarily of personnel costs for support personnel and executives in accounting, finance, legal, information services, human resources and administrative functions. General and administrative expenses also include costs related to product management and reporting, data services, customer billing and collection functions, and other professional services fees, credit card processing fees, rent associated with the Company’s headquarters in Raleigh, North Carolina, depreciation and amortization.

Cash and Cash Equivalents

The Company considers all highly liquid investments with an original or remaining maturity of three months or less at the date of purchase, as well as overnight repurchase investments, to be cash equivalents.

Restricted Cash

The Company classifies any cash and cash equivalents that are currently restricted from use as restricted cash. As of December 31, 2016 and 2017, restricted cash is used to secure letters of credit issued in order to operate the CLEC, for Automated Clearing House availability, customer deposits and for credit card security. As of December 31, 2016 and 2017, restricted cash was $240 and $243, respectively. The Company has classified this asset as a long-term asset in order to match the expected period of restriction and is included in Other long-term assets in the consolidated balance sheets.

Accounts Receivable and Allowance for Doubtful Accounts

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 customer accounts. 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 $32,463 for uncollectible accounts and customer balances that are disputed were required as of December 31, 2016 and 2017, respectively. The allowance for doubtful accounts primarily relates to billings for CABS services where collectability was deemed not probable. Refer to Note 5, "Financial Statement Components," for a rollforward of the components of the allowance for doubtful accounts as of December 31, 2016 and 2017. Refer also to Note 17, "Subsequent Events," for discussion of the settlement agreement that was entered into subsequent to year-end that resolved the ongoing dispute and litigation with MCI Communications Services, Inc. d/b/a Verizon Business and Verizon Select Services, Inc. (collectively, “Verizon”), which is a CABS customer of the Company.

The Company includes unbilled receivables in its accounts receivable balance. Generally, these receivables represent services provided to customers, which will be billed in the next billing cycle. All amounts are considered collectible and billable. As of December 31, 2016 and 2017, unbilled receivables were $7,368 and $8,653, respectively.

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.

(In Thousands Except Share and per Share Amounts)

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, net of allowance for doubtful accounts as of December 31, 2016. As of December 31, 2017, one customer represented approximately 13% of the Company's accounts receivable, net of allowance for doubtful accounts.

For the years ended December 31, 2015, 2016 and 2017, no individual customer represented more than 10 percent of the Company’s total revenue.

Property and Equipment, net

Property and equipment, net is stated at cost, less accumulated depreciation and amortization. Depreciation and amortization is calculated on a straight-line basis over the estimated useful lives of those assets as follows:

Computer hardware and software	2 to 5 years
Internal-use software development costs	3 years
Furniture and fixtures	2 to 7 years
Leasehold improvements	Shorter of the estimated lease term or useful life

Maintenance and repairs are charged to expense as incurred.

Deferred Costs

The Company defers certain direct and incremental upfront costs related to the generation of a revenue stream or obtaining a new customer agreement. These costs include installment fees, activation and other telecommunication fees. The Company capitalizes these costs and amortizes them over the longer of the term of the customer contracts or the estimated customer life, which is approximately three years.

Software Development Costs

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

Capitalized costs of platform and other software applications are included in property and equipment. These costs are amortized over the estimated useful life of the software on a straight-line basis over three years. Management evaluates the useful life of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.

Debt Issuance Costs

The Company incurred debt issuance costs associated with obtaining and entering into a five-year Credit and Security Agreement in November 2016, which includes a revolving credit facility and a term loan. These costs include non-refundable structuring fees, commitment fees, up-front fees and syndication expenses, which have been deferred and are being amortized based on the effective interest method over the term of the Credit and Security Agreement. The debt issuance costs associated with the revolving credit facility are recorded as a deferred cost in the accompanying consolidated balance sheets. The unamortized debt issuance costs, which are included in prepaid expenses and other current assets in the accompanying consolidated balance sheets, were $200 and $175 as of December 31, 2016 and 2017, respectively. Debt issuance costs associated with the term loan were recognized as an adjustment of the yield of the loan and were reflected as a reduction of the long-term debt balance. As of December 31, 2016 and 2017, unamortized debt issuance costs were $326 and $0, respectively. On November 14, 2017, the term loan was paid in full and $260 of unamortized debt issuance costs were recorded as interest expense.

Goodwill

The Company reviews goodwill and indefinite-lived intangible assets at least annually, as of December 31, for possible impairment. Goodwill and indefinite-lived intangible assets are reviewed for possible impairment at an interim date if an event occurs or circumstances change that would more likely than not reduce the fair value of the reporting unit or indefinite-lived intangible asset below its carrying value. The Company tests goodwill at the reporting unit level and has determined that it has two-reporting units, CPaaS and Other. All Goodwill is allocated to the CPaaS reporting unit. Management may first evaluate qualitative factors to assess if it is more likely than not that the fair value of a reporting unit is less than its carrying amount and to determine if a two-step impairment test is necessary. Management may choose to proceed directly to the two-step evaluation, bypassing the initial qualitative assessment. The first step of the impairment test involves comparing the fair value of the reporting unit to its net book value, including goodwill. If the net book value exceeds its fair value, then the Company would perform the second step of the goodwill impairment test to determine the amount of the impairment loss. The impairment loss would be calculated by comparing the implied fair value of the goodwill to its net book value. In calculating the implied fair value of goodwill, the fair value of the entity would be allocated to all of the other assets and liabilities based on their fair values. The excess of the fair value of the entity over the amount assigned to other assets and liabilities is the implied fair value of goodwill. An impairment loss would be recognized when the carrying amount of goodwill exceeds its implied fair value.

The Company makes assumptions regarding estimated future cash flows, discount rates, long-term growth rates and market values to determine each reporting unit's and indefinite-lived intangible asset's estimated fair value. If these estimates or related assumptions change in the future, the Company may be required to record an impairment charge. As of December 31, 2016 and 2017, the Company has recorded goodwill of $6,867. No goodwill impairment charges were recorded for the years ended December 31, 2015, 2016 and 2017.

Impairment of Long-Lived Assets

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

Advertising Costs

The Company expenses advertising costs as incurred. Advertising costs totaled $329, $197 and $464 for the years ended December 31, 2015, 2016 and 2017, respectively, which are included in sales and marketing expenses in the accompanying consolidated statements of operations.

Commissions

Commissions consist of variable compensation earned by sales personnel and third-party resellers. Sales commissions associated with the acquisition of a new customer contract are recognized as sales and marketing expense at the time the customer has entered into a binding agreement.

Stock-Based Compensation

The Company accounts for stock-based compensation expense related to stock-based awards based on the fair value of the award on the grant date. Stock-based compensation expense is recognized on a straight-line basis over the requisite service period, which is generally four years. The Company uses the Black-Scholes option pricing model, net of estimated forfeitures, to measure the fair value of its stock options.

The Black-Scholes option pricing model requires the use of objective and subjective assumptions, which determine the fair-value of stock-based awards. These assumptions include:

- *Fair value of our common stock.* Prior to the Company's IPO, the fair value of the shares of the Company's common stock underlying stock options has historically been established by the board of directors. Numerous objective and subjective factors that were considered included, but were not limited to, the following: i) contemporaneous independent, third-party valuations of the Company's common stock; ii) the rights, preferences and privileges of the Company's redeemable convertible preferred stock relative to those of the Company's common stock; iii) the Company's results of operations, financial position and capital resources; iv) current business conditions and projections; v) the lack of marketability of the Company's common stock; vi) the hiring of key personnel and the experience of the Company's management; vi) the introduction of new products; vii) the risk inherent in the development and expansion of the Company's products; viii) the fact that the option grants involve illiquid securities in a private company; ix) the likelihood of achieving a liquidity event, such as an initial public offering or a sale of the Company, given the prevailing market conditions; x) industry trends and competitive environment; and xi) overall economic indicators, including gross domestic product, employment, inflation and interest rates. After the IPO, the Company uses the market closing price of its Class A common stock as reported on the NASDAQ Global Select Market for the fair value.

- *Expected term.* The expected term was estimated using the simplified method allowed under SEC guidance as the Company does not have sufficient historical data to use any other method to estimate the expected term.

- *Expected volatility.* The expected volatility is derived from an average of the historical volatilities of the common stock of several entities with characteristics similar to those of the Company, such as the size, and operational and economic similarities to its principle business operations. The Company uses this method because it has limited information on the volatility of its common stock.

- *Risk-free interest rate.* The risk-free interest rate is based on the yields of U.S. Treasury securities with maturities similar to the expected term of the options for each option group as of the grant date.

- *Expected dividends.* The expected dividend is assumed to be zero as the Company has never paid dividends and has no current plans to pay any dividends on its common stock.

In addition to the assumptions used in the Black-Scholes option pricing model, the Company must also determine a forfeiture rate to calculate the stock-based compensation for awards. Through December 31, 2017, the Company recognized compensation for only the portion of options expected to vest using an estimated forfeiture rate that was derived from historical employee termination behavior. If any of the assumptions used in the Black-Scholes option pricing model change, stock-based compensation for future options may differ materially compared to that associated with previous grants.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are determined based on temporary differences between the financial statement and tax basis of assets and liabilities using enacted tax rates. The Company recognizes the effect of a change in tax rates on deferred tax assets and liabilities in the period that includes the enactment date.

The Company reduces the measurement of a deferred tax asset, if necessary, by a valuation allowance if it is more likely than not that it will not realize some or all the deferred tax asset. Quarterly, the Company reviews the deferred tax assets for recoverability based on historical taxable income, projected future taxable income, the expected timing of the reversals of existing temporary differences and the implementation of prudent and feasible tax planning strategies. The evaluation of the recoverability of deferred tax assets requires judgment in assessing future profitability. Should there be a change in the ability to recover deferred tax assets, the Company’s income tax provision would increase or decrease in the period in which the assessment is changed.

The Company accounts for uncertain tax positions by recognizing the financial statement effects of a tax position only when, based upon technical merits, it is more likely than not that the position will be sustained upon examination. The tax benefit recognized is measured as the largest amount of benefit determined on a cumulative probability basis that the Company believes is more likely than not to be realized upon ultimate settlement of the position. The Company recognizes potential accrued interest and penalties associated with unrecognized tax positions in income tax expense.

Operating Segments

Operating segments are defined as components of an enterprise for which separate financial information is available and evaluated regularly by the chief operating decision maker (“CODM”) in deciding how to make operating decisions, allocate resources and in assessing performance. The Company has two operating segments, CPaaS and Other, which are deemed to be reportable segments. The Company's CODM is its Chief Executive Officer. The CODM evaluates the performance of the Company's operating segments primarily based on revenue and gross profit. The Company does not analyze discrete segment balance sheet information related to long-term assets, all of which are located in the United States. All other financial information is presented on a consolidated basis.

Earnings (Loss) per Share

Basic earnings (loss) per share attributable to common stockholders is calculated by dividing the net income (loss) attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period.

Diluted net income (loss) per share is calculated by giving effect to all potentially dilutive common stock when determining the weighted-average number of common shares outstanding. For purposes of the diluted net income (loss) per share calculation, options and warrants to purchase common stock and redeemable convertible preferred stock are considered to be potential common stock.

The Company has issued securities other than common stock that participate in dividends ("Participating Securities"), and therefore utilizes the two-class method to calculate net income (loss) per share. These Participating Securities include the Series A redeemable convertible preferred stock. The two-class method requires a portion of net income (loss) to be allocated to the Participating Securities to determine the net income (loss) attributable to common stockholders. Net income (loss) attributable to the common stockholders is equal to the net income (loss) less dividends paid on preferred stock with any remaining earnings allocated in accordance with the bylaws between the outstanding common and redeemable convertible preferred stock as of the end of each period. On November 9, 2017, the Participating Securities were converted into shares of Old Class A common stock, which converted to Class B common stock immediately prior to the IPO.

Emerging Growth Company Status

The Company is an "emerging growth company" as defined in the Jumpstart Our Business Startups Act ("JOBS Act"). The JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. Thus, an emerging growth company can delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. The Company has elected to avail itself of this extended transition period and, as a result, it will not adopt new or revised accounting standards on the relevant dates on which adoption of such standards is required for other public companies.

Recently Adopted Accounting Pronouncements

In March 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-09, *Compensation—Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*. The effective date of ASU 2016-09 for private business entities is for fiscal years beginning after December 15, 2017. Early adoption is permitted and the Company adopted the amendments in ASU 2016-09 effective January 1, 2016. This standard simplifies several aspects of the accounting for equity-based payment awards, including the income tax consequences and classification on the statement of cash flows. Certain changes implemented by this standard are required to be applied retrospectively, while other changes are required to be applied prospectively. The Company elected to continue to estimate forfeitures when recording stock-based compensation expense.

All excess tax benefits and tax deficiencies related to the year ended December 31, 2016 were recognized in income tax expense. Prior to the adoption of this standard, this amount would have been recorded as additional paid-in capital. This change could create future volatility in the Company’s effective tax rate depending upon the amount of exercise or vesting activity from stock based awards.

The recognition of previously unrecognized excess tax benefits of $420 was recognized as a cumulative effect adjustment on a modified retrospective basis during the year ended December 31, 2016. The Company recorded a deferred tax asset for previously unrecognized excess tax benefits outstanding as of the January 1, 2016, with an offsetting adjustment to accumulated deficit.

In addition, cash flows related to excess tax benefits will no longer be classified as a financing activity apart from other income tax cash flows. The Company has adopted the change in presentation of excess tax benefits in the statements of cash flows on a prospective basis beginning in 2016.

In November 2015, the FASB issued ASU 2015-17, *Balance Sheet Classification of Deferred Taxes (Topic 740)*, which requires that all deferred tax assets and liabilities, including any related valuation allowance, be classified as noncurrent on the balance sheet. ASU 2015-17 was effective for fiscal years beginning after December 15, 2016 for public entities, and early adoption is permitted. The Company elected to early adopt ASU 2015-17 beginning with the year ended December 31, 2015.

In April 2015, the FASB issued ASU 2015-05, *Customer’s Accounting for Fees Paid in a Cloud Computing Arrangement*. This new standard, which provides guidance to customers about whether a cloud computing arrangement includes a software license, was effective January 1, 2016. If a cloud computing arrangement includes a software license, then the customer should account for the software license element of the arrangement consistent with the acquisition of other software licenses. If a cloud computing arrangement does not include a software license, the customer should account for the arrangement as a service contract. The Company adopted this standard on January 1, 2016. The adoption of this standard did not have a material impact on its consolidated financial statements.

In April 2015, the FASB issued ASU 2015-03, *Simplifying the Presentation of Debt Issuance Costs*, which simplifies the presentation of debt issuance costs by requiring that such costs be presented in the consolidated balance sheets as a direct deduction from the carrying value of the associated debt instrument, consistent with debt discounts. Subsequent to the issuance of ASU 2015-03, the SEC staff announced that the presentation of debt issuance costs associated with line-of-credit arrangements may be presented as an asset. This announcement was codified by the FASB in ASU 2015-15. These ASUs were effective for the year ended December 31, 2016, and the adoption did not have a material impact on the Company’s financial condition, results of operations or cash flows.

In August 2014, the FASB issued ASU 2014-15, *Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern*, which provides guidance about management’s responsibility to evaluate whether there is substantial doubt about an entity’s ability to continue as a going concern and to provide related disclosures. ASU 2014-15 was effective for the year ended December 31, 2016, and its adoption did not have a material impact on the Company’s financial condition, results of operations or cash flows.

Recent Accounting Pronouncements Not Yet Adopted

In May 2017, the FASB issued 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. ASU 2017-04 is effective for annual and interim impairment tests performed in periods beginning after December 15, 2021, and early adoption is permitted. Management does not expect the adoption of this guidance to have any impact on the Company's financial position, results of operations, or cash flows.

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 impact from 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 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 for the Company beginning in the year ended December 31, 2019. This guidance can be applied either retrospectively to each period presented or as a cumulative effect adjustment as of the date of adoption. In December 2016, the FASB issued ASU 2016-20, "Revenue from Contracts with Customers, Technical Corrections and Improvements to Topic 606," which made 12 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, which will be effective for the Company beginning January 1, 2019.

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 identify the impact on its consolidated financial results. The Company has completed a diagnostic which highlighted potential differences between current accounting policies and the new standard. Additionally, the Company has engaged a third-party service provider to assist in its evaluation of customer contracts to identify the attributes that could result in a different accounting treatment under ASU 2014-09. From an information technology perspective, the Company identified the preliminary business requirements and functionality of a new technology solution and have selected a software provider. The Company has not yet reached a conclusion as to whether the quantitative effect of the adoption of the new standard on its revenue will be material. The Company 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

(In Thousands Except Share and per Share Amounts)

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 distribution was recorded at the carrying amount of Republic's net liabilities of $1,101 as of November 30, 2016, as follows:

Assets		
Accounts receivable, net of allowance for doubtful accounts	$	1,199
Inventory		7,305
Prepaid expenses and other current assets		2,540
Total current assets		11,044
Property and equipment, net		1,898
Other long-term assets		196
Total assets	$	13,138
Liabilities		
Accounts payable	$	7,126
Accrued expenses		3,662
Deferred revenue		3,310
Total current liabilities		14,098
Other long-term liabilities		141
Total liabilities	$	14,239
Net liabilities of Republic	$	1,101

In addition, the Company distributed $30,000 in cash to Republic in connection with the Spin-Off. Accordingly, the net assets distributed to the stockholders in connection with the Spin-Off was $28,899. Bandwidth has not otherwise provided nor does it intend to provide financial support to Republic.

Given the nature of the Spin-Off transaction, the equity holders of Bandwidth are comprised of substantially the same individuals and entities that are the equity owners of Republic. The Company determined the equity owners of Republic are related parties of Bandwidth. As described in Note 15, 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, and because investors in Republic have disproportionate voting rights, the Company concluded that Republic is a variable interest entity ("VIE").

Republic is a provider of Wi-Fi centric mobile services directly to retail consumers. Bandwidth determined it is not the primary beneficiary of Republic, as Bandwidth and its related parties do not individually have power to direct the activities that most significantly impact Republic's economic performance and power is not shared. Bandwidth's involvement with Republic involves providing certain support services through the Transition Services Agreement, which does not give it power over key activities. Key activities are directed by the Board of Directors Republic, which require majority approval. Bandwidth does not have direct representation on the Board of Republic and is not able to exert power over its key activities. Bandwidth does not have an implicit variable interest in Republic. Republic is financed primarily through the cash distribution in connection with the Spin-off and its own ongoing operations.

(In Thousands Except Share and per Share Amounts)

The Company’s maximum exposure to loss relating to this variable interest entity is limited to amounts due under the service agreements between Bandwidth and Republic as described in Notes 12, "Commitments and Contingencies" and 15, "Related Parties".

The Spin-Off represented a strategic shift to Bandwidth’s business. The Company believes that for US Federal income tax purposes, the Spin-Off will qualify as tax-free for Republic, Bandwidth and its stockholders. The Company entered into a tax sharing agreement with Republic that governs rights and obligations after the Spin-Off regarding income taxes and other taxes, including tax liabilities and benefits, attributes, returns and contests.

The table below provides the operating results of the discontinued operations through the date of the Spin-Off for the years ended December 31, 2016:

	Year Ended December 31,	
	2015	2016
Revenue	$ 91,304	$ 83,156
Direct costs of network services and equipment	(78,922)	(61,582)
Operating expense	(24,692)	(25,502)
Depreciation and interest	(1,355)	(949)
Income tax benefit	—	1,805
Loss from discontinued operations	$ (13,665)	$ (3,072)

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 2017 because of the relatively short duration of these instruments. The carrying value of long-term debt at December 31, 2016 approximates fair value given interest rates are based on market rates. The rates are subject to change monthly, quarterly, semi-annually or annually at the Company’s election.

The Company uses a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis, as well as assets and liabilities measured at fair value on a non-recurring basis, in periods subsequent to their initial measurement. The hierarchy requires use of observable inputs when available, and to minimize the use of unobservable inputs when determining fair value. The three tiers are defined as follows:

- **Level 1.** Observable inputs based on unadjusted quoted prices in active markets for identical assets or liabilities;
- **Level 2.** Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and
- **Level 3.** Unobservable inputs for which there is little or no market data, which requires the Company to develop its own assumptions.

(In Thousands Except Share and per Share Amounts)

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 measured at fair value as of December 31, 2016 and 2017:

	Fair Value Measurements on a Recurring Basis December 31, 2016			
	Level 1	Level 2	Level 3	Total
Stockholders' anti-dilutive arrangement	$ —	$ —	$ 184	$ 184
Total	$ —	$ —	$ 184	$ 184

	Fair Value Measurements on a Recurring Basis December 31, 2017			
	Level 1	Level 2	Level 3	Total
Money Market Account	$ 28,015	$ —	$ —	$ 28,015
Total	$ 28,015	$ —	$ —	$ 28,015

The Company monitors the availability of observable market data to assess the appropriate classification of financial instruments within the fair value hierarchy. Changes in economic conditions or model-based valuation techniques may require the transfer of financial instruments from one fair value level to another. In such instances, the transfer is reported at the beginning of the reporting period. There were no transfers between Levels 1, 2 or 3 during the years ended December 31, 2016 and 2017.

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

On February 22, 2011, the Company entered into an anti-dilutive arrangement 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.

The shareholders' anti-dilutive arrangement is included in other liabilities in the consolidated balance sheets as of December 31, 2016, and as a result of the Company's IPO, the agreement terminated on November 9, 2017.

Prior to the termination date, the fair value of the shareholders' anti-dilutive arrangement was 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 were the fair value of the Company's stock and the expected term of the options. The expected term was 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 was based on the historical volatility of certain public entities that are similar to the Company as the Company did not have sufficient historical transactions of its own shares on which to base expected volatility.

(In Thousands Except Share and per Share Amounts)

5. Financial Statement Components

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

	December 31,	
	2016	2017
Trade accounts receivable	$ 31,734	$ 44,692
Unbilled accounts receivable	7,368	8,653
Allowance for doubtful accounts	(22,571)	(32,463)
Other accounts receivable	307	343
Total accounts receivable, net	$ 16,838	$ 21,225

Components of allowance for doubtful accounts are as follows:

	Year Ended December 31,	
Allowance for doubtful accounts:	2016	2017
Balance, beginning of period	$ 238	$ 255
Charged to bad debt expense	238	176
Deductions(1)	(221)	(242)
Balance, end of period	$ 255	$ 189

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

	Year Ended December 31,	
Allowance for CABS revenue:	2016	2017
Balance, beginning of period	$ 12,317	$ 22,316
Billings deemed not probable of collection(1)	10,494	10,024
Deductions(2)	(495)	(66)
Balance, end of period	$ 22,316	$ 32,274

(1) Represents amounts billed but where collectibility is not probable based on customers collection experience. Amounts were charged to a contra-revenue account. Refer also to Note 17, Subsequent Events," for discussion of the settlement agreement that was entered into subsequent to year-end that resolved the ongoing dispute and litigation with Verizon, which is a CABS customer of the Company and represented the majority of the outstanding CABS receivables and related allowance.

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

(In Thousands Except Share and per Share Amounts)

	Year Ended December 31,		
CABS revenue:	**2015**	**2016**	**2017**
Billed	$ 15,617	$ 19,838	$ 19,147
Revenue recognized	8,454	9,344	9,123
Billings deemed not probable of collection(1)	$ 7,163	$ 10,494	$ 10,024

(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	**2017**
Accrued expense	$ 6,853	$ 6,851
Accrued compensation and benefits	4,373	5,237
Accrued sales, use, and telecom related taxes	2,769	3,030
Other accrued expenses	654	515
Total accrued expenses	$ 14,649	$ 15,633

6. Property and Equipment

Property and equipment, net consisted of the following:

	December 31,	
	2016	**2017**
Furniture and fixtures	$ 680	$ 863
Computer and office equipment	7,539	7,545
Telecommunications equipment	13,718	19,985
Leasehold improvements	453	453
Software development costs	13,676	15,517
Automobile	10	10
Total cost	36,076	44,373
Less—accumulated depreciation	(24,896)	(29,427)
Total property and equipment, net	$ 11,180	$ 14,946

The Company capitalizes the costs to design software for internal use related to the development of its platform during the application development stage of the projects. The costs are primarily comprised of salaries and benefits of the projects' engineers and product development teams. Internally developed software is reported at cost less accumulated amortization. Amortization begins once the project is substantially complete and ready for its intended use. The Company amortizes the asset on a straight-line basis over the useful life, which is estimated to be three years. Costs incurred prior to the application development stage, maintenance activities or minor upgrades are expensed in the period incurred. Unamortized software development costs were approximately $4,056 and $3,795 as of December 31, 2016 and 2017, respectively.

(In Thousands Except Share and per Share Amounts)

Amortization expense related to capitalized software development costs were $2,842, $2,820 and $2,133 for the years ended December 31, 2015, 2016 and 2017, respectively.

The Company recognized an impairment of $71, $91 and $81 during the years ended December 31, 2015, 2016 and 2017, respectively, related to capitalized software development costs that provided no future benefit and therefore were impaired. This expense is reflected within cost of revenue in the accompanying consolidated statements of operations.

The Company capitalized $3,011, $2,230 and $2,942 of software development costs during the years ended December 31, 2015, 2016 and 2017, respectively.

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

	Year Ended December 31,		
	2015	2016	2017
Cost of revenue	$ 5,258	$ 4,574	$ 4,315
Research and development	21	29	81
Sales and marketing	16	21	27
General and administrative	872	627	450
Total depreciation expense	$ 6,167	$ 5,251	$ 4,873

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	$ 15,093	$ (6,611)	$ 8,482	

Intangible assets consisted of the following as of December 31, 2017:

	Gross Amount	Accumulated Amortization	Net Carrying Value	Amortization Period
				(Years)
Customer relationships	$ 10,396	$ (3,552)	$ 6,844	20
Domain name and related trademarks	2,678	(2,643)	35	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	$ 15,093	$ (7,450)	$ 7,643	

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Amortization expense for definite lived intangible assets was $908, $891 and $839 for the years ended December 31, 2015, 2016 and 2017, respectively. The weighted average amortization period for all definite lived intangible assets is 19 years.

Future estimated amortization expense for definite lived intangible assets subsequent to December 31, 2017 is as follows:

	Amount
2018	$ 555
2019	520
2020	520
2021	520
2022	520
Thereafter	4,244
	$ 6,879

Costs associated with the acquisition and transfer of the CLEC perpetual licenses from other entities have been capitalized and have an indefinite life. The Company evaluates these indefinite lived intangible assets on an annual basis to assess if any impairment exists. The Company performed its annual assessment on December 31, 2016 and 2017 and concluded no impairment exists.

During the year ended December 31, 2016, the Company re-evaluated its marketing and branding usage of the trade name assets acquired in the Dash acquisition as part of its annual evaluation of its intangible assets, and concluded there was no further benefit from the use of the trade name. The Company impaired the asset and recognized a loss of $695, which is reflected within general and administrative expenses in the accompanying consolidated statements of operations and comprehensive income for the year ended December 31, 2016.

8. Debt

In September 2008, the Company entered into a Loan and Security Agreement which included a revolving line of credit with a bank. Substantially all assets of the Company were pledged as a Security to the Loan and Security Agreement. This agreement was amended several times to increase the Company's borrowing limit and extend the maturity date. On December 14, 2015, the Loan and Security Agreement was amended to increase the Company's borrowing limit to $25,000 and to extend the maturity through December 14, 2017.

On February 24, 2016, the Loan and Security Agreement was amended to add the ability to include an outstanding letter of credit as an advance on the revolving line of credit. On March 28, 2016 the Loan and Security Agreement was further amended to update certain covenants for 2016 performance metrics. On December 1, 2016, the Company paid the Loan and Security Agreement in full.

On November 4, 2016, the Company entered into a Credit and Security Agreement with a syndication of four banks. The agreement includes a $40,000 term loan, and a $25,000 revolving loan, which includes a swing line of up to $1,000 and limits letters of credit commitments to a maximum of $2,500. Substantially all assets of the Company are pledged as security to the Credit and Security Agreement. The term of the Credit and Security Agreement is five years and matures on November 3, 2021. The interest rate used for the debt is based, at the Company's election, on either the Federal Funds Effective Rate or LIBOR plus a stated margin, as defined in the Credit and Security Agreement. Once the Company repays any portion of the term loan, it cannot be re-borrowed. The Company is entitled to borrow and repay and borrow under the revolving loan at any time during the term of the Credit and Security Agreement. This agreement requires the Company to meet a certain leverage ratio and minimum debt service coverage ratio each quarter on a trailing 12-month basis.

(In Thousands Except Share and per Share Amounts)

On November 14, 2017, the term loan was paid in full with proceeds from the IPO. As of December 31, 2016 and 2017, the Company had $40,000 and $0, 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 capacity under the Credit and Security Agreement revolving loan was $25,000 as of December 31, 2017.

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 December 31, 2017, cost and accumulated depreciation of the assets under capital leases recorded by the Company were $1,951 and $1,855, respectively.

Remaining payments due on the Company’s capital lease obligations as of December 31, 2017, are as follows:

	Amount
2018	$ 92
Less amount representing interest	—
	92
Less current maturities	92
	$ —

9. Segment and Geographic Information

The Company has two reportable segments, CPaaS and Other. Segments are primarily 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 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.

	Year Ended December 31,		
	2015	2016	2017
CPaaS			
Revenue	$ 101,502	$ 117,078	$ 131,572
Cost of revenue	64,760	71,218	75,859
Gross profit	$ 36,742	$ 45,860	$ 55,713
Other			
Revenue	$ 36,299	$ 35,057	$ 31,383
Cost of revenue	14,482	14,000	13,403
Gross profit	$ 21,817	$ 21,057	$ 17,980
Consolidated			
Revenue	$ 137,801	$ 152,135	$ 162,955
Cost of revenue	79,242	85,218	89,262
Gross profit	$ 58,559	$ 66,917	$ 73,693

All assets were held in the United States as of December 31, 2016 and 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):

	Year Ended December 31,		
	2015	2016	2017
United States	$ 137,514	$ 151,618	$ 162,393
International	287	517	562
Total	$ 137,801	$ 152,135	$ 162,955

10. Redeemable Convertible Preferred Stock and Stockholders' (Deficit) Equity

Prior to the IPO, the Company had three classes of stock: 1) Series A redeemable convertible preferred stock ("Series A preferred stock"), 2) Old Class A common stock, and 3) Old Class B common stock.

On October 19, 2017, the Company's Board of Directors approved, and on October 23, 2017 the Company effected, a 2.5-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 2.5 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 converted into 2.5 shares of Old Class A common stock after the 2.5-to-1 split.

Redeemable Convertible Preferred Stock

As of January 1, 2010, the Company had authorized 5,000,000 shares of Series A preferred stock. On February 22, 2011, the Company amended and restated its Certificate of Incorporation such that the Company authorized 1,200,000 shares of preferred stock, all of which have been designated as Series A preferred stock.

On February 22, 2011, the Company completed the issuance of 663,907 shares of Series A preferred stock at $30.8358 per preferred share. On March 24, 2011, the Company completed the final closing of 46,093 shares of Series A preferred stock at $30.8358 per preferred share.

Pursuant to the Spin-Off, each holder of Series A preferred stock received a share of Republic Class A voting common stock for each share of Series A preferred stock held by such holder equal to the number of shares of Class A common stock into which such share of Series A preferred stock is then convertible.

As of December 31, 2016, the Company had 710,000 issued and outstanding shares of Series A preferred stock.

On November 9, 2017, each share of Series A preferred stock converted into 2.5 shares of Old Class A common stock at the stockholders' option resulting in the issuance of 1,775,000 shares of Old Class A common stock.

Conversion

Each share of Series A preferred stock was 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, the conversion ratio of each share of outstanding preferred stock also was adjusted, such that each share of outstanding preferred stock converts into 2.5 shares of Old Class A common stock at a conversion price of $12.3343.

Liquidation Preference

In the event of any Liquidation Event or Deemed Liquidation Event, the holders of Series A, preferred stock were entitled to receive, in preference to any distribution of the proceeds to the holders of common stock, an amount per share equal to the greater of (1) an amount equal to the original issue price for Series A preferred stock plus declared but unpaid dividends on such share, plus the product of (a) the number of days elapsed since issuance divided by 365, multiplied by (b) 0.08 multiplied by (c) the Series A original issue price, or (2) such amount as would have been payable had all shares of Series A preferred stock had been converted to common stock immediately prior to such Liquidation or Deemed Liquidation Event. If the proceeds thus distributed among the holders of the Series A preferred stock are insufficient to permit payment to such holders of the full preferential amounts, then the entire proceeds available for distribution shall be distributed ratably. Upon completion of the distribution referred to above, all of the remaining proceeds available for distribution shall be distributed to the holders of the Company's common stock pro rata based on the number of common stock held by each. As of December 31, 2016, the liquidation preference totaled $32,148.

Redemption

Shares of Series A preferred stock were redeemable by the Company out of funds lawfully available at a price equal to the Series A original issue price per share, plus all declared but unpaid dividends thereon, in three annual installments commencing not more than 60 days after receipt by the Company at any time on or after December 31, 2020, from the holders of a majority of the then-outstanding shares of Series A preferred stock. At each redemption date, shares of Series A Preferred stock were redeemable, on a pro-rata basis in accordance with the number of shares of Series A preferred stock owned by each holder, that number of outstanding shares of Series A preferred stock determined by dividing the total number of shares of Series A preferred stock outstanding by the number of remaining redemption dates (including the redemption date to which such calculation applies).

Voting Rights

The holders of Series A preferred stock were 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 Old Class A common stock as a single class. The holders of record of the shares of Series A preferred stock, exclusively and as a separate class, were entitled to elect one director of the Company.

The Company could not, without the approval of the holders of record of a majority of the shares of Series A preferred stock, as a separate class, undertake certain actions as specified in the Certificate of Incorporation, as amended and restated as of February 22, 2011 and as subsequently amended.

Dividends

The amount of any dividend on an outstanding share of Series A preferred stock is determinable based upon the number of shares of common stock into which such Series A preferred stock is then convertible based upon the original issuance price of a share of Series A preferred stock of $30.8358 per share, subject to appropriate adjustment in the event of any stock dividend, stock split, combination or other similar recapitalization with respect to the Series A preferred stock. During the years ended December 31, 2016 and 2017, no dividends were declared.

Preferred Stock

On November 9, 2017, the Company filed its second amended and restated certificate of incorporation and authorized 10,000,000 shares of undesignated preferred stock, par value $0.001, of which no shares were issued and outstanding as of December 31, 2017.

Common Stock

As of December 31, 2016, 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 had no voting rights.

As of December 31, 2016, there were 11,779,975 shares of Old Class A common stock issued and outstanding at $0.001 par value per share.

As of December 31, 2016, there were 18,590 shares of Old Class B common stock issued and outstanding at $0.001 par value per share.

On November 9, 2017, the Company filed its second amended and restated certificate of incorporation. Upon the effectiveness of the Company's second amended and restated certificate of incorporation and the effectiveness of the Company's second amended and restated bylaws, i) each share of Old Class A common stock was reclassified as one share of Class B common stock with ten votes per share, ii) each share of Old Class B common stock was reclassified as one share of Class A common stock with one vote per share. Consequently, the Series A preferred stock, that had previously converted into 2.5 shares of the Old Class A common stock, at the option of the holder, was converted into 1,775,000 shares of Class B common stock.

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 Class A common stock consists of 100,000,000 shares and the authorized Class B common stock consists of 20,000,000 shares as of December 31, 2017.

As of December 31, 2017, there were 4,197,831 shares of Class A common stock issued and outstanding at $0.001 par value per share.

As of December 31, 2017, there were 13,440,725 shares of Class B common stock issued and outstanding at $0.001 par value per share.

Shares of Class B common stock are convertible into shares of Class A common stock upon the stockholder's voluntary written notice to the Company's transfer agent or a transfer by the stockholder, subject to limited exceptions for transfers for estate planning purposes.

Voting Rights

The holders of Class A common stock and Class B common stock have identical rights, except that holders of Class A voting common stock are entitled to one vote per share of Class A common stock and holder of Class B common stock are entitled to ten votes per share of Class B common stock.

Dividends

Any dividends or distributions paid or payable to the holders of shares of Class A common stock and Class B common stock shall be paid pro rata, on an equal priority. During the year ended December 31, 2017, no dividends were declared.

Dividend payments are subject to a restriction by the Company’s Loan and Security Agreement prohibiting the Company to pay any dividends or any other distribution or payment on account of or in redemption, retirement or purchase of any capital stock through the term of the agreement.

Option to Purchase Additional Shares

On November 28, 2017, the Underwriters exercised their option to purchase 162,991 of Class B common stock held by certain selling shareholders. Immediately upon transfer, the shares converted into Class A common stock in accordance with the Company's second amendment and restated certificate of incorporation.

Stock Purchase Warrants

In connection with four notes payable issued December 20, 2010, the Company granted stock purchase warrants to the previous debt holders. The warrants were exercisable for 30,470 shares of the Company’s Old Class A common stock at an exercise price of $5.80 per share. Warrants outstanding at December 31, 2016 and 2017, were 15,844 and 0, respectively.

The Company granted other stock purchase warrants in 2011 that were exercisable for 43,847 shares of the Company’s Old Class A common stock at an exercise price of $0.001 per share. Warrants outstanding to purchase shares of the Company’s Old Class A common stock were 39,000 at December 31, 2016 and 2017, and expire on March 25, 2018.

Additional warrants to purchase 9,846 shares of the Company’s Old Class A common stock were granted in 2011 at an exercise price of $5.80 per share, which expire on February 22, 2018.

Warrants to purchase 4,531 shares of the Company's Old Class A common stock were granted in 2017 at an exercise price of $6.57 per share. Warrants outstanding at December 31, 2017 were 2,504, which expire on January 19, 2018.

Pursuant to the Spin-Off, each holder of a warrant to purchase common stock was issued a warrant to purchase shares of Republic Class A voting common stock with equivalent economic terms. A total of 64,691 and 51,350 shares of common stock were reserved for the issuance of stock purchase warrants at December 31, 2016 and 2017, respectively.

On November 9, 2017, the Company filed its second amended and restated certificate of incorporation. Upon the effectiveness of the Company's second amended and restated certificate of incorporation and the effectiveness of the Company's second amended and restated bylaws, warrants exercisable for shares of Old Class A common stock became exercisable into shares of Class B common stock.

Spin-Off

Pursuant to the Spin-Off, (i) each holder of Old Class A common stock received one share of Republic Class A common stock for each share of Old Class A common stock held by such holder, (ii) each holder of Old Class B common stock received one share of Republic Class B non-voting common stock for each share of Old Class B non-voting common stock held by such holder and (iii) each holder of Series A preferred stock received a number of shares of Republic Class A voting common stock for each share of Series A preferred stock held by such holder equal to the number of shares of Old Class A common stock into which such share of Series A preferred stock is then convertible.

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.

(In Thousands Except Share and per Share Amounts)

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.

Following the effectiveness of the 2010 Plan, the Company did not make any further grants under the 2001 Plan. However, the 2001 Plan continues to govern the terms and conditions of the outstanding awards granted under it. On November 9, 2017, the 2010 Plan was terminated in connection with the Company's IPO. Accordingly, no shares are available for future issuance under the 2010 Plan. However, the 2010 Plan will continue to govern the terms and conditions of the outstanding awards granted thereunder.

On November 9, 2017, the Company filed its second amended and restated certificate of incorporation. Upon the effectiveness of the Company's second amended and restated certificate of incorporation and the effectiveness of the Company's second amended and restated bylaws, options exercisable into shares of Old Class A common stock and Old Class B common stock became exercisable into shares of Class B common stock and Class A common stock, respectively.

2017 Incentive Award Plan

The Company's 2017 Incentive Award Plan (the "2017 Plan") became effective on November 9, 2017. The 2017 Plan provides for the grant of stock options, including incentive stock options and non-qualified stock options, stock appreciation rights, restricted stock, dividend equivalents, restricted stock units, and other stock or cash based awards to employees, consultants and directors of the Company. A total of 1,050,000 shares of the Company's Class A common stock were originally reserved for issuance under the 2017 Plan.

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.

Stock options

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

	Year Ended December 31,		
	2015	2016	2017
Expected dividend yield	0%	0%	0%
Expected stock price volatility	44%	44%	44%-49%
Average risk-free interest rate	1.5%-1.9%	1.3%-2.0%	1.9%-2.3%
Expected life	6.2 years	6.2 years	6.2 years
Fair value of common stock	\$9.43-\$9.57	\$9.57-\$9.60	\$9.60-\$20.83

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

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	Number of Options Outstanding	Weighted-Average Exercise Price (per share)	Weighted-Average Remaining Contract Life (in years)	Aggregate Intrinsic value (in thousands)
Outstanding as of 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	(44,210)	9.46		
Outstanding as of December 31, 2017	3,659,791	$ 6.88	4.38	$ 59,436
Options vested and exercisable at December 31, 2017	3,209,890	$ 6.28	3.83	$ 54,051
Options vested and expected to vest as of December 31, 2017	3,641,078	$ 6.85	4.35	$ 59,230

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 $4.24 , $4.06 and $7.72 for the years ended December 31, 2015, 2016 and 2017, respectively.

The total estimated grant date fair value of options vested was $2,107, $2,082 and $1,299 for the years ended December 31, 2015, 2016 and 2017, respectively.

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

	Year Ended December 31,		
	2015	2016	2017
Cost of revenue	$ 45	$ 61	$ 80
Research and development	189	138	155
Sales and marketing	239	182	172
General and administrative (1)	3,020	989	1,396
Total	$ 3,493	$ 1,370	$ 1,803

(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, which accelerated the vesting period and extended the exercise period, resulting in the recognition of $394 of additional stock compensation expense for the year ended December 31, 2017.

The Company will recognize $1,935 of compensation cost in the future for stock-based employee compensation over the weighted-average period of 2.59 years for stock options granted before December 31, 2017.

12. Commitments and Contingencies

Operating Leases

(In Thousands Except Share and per Share Amounts)

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 began 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 December 31, 2017 are as follows:

	Amount
2018	$ 3,631
2019	3,700
2020	3,838
2021	3,873
2022	2,018
	$ 17,060

The Company incurred rent expense of $1,656, $2,003 and $3,327 for the years ended December 31, 2015, 2016 and 2017, respectively, which is included in general and administrative expenses in the consolidated statements of operations and comprehensive income (loss).

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 $47 and $949 for the years ended December 31, 2016 and 2017, respectively, which is included in general and administrative expenses in the consolidated statements of operations and comprehensive income (loss).

Future minimum sub-lease receipts required under the non-cancellable lease as of December 31, 2017 are as follows:

	Amount
2018	$ 1,020
2019	1,042
2020	1,065
2021	1,089
2022	594
	$ 4,810

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 $5,249 as of December 31, 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 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. See Note 17, "Subsequent Events," for current developments.

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 $698, $716 and $806 for the years ended December 31, 2015, 2016 and 2017, respectively.

(In Thousands Except Share and per Share Amounts)

14. Income Taxes

(Provision) benefit for income taxes from continuing operations consists of the following:

	Year Ended December 31,		
	2015	2016	2017
Current:			
Federal	$ —	$ 66	$ (448)
State	(104)	(58)	(302)
Total	(104)	8	(750)
Deferred:			
Federal	(272)	9,999	(5,983)
State	(32)	1,087	(185)
Total	(304)	11,086	(6,168)
Total (provision) benefit for income taxes	$ (408)	$ 11,094	$ (6,918)

The following table presents a reconciliation of the statutory federal tax rate and the Company's effective tax rate for the years ended December 31, 2015, 2016 and 2017:

	Year Ended December 31,		
	2015	2016	2017
Federal	34.0 %	34.0 %	34.0 %
State	2.5	4.2	4.7
Non-deductible expenses	1.0	5.0	1.2
Research credit	(3.2)	(2.3)	(1.5)
Stock-based compensation	11.0	(24.5)	0.1
Change in valuation allowance	(42.5)	(98.6)	—
Deferred tax rate change	0.8	0.8	16.1
Other	1.9	4.0	(0.9)
Total	5.5 %	(77.4)%	53.7 %

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The following table presents the significant components of the Company's net deferred tax assets:

	Year Ended December 31,	
	2016	2017
Deferred tax assets:		
Allowance for doubtful accounts	$ 95	$ 48
Accrued liabilities	2,011	1,687
Deferred revenue	241	395
Intangibles	237	166
Stock-based compensation	6,458	4,668
Tax credits	2,369	2,071
Net operating losses	4,249	26
Other	59	37
Total deferred tax assets	15,719	9,098
Less: valuation allowance	—	—
Net deferred tax assets	15,719	9,098
Deferred tax liability:		
Property and equipment	2,083	1,797
Goodwill	654	582
Other liability	288	193
Total deferred tax liabilities	3,025	2,572
Net deferred tax asset	$ 12,694	$ 6,526

The Company's accounting for deferred taxes involves the evaluation of a number of factors concerning the realizability of its net deferred tax assets. The Company primarily considered the historic performance of Bandwidth, the nature of the Company's deferred tax assets and the timing, likelihood and amount, if any, of future taxable income during the periods in which those temporary differences and carryforwards become deductible. Based on an analysis of these factors, the Company determined that in 2017 no valuation allowance against deferred tax assets was required.

As of December 31, 2017, the Company had approximately $2,563 in federal tax credits. If not utilized, the federal tax credit carryforwards will expire at various dates beginning in 2032.

As of December 31, 2017, the Company had approximately $590 in state net operating loss carryforwards. If not utilized, the state net operating loss carryforwards will expire at various dates beginning in 2020.

A limitation may apply to the use of the net operating loss and credit carryforwards, under Internal Revenue Code (IRC) §382 and §383, and similar state tax provisions that are applicable if the Company experiences an "ownership change." An ownership change may occur, for example, as a result of issuance of new equity. Should these limitations apply, the carryforwards would be subject to an annual limitation.

On December 22, 2017, the Tax Cuts and Jobs Act (the "Act") was enacted into law. The income tax effects of changes in tax law are recognized in the period when enacted. Among its numerous changes to the Internal Revenue Code, the Act reduces U.S. corporate rates from 35% to 21% for periods beginning on or after January 1, 2018. The Company has incurred additional expense of $2,073 due to the remeasurement of the deferred tax assets at the lower corporate tax rate. Other provisions of the Act did not have a significant impact on the Company's consolidated financial statements for the year ended December 31, 2017, but may impact the effective tax rate in subsequent periods.

(In Thousands Except Share and per Share Amounts)

Additional federal and state interpretive guidance is still forthcoming that could potentially affect the remeasurement of the deferred tax balance or give rise to new deferred tax amounts. As such, the remeasurement of the deferred tax balance is provisional pending future guidance. Accordingly, the Company is relying on the guidance in the SEC Staff Accounting Bulletin ("SAB") 118 and has included a reasonable estimate of the effect of the new rules in its Annual Report on Form 10-K while it waits for additional guidance to be released. The final impact may differ from this provisional amount due to, among other things, issuance of additional regulatory guidance, changes in interpretations and assumptions the Company has made, and actions the Company may take as a result of the Act. In accordance with SAB 118 the financial reporting impact of the Tax Reform Act will be completed no later than the fourth quarter of 2018.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

	Year Ended December 31,	
	2016	2017
Unrecognized tax benefits—January 1,	$ 456	$ 671
Gross increases—tax positions in prior period	104	—
Gross decreases—tax positions in prior period	—	—
Gross increases—tax positions in current period	111	64
Settlement	—	—
Lapse of statute of limitations	—	(4)
Unrecognized tax benefits—December 31,	$ 671	$ 731

If the $731 of unrecognized tax benefit is recognized, it would impact the effective tax rate.

The Company has not incurred any material tax interest or penalties with respect to income taxes in the years ended December 31, 2016 and 2017.

The Company expects no material changes in the twelve months following December 31, 2017 in its uncertain tax positions.

The Company files U.S. federal income tax returns as well as income tax returns in many U.S. states. The tax years 2008-2010 and 2012-2016 remain open to examination by the major jurisdictions in which the Company is subject to tax due to the carryforward of net operating losses.

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 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.

The Transition Services Agreement specifies certain services to be provided by the Company for a period of up to two years from the Spin-Off. These services include insurance administration, billing and collections, and other technical support as well as legal services related to intellectual property. The Company is compensated by Republic for these services based on costs incurred by the Company. For the period of December 1, 2016 to December 31, 2016 and the year ended December 31, 2017, the Company received compensation of $134 and $575, respectively, which is included in general and administrative expenses in the consolidated statements of operations and comprehensive income (loss).

In addition, there was approximately $0 and $15 due from Republic as of December 31, 2016 and 2017, respectively, which was recorded within accounts receivable in the accompanying consolidated balance sheet.

The Facilities Sharing Agreement specifies that the Company will sublet office space to Republic for at least 63 months. During the period of December 1, 2016 to December 31, 2016 and the year ended December 31, 2017, the Company sublet office space to Republic. For the years ended December 31, 2016 and 2017, the Company received rental payments of $47 and $949, respectively, which is included in general and administrative expenses in the consolidated statements of operations and comprehensive income (loss). No amounts were due to the Company under the Facilities Sharing Agreement as of December 31, 2016 and 2017.

The Tax Sharing Agreement governs rights and obligations after the Spin-Off regarding income taxes and other taxes, including tax liabilities and benefits, attributes, returns and contests. There are no amounts outstanding or payable under this agreement as of December 31, 2016 and 2017.

The Master Services Agreement specifies certain wholesale telecommunications services to be provided by the Company. The agreement is cancellable at any time by either party. During the period of December 1, 2016 to December 31, 2016 and the year ended December 31, 2017, the Company provided telecommunication services to Republic of $173 and $2,451, respectively. The Company recognized such amounts as revenue in the accompanying consolidated statements of operations and comprehensive income (loss). As of December 31, 2016 and 2017, the Company had a receivable of $3 and $311, respectively, under the Master Services Agreement.

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

The Company uses the two-class method to compute net (loss) 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 (loss) income 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:

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	Year Ended December 31,		
	2015	**2016**	**2017**
Income from Continuing Operations			
Income from continuing operations	$ 6,965	$ 25,430	$ 5,971
Less: income allocated to participating securities	931	3,355	644
Income from continuing operations attributable to common stockholders	$ 6,034	$ 22,075	$ 5,327
Income from continuing operations per share:			
Basic	$ 0.52	$ 1.89	$ 0.42
Diluted	$ 0.48	$ 1.72	$ 0.37
Loss from Discontinued Operations			
Loss from discontinued operations, net on income taxes	$ (13,665)	$ (3,072)	$ —
Less: loss allocated to participating securities	(1,827)	(405)	—
Loss from discontinued operations attributable to common stockholders	$ (11,838)	$ (2,667)	$ —
Loss from discontinued operations per share attributable to stockholders:			
Basic	$ (1.03)	$ (0.23)	$ —
Diluted	$ (0.95)	$ (0.21)	$ —
Net (loss) income			
Net (loss) income	$ (6,700)	$ 22,358	$ 5,971
Less: (loss) income allocated to participating securities	(896)	2,950	644
Net (loss) income attributable to common stockholders	$ (5,804)	$ 19,408	$ 5,327
Net (loss) income per share:			
Basic	$ (0.50)	$ 1.66	$ 0.42
Diluted	$ (0.47)	$ 1.51	$ 0.37
Weighted Average Number of Common Shares Outstanding			
Basic	11,497,727	11,678,568	12,590,221
Dilutive effect of stock options and warrants	958,813	1,192,064	1,952,949
Diluted	12,456,540	12,870,632	14,543,170

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:

	Year Ended December 31,		
	2015	**2016**	**2017**
Anti-dilutive Disclosure			
Series A redeemable convertible preferred stock outstanding	1,775,000	1,775,000	1,522,123
Stock options issued and outstanding	401,835	237,185	50,604

(In Thousands Except Share and per Share Amounts)

17. Subsequent Events

On January 12, 2018, the Company entered into an 84 month operating lease agreement to provide 40,035 square feet of additional office space. The new lease is expected to commence in September 2018. Future expected minimum payments under the lease are as follows:

	Amount
2018	$ 397
2019	1,203
2020	1,239
2021	1,276
2022 and thereafter	5,011
	$ 9,126

On January 29, 2018, the Company and Verizon entered into a settlement agreement to resolve the ongoing dispute and litigation with Verizon, which is a CABS customer of the Company. The settlement agreement also resolved Verizon’s counter-claims against the Company. Pursuant to the settlement agreement, Verizon made a lump sum payment to the Company on February 8, 2018 of $4,400. Following receipt of the $4,400 payment, the Company will issue to Verizon bill credits with respect to other CABS amounts previously billed to Verizon, which were previously reserved and comprised the majority of the allowance for CABS revenue as of year-end. The settlement agreement also specifies certain term for the Company's CABS billings to Verizon prospectively. The Company will continue to assess collectability of its outstanding CABS accounts receivable, including amounts due under this settlement agreement.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of disclosure controls and procedures

Our management, with the participation of our Chief Executive Officer and our 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 Annual Report on Form 10-K. 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 Annual Report on Form 10-K, 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.

Management's Annual Report on Internal Control Over Financial Reporting

This Annual Report on Form 10-K does not include a report of management's assessment regarding internal control over financial reporting or an attestation report of our registered public accounting firm as permitted in this transition period under the rules of the SEC for newly public companies.

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 year ended December 31, 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.

Item 9B. Other Information.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2018 Annual Meeting of Shareholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017.

Codes of Business Conduct and Ethics

Our board of directors has adopted a Code of Business Conduct and Ethics that applies to all officers, directors and employees, which is available on our website at (https://investors.bandwidth.com/corporate-governance/governance-overview) under "Governance Documents". We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding amendments to, or waiver from, a provision of our Code of Business Conduct and Ethics and by posting such information on the website address and location specified above.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2018 Annual Meeting of Shareholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017.

Item 12. Security Ownership of Certain Beneficial Owners and Management Related Stockholder Matters

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2018 Annual Meeting of Shareholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2018 Annual Meeting of Shareholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017.

Item 14. Principal Accountant Fees and Services

The information required by this item is incorporated by reference to our Proxy Statement relating to our 2018 Annual Meeting of Shareholders. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2017.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this report:

1. Financial Statements

    See Index to Financial Statements at Item 8 herein.

2. Financial Statement Schedules

    Schedules not listed above have been omitted because they are not required, not applicable, or the required information is otherwise included.

3. Exhibits

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of the Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended, the Registrant has duly caused this report 10-K to be signed on its behalf by the undersigned, thereunto duly authorized.

BANDWIDTH INC.

Date:	February 26, 2018	By:	/s/ DAVID A. MORKEN David A. Morken Chief Executive Officer and Chairman *(Principal Executive Officer)*
Date:	February 26, 2018	By:	/s/ JEFFREY A. HOFFMAN Jeffrey A. Hoffman Chief Financial Officer *(Principal Accounting and Financial Officer)*
Date:	February 26, 2018	By:	/s/ JOHN C. MURDOCK John C. Murdock Director
Date:	February 26, 2018	By:	/s/ HENRY R. KAESTNER Henry R. Kaestner Director
Date:	February 26, 2018	By:	/s/ BRIAN D. BAILEY Brian D. Bailey Director
Date:	February 26, 2018	By:	/s/ DOUGLAS A. SURIANO Douglas A. Suriano Director

EXHIBIT INDEX

Exhibit number	Description of Exhibit	Form	File No.	Exhibit	Filing Date
2.1	Reorganization Agreement, dated as of November 30, 2016, by and between Bandwidth.com, Inc. and Republic Wireless, Inc.	S-1	333-220945	2.1	10/13/2017
3.1	Second Amended and Restated Certificate of Incorporation.	Q3 10-Q	001-38285	3.1	12/14/2017
3.2	Second Amended and Restated Bylaws.	Q3 10-Q	001-38285	3.2	12/14/2017
4.1	Investors’ Rights Agreement.	S-1	333-220945	4.2	10/13/2017
4.2	Form of Buy-Sell Agreement.	S-1	333-220945	4.3	10/13/2017
10.1	Credit and Security Agreement among Bandwidth.com, Inc., Keybank National Association, Keybanc Capital Markets Inc., Pacific Western Bank, Fifth Third Bank and Silicon Valley Bank, dated as of November 4, 2016.	S-1	333-220945	10.1	10/13/2017
10.2	Form of Indemnification Agreement between Bandwidth Inc. and each of its Executive Officers and Directors.	S-1A	333-220945	10.2	10/30/2017
10.3	2001 Stock Option Plan and forms of awards thereunder.	S-1	333-220945	10.3	10/13/2017
10.4	2010 Equity Compensation Plan and forms of awards thereunder.	S-1	333-220945	10.4	10/13/2017
10.5	Employment Agreement, dated as of October 1, 2008, by and between Bandwidth.com, Inc. and John Murdock.	S-1	333-220945	10.5	10/13/2017
10.6	Employment Agreement, dated as of May 3, 2010, by and between Bandwidth.com, Inc. and W. Christopher Matton.	S-1	333-220945	10.6	10/13/2017
10.7	Employment Agreement, dated as of September 16, 2011, by and between Bandwidth.com, Inc. and Jeff Hoffman.	S-1	333-220945	10.7	10/13/2017
10.8	Employment Agreement, dated as of January 1, 2015, as amended on March 9, 2017, by and between Bandwidth.com, Inc. and David A. Morken.	S-1	333-220945	10.8	10/13/2017
10.9	Employment Agreement, dated as of March 1, 2017, by and between Bandwidth.com, Inc. and Henry R. Kaestner.	S-1	333-220945	10.9	10/13/2017
10.10	Consulting Agreement, dated as of February 22, 2010, by and between Bandwidth.com, Inc. and Carmichael Investment Partners, LLC.	S-1	333-220945	10.10	10/13/2017
10.11	Office Lease, by and between Venture Center LLC and Bandwidth.com, Inc., dated January 22, 2013, as amended to date.	S-1	333-220945	10.11	10/13/2017
10.12	Sublease, by and between Allied Telesis Capital Corporation and Bandwidth.com, Inc., dated December 1, 2015.	S-1	333-220945	10.12	10/13/2017
10.13	Facilities Sharing Agreement, by and between Bandwidth.com, Inc. and Republic Wireless, Inc., dated November 30, 2016.	S-1	333-220945	10.13	10/13/2017
10.14	Transition Services Agreement, by and between Bandwidth.com, Inc. and Republic Wireless, Inc., dated November 30, 2016.	S-1	333-220945	10.14	10/13/2017
10.15	Transition Services Agreement, by and between Republic Wireless, Inc. and Bandwidth.com, Inc., dated November 30, 2016.	S-1	333-220945	10.15	10/13/2017
10.16	Tax Sharing Agreement, by and between Bandwidth.com, Inc. and Republic Wireless, Inc., dated November 30, 2016.	S-1	333-220945	10.16	10/13/2017
10.17	Employee Matters Agreement, by and between Bandwidth.com, Inc. and Republic Wireless, Inc., dated November 30, 2016.	S-1	333-220945	10.17	10/13/2017
10.18	Master Services Agreement, by and between Bandwidth.com, Inc. and Republic Wireless, Inc., dated November 30, 2016.	S-1	333-220945	10.18	10/13/2017

10.19	Master Service Agreement, by and between Level 3 Communications, LLC and Bandwidth.com, Inc, dated March 14, 2008, as amended to date.	S-1	333-220945	10.19	10/13/2017
10.20	Form of Conversion Lock-up Agreement between Bandwidth Inc. and the Key Holders.	S-1A	333-220945	10.20	10/30/2017
10.21	2017 Incentive Award Plan, and forms of award agreements thereunder.	S-1A	333-220945	10.21	10/27/2017
10.22	Office Lease, by and between Keystone-Centennial II, LLC and Bandwidth.com, Inc., dated January 12, 2018.				Filed herewith
21.1	List of subsidiaries of Bandwidth Inc.				Filed herewith
23.1	Consent of Ernst & Young LLP, Independent Registered Public Accounting Firm.				Filed herewith
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.				Filed herewith
31.2	Certification of the Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				Filed herewith
32.1*	Certification of the Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act 2002.				Furnished herewith
101.INS	XBRL Instance Document.				Filed herewith
101.SCH	XBRL Taxonomy Schema Document.				Filed herewith
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.				Filed herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.				Filed herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.				Filed herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.				Filed herewith

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

LEASE TERM SHEET

THIS LEASE TERM SHEET is made a part of the attached Lease Agreement between Landlord and Tenant. Use of the following capitalized terms (indicated in bold type) in this Lease shall be deemed a reference to the information set out below.

- **Landlord:** Keystone-Centennial II, LLC
  a North Carolina limited liability company
  5410 Trinity Road, Suite 215
  Raleigh, NC 27607
  Attn: J. Patrick Gavaghan, Manager
  Email: jpgavaghan@kscdevelop.com

- **Managing Agent:** Keystone Corporation
  a North Carolina corporation
  5410 Trinity Road, Suite 215
  Raleigh, NC 27607
  Attn: Jim Little
  Email: jlittle@kscdevelop.com

- **Tenant:** Bandwidth Inc.
  a Delaware corporation

After Commencement Date:	*Before Commencement Date:*	*Emergency Contact:*
900 Main Campus Drive Suite 500 Raleigh, North Carolina 27606 Attn: General Counsel Email: legal@bandwidth.com	900 Main Campus Drive Suite 500 Raleigh, North Carolina 27606 Attn: General Counsel Email: legal@bandwidth.com	Name: Kade Ross Tel: 919-260-2715 Email: kross@bandwidth.com

- **Landlord Parties:** Landlord, Managing Agent, and their respective officers, directors, managers, employees, and owners.

- **Tenant Parties:** Tenant and its officers, directors, employees, and owners.

- **Brokers:**
  - **Landlord's Broker:** CBRE (Lee Clyburn)
  - **Tenant's Broker:** N/A

- **Landlord's Lender:** As of the date of determination, the beneficiary of any deed of trust which is a first lien against Landlord's interest in the Building.

- **NCSU:** North Carolina State University

- **Campus:** The NCSU Centennial Campus located in Raleigh, NC

- **Execution Date:** The latest date of execution by Landlord and Tenant as reflected on the signature page of this Lease Term Sheet.

- **Land:** Being all of Lot 1, containing 2.612 acres, more or less, as shown on that plat recorded in Book of Maps 2015, Page 145, Wake County Registry.

- **Building:** That building located on the Land consisting of approximately 104,998 rentable square feet, identified as "*Center for Technology and Innovation*", and having an address of 1010 Main Campus Dr., Raleigh, NC. As used in this Lease, the term "Building" shall also include the Land and all other improvements, now located or subsequently constructed, on the Land.

- **Premises:** 40,035 rentable square feet (approx.) in the Building consisting of

  -- 31,532 rentable square feet (approx.) on the third floor (the "***Third Floor Space***")
  -- 8,503 rentable square feet (approx.) on the second floor (the "***Second Floor Space***")

  all as outlined on ***Exhibit A*** attached to this Lease.

- **Parking Spaces:** 160 unreserved parking spaces

- **Permitted Use:** General business office, along with other lawful uses reasonably related to or incidental to such specified use.

- **Improvements:**
  - **Building Improvements:** Described on ***Exhibit C*** attached
  - **Tenant Upfit:** The interior space improvements for the Premises as reflected in the Approved Plans & Specs.
  - **Plans & Specs:** The proposed plans and specifications for the Tenant Upfit.
  - **Approved Plans & Specs:** As defined in ***Exhibit D***
  - **Plans & Specs Approval Deadline:** March 1, 2018
  - **TU Budget:** The proposed budget for the Tenant Upfit.
  - **Approved TU Budget:** As defined in ***Exhibit D***
  - **TU Budget Approval Deadline:** 30 days after the Plans & Specs have been mutually approved.
  - **Tenant Upfit Allowance:** $1,921,680

- **Term:** From Commencement Date through Expiration Date.
  - **Commencement Date:** The Execution Date
  - **Delivery Date:** The date on which Landlord delivers possession of the Premises to Tenant, which shall be no later than five business days after the Approved Plans & Specs have been agreed upon.
  - **Rent Commencement Date:** The earlier of: (i) September 1, 2018; and (ii) five business days after the CO Date (as later defined).
  - **Expiration Date:** 84 months from the Rent Commencement Date
  - **Renewal Option:** As described in ***Exhibit B***

- **Rent:**
  - **Base Rent:** Described in ***Exhibit E*** attached
  - **Per Diem Rent:** $3,308.45/day
  - **Additional Rent (TICAM):** Described in ***Section 5.2***
  - **Base Year:** Calendar year 2018
  - **Tenant's Proportionate Share:** The percentage obtained by dividing the rentable square feet of the Premises by the rentable square feet of the Building, as those figures may vary from time to time resulting from physical changes in the size of the Premises and/or Building, or changes in the character of space within the Building, which, as of the Commencement Date is 38.13%.
  - **Holdover Rent Multiple:** 1.5

- **Security Deposit Amount:** N/A

- **Services:**
  - **Standard Work Week:** 7:00 a.m. to 6:00 p.m., Monday through Friday (excluding national or state holidays)
  - **After Hours Utility Charge:** The lesser of Landlord's actual hourly costs to provide overtime HVAC and $35.00/hr. for the first five years of the Term and $40.00/hr. for the remainder of for HVAC use outside of the Standard Work Week

- **Rules & Regulations:** The rules and regulations described on ***Exhibit F*** attached, as may be subsequently supplemented and modified by Landlord as provided in this Lease.

- **Insurance:**
  - **Tenant Liability Coverage:** $10,000,000.00 Combined Single Limit;
  - **Landlord Liability Coverage:** $10,000,000.00 Combined Single Limit
  - **Business Interruption Insurance Coverage:** 12 months Base Rent

- **Interest Rate:** 12.0% per annum

- **Guarantor(s):** ***N/A***

- **Exhibits:**
  A - Premises Description
  B - Renewal Option
  C - Building Improvements
  D - Tenant Upfit
  E - Base Rent
  F - Rules and Regulations
  G - Radioactive Materials/Radioactive Equipment Requirements
  H - Lease Memorandum
  I - Janitorial Service Schedule
  J - Generator

LANDLORD:

Keystone-Centennial II, LLC,
a North Carolina limited liability company

By Its Manager:

Keystone Corporation,
a North Carolina corporation

By: _____________ (SEAL)
Name: James C. Little
Title: COO & CFO
Date: January ___, 2018

TENANT:

Bandwidth Inc.,
a Delaware corporation

By: ___________________________ (SEAL)
Name/Title: David A. Morken, Chief Executive Officer
Date: January ___, 2018

Tenant's execution of this Lease shall be deemed an offer to lease and shall not be deemed accepted by Landlord until this Lease is executed by Landlord and a counterpart original returned to Tenant.

- **Insurance:**
  - **Tenant Liability Coverage:** $10,000,000.00 Combined Single Limit;
  - **Landlord Liability Coverage:** $10,000,000.00 Combined Single Limit
  - **Business Interruption Insurance Coverage:** 12 months Base Rent

- **Interest Rate:** 12.0% per annum

- **Guarantor(s):** ***N/A***

- **Exhibits:** ***A - Premises Description***
  B - Renewal Option
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  D - Tenant Upfit
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LANDLORD:

Keystone-Centennial II, LLC,
a North Carolina limited liability company

By Its Manager:

Keystone Corporation,
a North Carolina corporation

By: ___________________________ (SEAL)
Name: James C. Little
Title: COO & CFO
Date: January ___, 2018

TENANT:

Bandwidth Inc.,
a Delaware corporation

By: ___________________________ (SEAL)
Name/Title: David A. Morken, Chief Executive Officer
Date: January 12, 2018

Tenant's execution of this Lease shall be deemed an offer to lease and shall not be deemed accepted by Landlord until this Lease is executed by Landlord and a counterpart original returned to Tenant.

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "*Lease*") is entered into as of the Execution Date between Landlord and Tenant. Landlord, in consideration of the rents and covenants to be kept and performed by Tenant, leases to Tenant that certain property and improvements, more specifically described below, upon the following terms and conditions:

1. DEFINITIONS & RULES OF CONSTRUCTION.

1.1. Definitions. In addition to other terms defined in the Lease Term Sheet and elsewhere in this Lease, the following capitalized words and phrases shall have the indicated meanings in this Lease unless the context otherwise requires:

"***ADA***" refers to Title III of The Americans with Disabilities Act, Public Law 101-336 (July, 1990).

"***Advance Payments***" refers to the monthly payments of estimated Additional Rent paid by Tenant to Landlord as described in ***Section 5.2.3***.

"***Alterations***" means alterations, additions, or improvements in or to the exterior or interior of the Premises other than the Tenant Upfit.

"***Approved Plans & Specs***" is defined ***Exhibit D***.

"***Approved TU Budget***" is defined ***Exhibit D***.

"***Binding Arbitration***" refers to an arbitration proceeding to be conducted in accordance with the terms of ***Section 31.8***.

"***Change Order***" is defined in ***Exhibit D***.

"***CO***" means a certificate of occupancy issued by the City of Raleigh.

"***CO Date***" means the date the CO is issued for the Premises after completion of the Tenant Upfit.

"***Common Areas***" refers to those common areas of the Building necessary for ingress, egress, and parking. These areas include lobbies, restrooms, halls, stairways, drives, sidewalks and parking areas, along with any other areas which Landlord may, but is not obligated to, designate for common use by tenants.

"***Deed of Trust***" refers to the Landlord's Lender's security instrument, as of the date of determination.

"***Environmental Laws***" means any federal, state, or municipal law, ordinance, or regulation, now or subsequently enacted, relating to the existence, use, generation, storage, transportation, or disposal of Hazardous Substances and/or other environmental conditions.

"***Expenses***" means all direct costs of operation and maintenance of the Building as determined by GAAP, including those described in ***Section 5.2.1***.

"***Event of Default***" is defined in ***Section 17.1***.

"***GAAP***" refers to generally accepted accounting principles, consistently applied.

"***Ground Lease***" refers to that "*Ground Lease Agreement*", dated August 13, 2015, entered into by The Board of Trustees of the Endowment Fund of North Carolina State University, as ground lessor, and the Landlord, as tenant.

"***Hazardous Substances***" means flammables, explosives, radioactive materials, asbestos, polychlorinated biphenyls (PCBs), chemicals known to cause cancer or reproductive toxicity, pollutants, contaminants, hazardous wastes, toxic substances or related materials, petroleum and petroleum products, biological and medical wastes, samples, or substances, and substances declared to be hazardous or toxic under any law or regulation now or, following such enactment or promulgation, hereafter enacted or promulgated by any governmental authority. "*Hazardous Substances*" shall also include any mold, fungus, or spores, if such mold, fungus, or spores poses a risk to human health or the environment, whether or not such is classified as a "hazardous material" under any Environmental Laws.

"***Insolvency Proceeding***" refers to: (i) Tenant's assignment for the benefit of creditors; (ii) Tenant's written admission of an inability to pay its debts as they become due or failure, generally, to pay its debts as they become due; (iii) Tenant's filing or consenting to the filing of any petition in bankruptcy, reorganization, or other proceeding under the Federal Bankruptcy Act or any other law, now or subsequently in effect, relating to the reorganization or the arrangement or readjustment of its debts; (iv) Tenant's consent to the appointment of a receiver, liquidator, or trustee for any of its properties; (v) the entry of a court order appointing a receiver, liquidator, or trustee for all or a substantial part of Tenant's property; or (vi) any other voluntary or involuntary act of insolvency by Tenant.

"***Reasonable attorneys' fees***" refers to those fees actually charged by the attorney based upon time actually spent, at customary and reasonable charges normally incurred for those type of services, as opposed to any statutory presumption which may then be in effect.

"***Statement***" refers to Landlord's itemized statement of any Additional Rent due from Tenant.

"***Successor***" refers to the successor to Landlord's interest in the Premises, whether by sale, lease, foreclosure, or in any other manner.

"***TUA Percentage***" refers to that percentage of the TU Costs to be funded by the Tenant Upfit Allowance, which shall be that fraction (expressed as a percentage) having a numerator equal to the Tenant Upfit Allowance and a denominator equal to the total TU Costs reflected in the Approved TU Budget.

"***TU Costs***" refers to the costs and expenses incurred in designing, permitting, and constructing the Tenant Upfit.

1.2. Rules of Construction. The following rules shall be followed in interpreting the provisions of this Lease: (a) all attached Exhibits are incorporated into this document by reference and are made a part of this Lease. The inadvertent failure to attach any Exhibit described in this Lease to the fully executed Lease shall not render this Lease invalid, incomplete, or ineffective in any way. Upon notice from one party to the other, Landlord and Tenant shall cooperate in good faith to provide any missing information regarding the missing Exhibit, and each shall append the missing Exhibit to their respective executed original of this Lease. The term "*Lease*" shall be deemed to include all such Exhibits and any other documents expressly incorporated, by reference, into this Lease; (b) this Lease constitutes the entire and exclusive agreement between the parties on this subject and supersedes any and all prior agreements, arrangements, and understandings, whether written, oral, electronic, or otherwise, between the parties on this subject; (c) all words and phrases shall be construed to include the singular or plural number, and the masculine, feminine, or neuter gender, both as the context requires; (d) the captions and headings are for convenience only and in no way define, limit, or describe the scope or intent of any provisions of this Lease; (e) all references to "*Sections*" are references to sections of this Lease unless some other reference is established; (f) the term "*include*" or "*including*" shall be deemed to mean "*without limitation*"; (g) this Lease may be executed in any number of counterparts with the same effect as if all parties had signed the same document. All counterparts shall be construed together and shall constitute one Lease; (h) any statutory reference in this Lease shall include a reference to any successor to such statute and/or revision thereof; (i) any reference to an agreement shall, unless otherwise indicated, include a reference to such agreement as amended, restated, or otherwise modified from time to time; (j) this Lease shall be construed as having been drafted by both parties, jointly, and not in favor of or against one party or the other; (k) the term "*person*" and words importing persons shall include firms, associations, partnerships, joint ventures, trusts, corporations, limited liability companies, public and governmental bodies, and other legal entities, agencies, or instrumentalities, as well as natural persons; (l) this Lease shall be deemed executed and completed in North Carolina and, along with all matters (including torts) relating to or arising out of this Lease or the relationship of the parties under this Lease, shall be construed in accordance with the laws of North Carolina, without giving effect to its conflict of laws principles; (m) all accounting terms not otherwise specifically defined in this Lease shall be construed in accordance with GAAP; (n) whenever an action to be taken under this Lease must be "*reasonably*" approved or is subject to "*reasonable*" consent, acceptance, or approval, "*reasonably*" and "*reasonable*" shall, in each instance, mean such consent/acceptance/approval shall not be unreasonably withheld, conditioned, or delayed. If a party's consent/acceptance/approval is not so qualified, that party may withhold its consent/approval in its sole discretion; and (o) when used in reference to this Lease, the term "*termination*" shall include both an early termination of this Lease and/or an expiration of the Term, as applicable.

2. PREMISES.

2.1. **<u>Premises</u>.** The property leased to Tenant is the Premises located in the Building as described in the Lease Term Sheet. The term "*Premises*" shall consist of only that interior space located within the perimeter described on ***Exhibit A*** (including the interior portions of the wall surfaces, ceiling, and floor). The Premises shall not include the roof, roof membrane, or any exterior wall surfaces (other than exterior glass), and, except as may otherwise be provided in this Lease, Tenant shall have no right to occupy or otherwise use those areas except as contemplated by the Tenant Upfit or as otherwise reasonably approved by the Landlord, in writing.

2.2. **<u>Common Area</u>.** The Premises are leased to Tenant together with a non-exclusive license to use the Common Areas. Tenant shall have no parking spaces marked exclusively for its use and shall observe restricted parking areas designated by Landlord; provided that Landlord shall not oversubscribe parking within the parking areas serving the Building nor otherwise do or permit anything that would unduly interfere with the express parking rights granted to Tenant under this Lease. The parking area shall be gated. Landlord does not grant any easement for light, air, or view. Provided they do not materially affect Tenant's use of the Premises, access or parking rights, Landlord, from time to time, may change the size, location, nature, and use of any of the Common Areas, convert Common Areas into leasable areas, construct additional parking facilities (including parking structures) in the Common Areas, and increase or decrease Common Area land and/or facilities. Landlord shall use all commercially reasonable efforts to minimize any impact on Tenant's business operations in the Premises, access, and/or parking rights during Landlord's exercise of the foregoing rights. Tenant acknowledges that such activity may result in inconvenience to Tenant. Tenant shall not unreasonably interfere with the rights of Landlord, other tenants or any other person entitled to use the Common Areas for the purposes for which those areas were designed.

2.3. **<u>Right to Relocate</u>.** ***Intentionally Omitted***

3. TERM.

3.1. **<u>Duration</u>.** Subject to a prior termination as provided in this Lease, this Lease shall be binding and effective as of the Execution Date and shall remain in effect for the Term. Landlord shall deliver the Premises to Tenant on the Delivery Date.

3.2. **<u>Early Occupation</u>.** ***Intentionally Omitted***

3.3. **<u>Option to Renew</u>.** Tenant shall have one option to renew this Lease as provided in ***Exhibit B*** attached.

4. CONDITION AND USE OF PREMISES.

4.1. <u>Condition of Premises</u>.

4.1.1. *<u>Exclusion of Representations</u>*. Except as expressly provided in this Lease (e.g. ***Section 7.6***) , none of the Landlord Parties or Landlord's agents has made any representations with respect to the Premises, the Building, or any other tenants (past, present, or future) that are not set forth in this Lease. Tenant represents that it has made or will, prior to occupancy, make its own inspection of and inquiry regarding the condition of the Premises and the Building and is not relying on any representations of the Landlord Parties or Landlord's Broker that are not set forth in this Lease. Except as otherwise provided in this Lease, taking possession of the Premises by Tenant shall be conclusive evidence, as against Tenant, that: (i) Tenant accepts the Premises and the Building (including the Common Areas) "*as is*" subject to Landlord's completion of any improvements or construction work or maintenance or repair work provided in this Lease and latent defects; (ii) the Premises contains the number of rentable square feet reflected in the Lease Term Sheet; and (iii) the Premises and the Building (including the Common Areas) were in good and satisfactory condition at the time of taking possession and suitable for the Permitted Use.

4.1.2. *<u>Limited Representations</u>*. Notwithstanding the preceding Section to the contrary, Landlord represents that, to the best of its knowledge:

(a) as of the Execution Date, except for Hazardous Substances (as later defined) used by other tenants in connection with their operations at the Building, which Landlord believes is in compliance with all Environmental Laws (as later defined), (i) it has not brought or permitted any Hazardous Substances to be brought onto the Premises or the Building; and (ii) neither the Premises nor the Building contains any Hazardous Substances (as later defined) or is in violation of any Environmental Laws (as later defined); and,

(b) as of the Delivery Date, to the best of its knowledge: (i) the Building (including the Premises) and the Common Areas will comply with all applicable legal requirements of any governmental or quasi-governmental body (including the ADA); and (ii) all Building systems will be in good working order and condition.

4.2. <u>Use of Premises</u>. The Premises shall be used and occupied by Tenant for the Permitted Use and for no other purpose without Landlord's prior written consent. Tenant may not use any of the Premises or the Common Areas for any illegal or unlawful purpose and may not cause or permit a nuisance to be created or maintained on the Premises including noises of such a level as to unreasonably disturb others in the Building or neighboring properties. Upon discovering any unlawful use within the Premises, Tenant shall, to the extent in Tenant's control, immediately take action to halt that activity. Tenant will be responsible for resolving any EMF interference or wireless internet service interference caused by Tenant's equipment, and, upon Landlord's request, may be required to password-protect its Wi-Fi service. Landlord shall similarly require any other tenant or occupant of the Building to resolve any EMF interference or wireless internet service interference caused by the installations of such other tenant or occupant and affecting Tenant's systems. Tenant's use of the Premises and the Common Areas shall comply with the Rules & Regulations and all use restrictions applicable to subtenants under the terms of the Ground Lease. Tenant's specific use of the Premises (as opposed to general office use) may not increase the fire insurance premiums on the Building or make that insurance unavailable to Landlord.

4.3. <u>Compliance</u>. Throughout the Term of this Lease, Tenant shall comply with:

(a) all applicable legal requirements of any governmental or quasi-governmental body (including City, County, State, and Federal boards) having jurisdiction respecting any operation conducted on the Premises by Tenant or a third party for whom Tenant is responsible or any equipment installations or other property placed upon, in, or about the Premises by Tenant

(b) the terms of the Ground Lease applicable to subtenants and all rules and regulations of NCSU and the NCSU Public Safety Office in effect during the Term (including all hazardous materials regulations, signage regulations, and other restrictions, guidelines or regulations affecting the Campus).

Tenant and any subtenant of the Premises shall adhere to all reasonable emergency plans (including plans relating to fire, safety, events of terrorism, and any other contingencies) of NCSU. Tenant's compliance shall be for the benefit of Landlord and NCSU. Upon discovering any violation of this Section, Tenant shall promptly take all necessary remedial action.

4.4. ADA Compliance. To the extent after the Delivery Date: (i) the Premises do not comply with the ADA; (ii) such non-compliance relates to or arises out of Tenant's particular use, operations, or Alterations; and (iii) modification of the Premises is required in order to comply with law, Tenant shall, at its sole expense, take all reasonable steps to modify the Premises to comply with the ADA. Otherwise, Landlord shall, subject to the provisions of ***Section 4.3,*** be responsible for keeping the Premises, the Common Areas, and the Building (exclusive of Alterations) in compliance with the ADA.

4.5. Licenses. Throughout the Term of this Lease, Tenant shall obtain and maintain all licenses, permits, and other governmental approvals necessary for the operation of the business conducted by it at the Premises.

4.6. Building Changes/Additions. Landlord may at any time and without liability to Tenant change, alter, remodel, or remove any of the improvements in the Common Areas, and install in or through the Premises any wiring, piping, ducts, or conduits necessary for the service of the Premises, or other buildings in the Building. Notwithstanding the foregoing, all such wiring, piping, ducts or conduits shall be installed behind walls, under floors, and/or above ceilings in the Premises and shall not interfere with installations previously made by Tenant in such areas or unreasonably interfere with Tenant's use of the Premises or the Common Areas or reduce the usable square footage of the Premises. Further, Landlord shall not materially impair, and shall use all commercially reasonable efforts to minimize any impact on, Tenant's business operations in the Premises during and as a result of Landlord's exercise of the foregoing rights, including coordinating any necessary shut-down or interruption in utilities with Tenant to the fullest extent possible.

5. RENT.

5.1. Base Rent. Commencing on the Rent Commencement Date and continuing for the remainder of the Term, Tenant shall pay to Landlord the Base Rent set out in ***Exhibit E.*** The Installment Amounts of Base Rent (as reflected in ***Exhibit E***), as well as payments of Additional Rent, shall be payable without previous demand, and except as expressly provided otherwise in this Lease, without offset or deduction, in advance, on or before the first day of each month, at the office of Landlord at the address given in the Lease Term Sheet or such other address as Landlord notices Tenant in writing. If the Rent Commencement Date is a day other than the first day of the month or if the Term ends on a day other than the last day of the month, Base Rent for any partial month of the Term shall be pro-rated on a per diem basis.

5.2. Additional Rent. Tenant shall pay Landlord Additional Rent in amounts and in the manner as described below:

5.2.1. *Expenses.* "**Expenses**" shall include all direct costs of operation and maintenance of the Building as determined by GAAP and shall include by way of illustration:

(i) *Taxes.* Amounts paid by Landlord for real estate taxes, special assessments, or any governmental charges which may be levied or assessed against the Building. "***Taxes***" shall specifically exclude Landlord's income and/or franchise taxes and tax penalties, and/or any other taxes that are personal to Landlord, such as inheritance, estate or gift taxes.

(ii) *Utilities.* Amounts paid by Landlord for electricity, heating and air conditioning, telephone in the elevator, and other utilities for the Common Areas of the Building. Amounts paid by Landlord for water and sewage services used at the Building, including the Common Areas, the Premises, and all other tenant space unless separately metered or specifically attributable to another tenant.

(iii) *Insurance*. Amounts paid by Landlord for all premiums for insurance required by this Lease to be maintained by Landlord or otherwise deemed by Landlord to be reasonable property and liability insurance coverage with respect to the Building or as otherwise required to be maintained by Landlord's Lender.

(iv) *Maintenance*. The reasonable cost of wages, including associated payroll taxes, insurance and fringe benefits, of persons employed by Landlord in connection with the operation or management of the Building, with such costs allocated to the Building in proportion to share of such person(s)' overall time allocated to the Building, including management personnel at or below the level of Building manager, secretaries, security guards (if any), janitors, carpenters, painters, laborers and other office, maintenance, security, janitorial or general cleaning personnel. The reasonable cost of services furnished by independent contractors with respect to the operation, repair, maintenance, security or cleaning of the Building. The reasonable cost of materials, tools and equipment, including toilet room supplies, fluorescent and incandescent lamps, filters, cleaning supplies and maintenance items, purchased by Landlord in providing Services (as later defined).

(v) *Operating Expenses*. Reasonable amounts paid by Landlord for all direct costs of operations and maintenance (not otherwise specified above) as determined by GAAP, including payroll expense associated with personnel directly providing operational and maintenance services, fuel, security, management fees (not to exceed 5% of total rents payable to Landlord by tenants and occupants of the Building in any given year), legal and professional fees (except as specifically excluded), maintenance costs (including Building and grounds), plumbing, heating, electrical, air conditioning and cleaning (including janitorial services, supplies, rubbish and snow removal).

"*Expenses*" shall specifically exclude costs incurred for making installations, replacements or alterations to the Building which under GAAP are properly classified as capital expenditures; costs of correcting latent or structural defects in the Building (including defects in the roof or Building systems, such as the HVAC), Common Areas or Premises; costs of capitalized equipment; depreciation on the Building or any Building equipment or systems; ground lease rental payments, loans, and/or mortgage principal and interest; expenses associated with mortgaging, refinancing or selling the Building or incurred in connection with a dispute with any lender or purchaser of the Building (including legal or professional fees incurred in connection with such); costs of negotiating or enforcing leases or incurred in connection with disputes with any tenants or occupants of the Building (including legal or professional fees incurred in connection with such); audit and consulting fees; marketing and leasing expenses including broker commissions and costs of leasehold improvements made or allowances in thereof; Landlord's "overhead" or general administrative expenses; expenses otherwise reimbursable by specific tenants or occupants of the Building or other third parties or through insurance or condemnation proceeds; costs resulting from casualties or condemnations; any expenditure for goods and services paid to any entity related to, or affiliated with, the landlord or the principals of the landlord, in excess of the fair market value thereof; expenses for the purpose of renovating or restoring any tenant space in the Building; costs arising from the negligence or intentional misconduct of Landlord; charitable or political contributions of Landlord; costs of executive compensation (including salaries or benefits of any kind) for any personnel above the level of Building manager; costs to operate any commercial concession in the Building; costs of paintings, sculptures or artwork for the Building; costs arising from the failure of Landlord to comply with all laws regarding the Building or the breach of this Lease by Landlord; tax penalties or interest charged as a result of Landlord's failure to timely pay any amounts due or resulting from Landlord's negligence or willful misconduct; costs of investigating or remediating Hazardous Substances or toxic materials at the Building (provided such shall not limit Landlord's rights under ***Section 28***); and any costs attributable to services (or above-standard service levels) that are not generally provided or available to all tenants and occupants of the Building, or that specifically are not available to Tenant, or which are generally available only at additional expense.

5.2.2. Gross Up. In any calendar year (including the Base Year) in which the leasable area of the Building is not fully occupied for the entire year, the Expenses (other than Taxes and Insurance (described above) and any other Expenses that do not vary with the level of occupancy) shall be "*grossed up*" as if the Building were 100% occupied for the entire calendar year. The gross up shall be based upon Landlord's reasonable projections of the variable Expenses expected to be incurred if the Building were totally occupied for the entire calendar year, as determined under GAAP and in accordance with sound commercial office building management practices. Landlord shall have the duty during the Term to be reasonable in its selection of persons providing services to the Building, taking into consideration the services required and their cost within the Raleigh, North Carolina area.

5.2.3. **Payment**. Starting with the 2019 calendar year and for each subsequent calendar year during the Term, if the Expenses incurred by Landlord for the Building for that year exceed the aggregate Expenses for the Building in the Base Year, Tenant shall pay to Landlord, as Additional Rent, Tenant's Proportionate Share of the Expenses incurred by Landlord in that calendar year. If the Term does not cover an entire 12 months for a particular calendar year, the amount of Additional Rent due from Tenant for that calendar year will be adjusted proportionately on a per diem basis. With each Base Rent payment during the Term, Tenant shall, as applicable, pay Landlord an Advance Payment which shall equal one-twelfth of the amount of Tenant's Proportionate Share of the Additional Rent, if any, anticipated for the upcoming calendar year as a credit against Additional Rent due for that calendar year. At any time during the calendar year Landlord may increase the amount of the monthly Advance Payments for that year to account for unexpected increases in Expenses by providing at least 30 days' prior written notice to Tenant; provided that (i) Landlord shall not make more than one such mid-year adjustment in any calendar year, (ii) Landlord must have a reasonable basis for such increase, and (iii) such increase shall not exceed 10% of the Advance Payments originally set for that year. All Advance Payments shall be credited to Tenant's account for the applicable calendar year. Within 120 days after the end of each calendar year, Landlord shall send Tenant a Statement as to the Additional Rent due for the preceding calendar year, which shall include a reasonable description of any gross up calculations and all Advance Payments to be credited to Tenant. Any deficiency in the Advance Payments shall be noted in the Statement and paid by Tenant within 30 days after it receives or is deemed to have received the Statement. Any excess in the Advance Payments shall be applied to the Additional Rent obligation otherwise due in the ensuing calendar year, or, if this Lease has terminated and the excess has not been otherwise applied by Landlord to cure an Event of Default, that excess shall be refunded to Tenant with the Statement for that year. Tenant's obligation to pay Additional Rent and Landlord's obligation to refund any excess Advance Payments, as the case may be, accruing through the date termination of this Lease shall survive that termination.

5.2.4. **Inspection of Books and Records**. At any reasonable time, but no more than once in a calendar year, Tenant shall be entitled to inspect all of Landlord's records reasonably necessary to determine that all charges have been correctly allocated to Tenant. Tenant must give Landlord at least five business days' prior written notice before exercising this inspection right. The inspection shall be conducted at Landlord's business office during Landlord's regular business hours and shall be limited to the two immediately preceding calendar years unless a material error is found in one or more line items, in which case the review of such line items shall extend to the end of the applicable statute of limitations. Tenant shall be entitled to obtain an audit by an independent certified public accountant or such representative of Tenant as Tenant shall otherwise select (provided that such representative shall not, in any event, be compensated on a recovery or contingency fee basis and shall otherwise be reasonably acceptable to Landlord) to determine the accuracy of Landlord's certification of the amount of Additional Rent charged to Tenant. Tenant shall bear the total cost of any such audit, including reimbursing Landlord for any out-of-pocket expenses (e.g., photocopying charges, accountant's fees, etc.) reasonably incurred by Landlord in connection with Tenant's audit. Notwithstanding the preceding to the contrary, if the audit reveals that Tenant's Proportionate Share of Expenses for such calendar year was overstated by more than 10%: (i) Landlord shall reimburse Tenant for the reasonable costs incurred by Tenant in conducting the audit (to be reimbursed to Tenant within 30 days following Landlord's receipt of written demand from Tenant, along with reasonable supporting documentation); and (ii) Tenant shall have no obligation to reimburse Landlord for its out-of-pocket expenses incurred in connection with such audit. Any deficiency/overpayment determined by the audit shall be paid by/refunded to Tenant within 30 days after acceptance of the results of the audit by Landlord, which shall not be unreasonably withheld or delayed. In no event shall Tenant have any right to examine Landlord's books and records while Tenant is in default under the terms of this Lease. As an express condition of Tenant's rights under this Section, Tenant shall, and shall use commercially reasonable efforts to ensure that its auditors shall, keep the existence of the audit, any and all financial information obtained from the audit, and the results of its audit confidential except to the extent necessary to resolve any dispute between Landlord and Tenant relating to the Expenses or to satisfy public reporting requirements. A material breach of this confidentiality obligation shall automatically be an Event of Default (i.e., Tenant shall have no right to notice of, or right to cure, that breach) and Tenant shall forfeit all rights to conduct any further audits pursuant to this Section.

5.2.5. Dispute in Additional Rent. If Tenant disputes any billing for Additional Rent, at any time prior to the date that is more than 18 months after Tenant's receipt of the Statement in dispute, Tenant may serve written notice on Landlord demanding Binding Arbitration of the dispute. As an express condition precedent to invoking Binding Arbitration, Tenant must have paid the entire amount of Additional Rent set out in the Statement (including the amount disputed) to Landlord, subject to any later adjustment as may be ordered in the arbitration decision. Failure to timely pay the Additional Rent shall render any demand for arbitration absolutely void and shall constitute an Event of Default. If there is no timely demand for Binding Arbitration and/or payment as contemplated in this Section, the applicable Statement rendered by Landlord shall be deemed correct in all respects and shall no longer be open to challenge by Tenant.

5.3. Stamp, Use, Sales Tax Adjustment. Should any governmental authority having jurisdiction over the Premises declare or otherwise assess against Landlord any tax on Tenant's rents, lease, or leasehold whether designated as a stamp tax, sales tax, ad valorem tax, use tax or otherwise (other than income taxes or other taxes excluded ***in Section 5.2.1(i)***), then all taxes so charged shall be Tenant's obligation and shall be paid by Tenant directly to the taxing authority or shall be paid to Landlord in reimbursement.

5.4. Late Charges. Tenant's failure to timely pay Rent may cause Landlord to incur unanticipated costs. If any payment of Rent is not received within 10 days of its due date, Tenant shall pay Landlord a late charge equal to 2.5% of the overdue amount. Tenant acknowledges that such late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of such late payment. The payment of late charges shall not excuse or cure any default by Tenant under this Lease. Interest shall not be payable on late charges to be paid by Tenant under this Lease. Notwithstanding the preceding, so long as the Rent is paid by Tenant within five business days of its receipt of written notice of such delinquency, Tenant shall not be responsible for late charges for such delinquency the first time it occurs in any 12-month period; provided that this waiver of late charges shall not, in any event, apply after the third delinquency during the Term.

5.5 Controllable Expenses. Notwithstanding anything in this Lease to the contrary, during the period of time when Tenant is responsible for payment of Expenses, Tenant will be responsible for its Proportionate Share of Taxes, insurance premiums, utilities, Centennial Campus Maintenance Payments, snow removal, and other costs for services or materials for which there is only one available source or provider for such service or materials at the time the services/materials are needed ("***Uncontrollable Expenses***"), without regard to the level of increase in any or all of the above in any year or other period of time. Tenant's obligation to pay all other Expenses that are not Uncontrollable Expenses ("***Controllable Expenses***") shall be limited to the Controllable Expenses in the Base Year increased each calendar year thereafter by 5% per annum on a cumulative basis. For purposes of this calculation, Controllable Expenses shall be determined after application of the "*gross up*" contemplated by ***Section 5.2.2***.

6. SECURITY DEPOSIT/FINANCIALS.

6.1. Security Deposit. ***Intentionally Omitted***

6.2. Financials. Upon Landlord's request (which, except in connection with a potential refinancing or sale of the Building, will not be more frequent than once in any 12-month period), Tenant shall provide Landlord with a copy of Tenant's most recent financial statements (to include, at least, a current balance sheet and statements of profit and loss and cash flow, all prepared in accordance with GAAP, consistently applied) which shall be certified by an officer/manager of Tenant and such other financial information concerning Tenant as reasonably requested by Landlord. Landlord agrees to hold that financial information in confidence and to use the same degree of care in protecting the confidentiality of that information as it uses in protecting its own confidential information, which shall not be less than a reasonable degree of care. Notwithstanding anything to the contrary contained in this ***Section 6.2***, for as long as Tenant is a publicly traded company, it shall not be required to provide the financial information otherwise required under this Section.

7. **IMPROVEMENTS.**

7.1. **Building Improvements.** Landlord, at its sole cost and expense, has designed and constructed the Building as reflected in the Building Improvements. Landlord represents that the Building Improvements have been substantially completed in substantial accordance with ***Exhibit C*** and otherwise in a good and workmanlike manner and in substantial compliance with all applicable building, fire, health, sanitary codes and regulations, and other applicable laws.

7.2. **Tenant Upfit.** Tenant shall select the general contractor for constructing the Tenant Upfit (the "***General Contractor***"), which selection shall be subject to Landlord's prior written reasonable approval. The following general contractors are hereby approved by Landlord to be the General Contractor: Inner-tech, Incorporated, BE&K Building Group, LLC, Choate Construction Company, and Barringer Construction, LLC. Once approved by Landlord, the General Contractor shall not be changed without Landlord's prior written reasonable consent. Tenant shall be solely responsible for entering into a construction contract for the construction of the Tenant Upfit with the General Contractor. After the Approved TU Budget has been adopted as contemplated in ***Exhibit D***, Tenant, at its sole cost and expense, shall commence and diligently pursue completion of the Tenant Upfit, allowing no liens to attach either to the Premises or to Tenant's leasehold interest, and so as not to unreasonably disturb or inconvenience other tenants in the Building. All Tenant Upfit shall be constructed in substantial accord with the Approved Plans & Specs, in a good and workmanlike manner, and otherwise in substantial compliance with all applicable building, fire, health, and sanitary codes and regulations, and shall be performed by the General Contractor. At all times during the construction of the Tenant Upfit, Tenant, at its sole expense, shall (or shall cause the General Contractor to) maintain "all-risk" builders risk insurance (including windstorm, hail damage, fire, and vandalism) in a non-reporting, completed value form with Special Cause of Loss. This policy shall: (i) be in an amount not less than the full amount of the total TU Costs reflected in the Approved TU Budget; (ii) name Landlord as the loss payee up to the amount of the Tenant Upfit Allowance funded as of the date of the casualty; and (iii) otherwise be in a form and substance reasonably acceptable to Landlord. Unless otherwise noted in writing in the Approved Plans & Specs or in the applicable Change Order, the Tenant Upfit shall remain and be surrendered with the Premises on termination of this Lease. If the Approved Plans & Specs or the Change Order provides that certain improvements are not to be surrendered, Tenant, at its sole cost, shall, upon termination of this Lease, remove that Tenant Upfit which is not to remain and repair all damage to the Premises or the Building caused by their removal. This removal/repair obligation shall survive a termination of this Lease. Notwithstanding the foregoing, Tenant shall be permitted to remove that personal property as described in ***Section 8.1***.

7.3. **Tenant Upfit Allowance.**

7.3.1. *Funding*. Notwithstanding ***Section 7.2*** to the contrary, Landlord shall contribute the Tenant Upfit Allowance towards the TU Costs incurred by Tenant. Tenant shall be responsible for any and all TU Costs in excess of the Tenant Upfit Allowance. The Tenant Upfit Allowance shall be paid by Landlord in the form of reimbursements to Tenant for TU Costs as incurred (each an "***Upfit Reimbursement***"). Each Upfit Reimbursement shall:

(a) equal: (i) the TUA Percentage times the TU Costs sought to be reimbursed; less (ii) 10% of that result (the "***Retainage***"); and

(b) be made by Landlord within 10 days of its receipt of: (i) Tenant's written request for such; (ii) a copy of the paid invoice(s) for the TU Costs sought to be reimbursed; and (iii) a partial lien waiver from the contractor which provided the services/materials identified in the paid invoice(s), such lien waiver to be in form and substance reasonably satisfactory to Landlord.

The Retainage shall be released to Tenant upon Landlord receiving: (i) Tenant's architect's certification that the Tenant Upfit has been completed in accordance with the Approved Plans & Specs (as may have been modified by any Change Orders); (ii) a final lien waiver from the General Contractor, such lien waiver to be in form and substance reasonably satisfactory to Landlord; (iii) a certification, signed by an officer of Tenant, certifying the total TU Costs incurred in completing the Tenant Upfit; and (iv) a copy of the CO.

7.3.2. _Withholding_. Notwithstanding ***Section 7.3.1*** to the contrary, Landlord may, in its reasonable discretion, nevertheless withhold funding of the Tenant Upfit Allowance to the extent necessary to: (a) satisfy any liens filed in connection with the construction of the Tenant Upfit; and/or (b) correct any Tenant Upfit work which, in Landlord's reasonable opinion, is defective and/or does not comply with the Approved Plans & Specs (as modified by any Change Orders) or applicable building, fire, health, and sanitary codes and regulations; provided that Landlord shall provide notice to Tenant within 10 days of Landlord's decision to withhold funding of all or any portion of the Tenant Upfit Allowance for the purposes set forth in this ***Section 7.3.2***.

7.3.3. _Forfeiture_. The Tenant Upfit Allowance is being given by Landlord on the condition that Tenant fulfills all of its obligations under the Lease for the entire original Term. Upon a termination of this Lease due to an Event of Default occurring prior to the expiration of the entire original Term, the then unamortized portion of the Tenant Upfit Allowance (the "***UTUA***") shall be deemed forfeited by Tenant and recoverable by Landlord from Tenant. The amount of the UTUA shall be calculated by multiplying: (i) the total Tenant Upfit Allowance funded by Landlord; by (ii) a fraction, the numerator being the number of months remaining in the original Term as of the date of the Event of Default and the denominator being 84. This right shall be in addition to other rights and remedies available to Landlord for an Event of Default; but, in no event, shall it entitle Landlord to a "*double recovery*"; i.e., recovery of all Rent due for the entire original Term and recovery of the UTUA.

7.4. **Unused Tenant Upfit Allowance**. Provided Tenant is not in default under the Lease, any portion of the Tenant Upfit Allowance not expended by Landlord pursuant to ***Section 7.3*** (the "***Unused TUA***") up to $600,525.00 of those dollars may be used by Tenant towards funding Tenant's furniture, fixtures, and equipment to be installed/used at the Premises (including installing security, IT, audio-visual, and other telecommunications equipment and/or cabling). Landlord shall reimburse Tenant for such costs within 30 days after Landlord's receipt of Tenant's written request (which shall be accompanied by all reasonable supporting documentation) for reimbursement of such costs.

8. ALTERATIONS, ADDITIONS, AND IMPROVEMENTS.

8.1. **Restrictions**. Tenant shall not make any Alterations without Landlord's reasonable prior written consent. The plans and specifications for any approved Alterations shall be subject to Landlord's reasonable prior written approval and once approved, shall not be materially changed without Landlord's reasonable prior written consent. Tenant shall provide Landlord with a copy of the plans and specifications and estimated construction costs for the Alterations prior to commencing construction. All Alterations shall be: (i) made promptly, in a good and workmanlike manner, and otherwise in substantial compliance with all applicable building, fire, health, sanitary codes and regulations, and other applicable laws; (ii) made so as not to unreasonably disturb or inconvenience other tenants in the Building; and (iii) shall be paid for by Tenant allowing no liens to attach either to the Premises or to Tenant's leasehold interest. Landlord shall have the right to require Tenant to provide such assurances as Landlord shall reasonably require (e.g., bonds, escrows, etc.) to protect Landlord against unpaid work and to require that any work be performed only by duly licensed contractors and subcontractors reasonably approved by Landlord. Upon a termination of this Lease and Landlord's written request, Tenant shall provide Landlord with copies of all unexpired construction warranties related to the Alterations, all of which shall be deemed assigned to Landlord; provided that such assignment shall be deemed "*as is*", without representation or warranty by Tenant of any kind (including any warranty of assignability). Unless otherwise noted in Landlord's written approval of the Alteration, each Alteration shall remain and be surrendered with the Premises on termination of this Lease.

For all Alterations made by Tenant pursuant to *Section 8.2* and all Alterations where Landlord's written approval expressly provides that the Alteration is to be removed by Tenant upon termination, Tenant, at its sole cost, shall remove such Alterations and shall repair all damage to the Premises and/or the Building caused by that removal. In no event, however, shall Tenant remove (or be required to remove) any of the following materials or equipment (which shall be deemed Landlord's property) without Landlord's prior written consent: any power wiring or power panels; casework; fume hood; communications cabling; lighting or lighting fixtures; wall coverings; drapes, blinds or other window coverings; carpets or other floor coverings; heaters, air conditioners, or any other heating or air conditioning equipment; or other similar standard building operating equipment and decorations; provided, however, that in no event shall the foregoing be deemed to include any specialized equipment or trade fixtures brought upon the Premises and used specifically in connection with the Permitted Use, all of which Tenant shall be entitled to remove. This removal/repair obligation shall survive a termination of this Lease. Notwithstanding anything in this Lease to the contrary, Tenant shall be responsible for any ad valorem taxes or increase therein resulting from Alterations made by or at the direction of Tenant.

8.2. Exception. Notwithstanding anything in *Section 8.1* to the contrary, Tenant shall have the right to make Alterations to the interior of the Premises without obtaining Landlord's prior written consent if such Alterations: (i) do not exceed $25,000.00 in cost in any one instance or $100,000.00, in the aggregate, over the full Term; (ii) are non-structural in nature, are not visible from the exterior of the Building, and do not affect any of the Building's systems; and (iii) do not require a governmental permit. At least 10 days before the construction, Tenant must provide Landlord with prior written notice of its intention to make such Alterations (stating in reasonable detail the nature, extent, and estimated cost of such Alterations), together with a copy of the plans and specifications for the Alterations. All of the other provisions of *Section 8.1* shall apply to Alterations made under this Section.

9. SERVICES/PARKING/REPAIRS.

9.1. Services. Subject to Tenant's obligation to pay Additional Rent, after the CO Date, Landlord, at its expense, will cause the following services (the "***Services***") to be furnished to the Premises for the Standard Work Week: (i) subject to any applicable governmentally imposed limits, heating and cooling for the reasonably comfortable use and occupancy of the Premises; (ii) janitorial service as described in the attached ***Exhibit I***; (iii) water for drinking, lavatory, and toilet purposes; (iv) operator-less elevator service; (v) electricity for general office space use (i.e. building standard led lighting and general office machines (excluding production type copiers) and computers); (vi) removal of trash from site receptacles (in accordance with city schedules and regulations). Notwithstanding the preceding to the contrary, Landlord shall not, at any time during the Term, shut off either the electricity or water service to the Premises, have less than one elevator operating for service to the Premises, or prevent the use of the heating and cooling described above (but the use of such service shall be subject to payment of the After Hours Utility Charge) unless, and then only to the extent necessary to: (i) effect needed repairs to the Building; (ii) address an emergency (e.g., a casualty event); or (iii) comply with any NCSU or governmental mandate. The costs for these Services shall be included in "*Expenses*". Any costs incurred by Landlord which result from Tenant's extraordinary usage of the Services or from Tenant's requiring Services at times other than during the Standard Work Week shall be paid by Tenant as Additional Rent. Tenant shall be solely responsible for contracting with each utility service provider for all data, telecommunications, and any other utilities not listed above as being provided by Landlord (each a "***Tenant Provider***"). Each Tenant Provider shall nevertheless be subject to Landlord's prior reasonable approval. Tenant shall not install equipment with unusual demands for any of the Services without Landlord's prior written consent, which Landlord may withhold if it reasonably determines that: (i) the equipment may not be safely used in the Premises; or (ii) current Services cannot adequately serve the equipment. If heat generating machines or equipment shall be used in the Premises by Tenant which materially increase the temperature otherwise maintained by the heating and air conditioning system, Landlord reserves the right to sub-meter those areas and setup a separate account with the applicable utility company. In that event, Tenant shall, upon Landlord's demand, reimburse Landlord for all costs reasonably incurred in purchasing and installing the sub-metering equipment and all utility charges subsequently charged to that account for the remainder of the Term. Tenant shall have immediate access to the use of after-hours heating and air conditioning via activation of the electrical override button located on each thermostat within the Premises. After hours HVAC services shall be charged to the Tenant at the

After Hours Utility Charge. Tenant shall promptly report any interruption of its utility service to Landlord and to the applicable utility service provider. There shall be no abatement or reduction of Rent for such interruption, nor shall such interruption constitute either a constructive or partial eviction, if such an interruption: (i) is for a Tenant Provider service; or (ii) for any other utility service provider, is not caused by Landlord's gross negligence or willful misconduct and does not last for more than five business days. If an interruption is caused by Landlord's gross negligence or willful misconduct and causes the Premises to be untenable, in whole or in part, for more than five business days, Tenant shall receive a rent abatement for each day of interruption on a proportional basis (based upon the square footage of the untenable portion of the Premises).

9.2. <u>Access/Parking</u>. Landlord shall provide Tenant with 24 hours, 7 days a week, 52 weeks a year access to the Premises for Tenant to construct the Tenant Upfit and, thereafter, conduct its business operations according to Tenant's Permitted Use; provided, however, that when the Building is locked, Tenant's employees may access the Building by using a card access system. The Common Areas shall include not less than 294 parking spaces. Tenant shall have non-exclusive access to the sidewalks, entrances, parking lot(s), and driveways serving the Building. Tenant shall have no designated parking spaces and shall observe any restricted parking areas designated by Landlord for specific tenants, customers, handicapped individuals, etc. Landlord shall, at no additional charge, provide Tenant with the Parking Spaces; provided that Tenant shall be responsible for all permit fees charged by NCSU. Tenant shall not permit its employees to use those restricted parking areas or the driveways or entrances within the Building or, without NCSU's prior written consent, the adjacent streets, for the parking or storage of any automobiles, trucks, or vehicles owned or used by them. As reasonably deemed necessary by it, Landlord shall have the authority to further assign or otherwise restrict parking areas for Tenant and the other tenants of the Building and their respective employees. Tenant's use of the parking facilities shall be at Tenant's sole risk, and Tenant acknowledges that Landlord shall have no liability whatsoever for damage to the vehicles of Tenant, its employees, and/or its visitors, or for other personal injury or property damage or loss relating to or connected with the Tenant's, its employees', and/or its invitees' use of the parking facilities serving the Premises.

9.3. <u>Maintenance & Repairs</u>. Landlord, at its expense (all of which shall be included in "*Expenses*"), shall: (i) maintain the Premises, the Building, and the Common Areas in good working order and repair and in compliance with all laws and regulations; (ii) make all interior and exterior structural repairs as and when needed; and (iii) repair or replace all building materials, fixtures, and equipment required for the normal use of the Premises by Tenant. Repairs required of Landlord shall be made within a reasonable time (depending on the nature of the repair needed) after Landlord receives written notice from Tenant, or has actual knowledge, of the need for the repair. Except where the need for the maintenance or repair is attributable to the Landlord Parties' negligence or willful misconduct, the maintenance/repair costs incurred by Landlord shall be included in "*Expenses*". Notwithstanding the preceding to the contrary:

(a) Tenant, at its expense, shall be solely responsible for making all repairs to the Premises, Building, and Common Areas resulting from the construction of the Tenant Upfit and, thereafter, repairing all defects in the Tenant Upfit, whether or not covered by any warranty;

(b) Provided such damage was not caused by Landlord, its agents, employees, or contractors, Landlord shall have no obligation to repair any property on the Premises which Landlord shall have the right to require Tenant to remove from the Premises upon a termination of the Lease or any Alteration made to the Premises by, for, or at the direction of Tenant; and

(c) Tenant shall reimburse Landlord for all expenses incurred by Landlord, along with a 15% overhead fee, in making those repairs arising out of Tenant's or its employees', agents', invitees', or contractors' negligence or willful misconduct. Payment of these expenses/fees shall be paid to Landlord within 30 days after Tenant's receipt of Landlord's written demand for reimbursement (which shall be accompanied by reasonable supporting documentation). Tenant's reimbursement obligation shall be limited to those reasonably incurred expenses (including the specified overhead fee) over the amounts reimbursed by insurance carried by Landlord. Landlord shall make available to Tenant any warranties Landlord has received which are applicable to the repairs to be paid for by Tenant.

9.4. Security. Tenant acknowledges that NCSU provides security for the Campus and Landlord shall have no obligation to provide security services for the Building except as set forth below. The Tenant Upfit shall include exclusive, secured access to the third floor of the Building, card-key security readers at all entrances to the Premises, and other security measures shown on the Approved Plans & Specs. Landlord shall cause the Building Improvements to include card-key security readers at all entrances to the Building and security cameras throughout the Common Areas and a secured hallway between the loading dock and freight elevator and overflow storage room by freight elevator. Notwithstanding anything in this Lease to the contrary, Landlord shall not be liable for any loss or damages suffered by Tenant or anyone else for failing to supply such services or manned traffic control, no matter how caused. In no event shall Tenant be relieved of its duty to maintain security within the Premises.

10. TAXES AND ASSESSMENTS. Landlord shall list the Building for ad valorem tax purposes and shall pay those taxes and applicable assessments of whatever kind or nature assessed against the Building, all of which shall be included in "*Expenses*". Tenant shall pay all taxes and assessments assessed by a third party taxing authority against the Tenant Upfit in excess of the Tenant Upfit Allowance and all of Tenant's personal property located on the Premises, whether affixed or not, and all other taxes, fees, and assessments imposed for Tenant's use of the Premises.

11. SIGNS. Landlord shall include Tenant's name and suite number on: (i) the Building directory(ies) located inside the Building; (ii) a Building-standard suite sign to be located at the entrance to the Premises; and (iii) at Landlord's expense, monument signage with ordering of tenants on a "*first come, first served*" basis. For Tenant's initial listing, the cost of such directory(ies) and suite signage shall be at Landlord's sole expense. Any subsequent changes to directory(ies) and suite signage requested by Tenant shall be paid for by Tenant within 30 days of receipt of Landlord's invoice for actual and reasonable costs relating thereto. Except as contemplated above, Tenant shall not permit, erect, install, or display on its any exterior door, wall, or window of the Premises or anywhere else in or on the Building any sign, lettering, placard, decoration, or advertising material of any kind whatsoever, without Landlord's reasonable prior written consent. All exterior decor and exposed sides of drapes, blinds, shutters, and other window treatments must receive Landlord's prior written reasonable approval.

12. INSURANCE/INDEMNIFICATION.

12.1. Property Insurance. Landlord shall carry full replacement cost, all-risk property damage and hazard/casualty insurance with extended coverage insuring against loss or damage to the Building and/or other improvements with customary deductibles and companies as Landlord in its discretion chooses. The cost of this insurance maintained by Landlord shall be included in "*Expenses*". The policy shall show Landlord as the named insured and Landlord's Lender as an additional insured. Tenant shall carry full replacement cost, all-risk property damage and hazard/casualty insurance with extended coverage insuring against loss or damage to Tenant's Alterations, improvements, furnishings, fixtures, equipment, and other personal property situated in or about the Premises, as well as all exterior glass included in the Premises. Notwithstanding the preceding to the contrary, Landlord shall have no obligation to insure the Tenant Upfit prior to the CO Date.

12.2. Liability Insurance. Tenant shall, at its expense, maintain in effect a commercial general liability policy with coverages not less than the Tenant Liability Coverage. This policy shall: (i) be primary and non-contributing; (ii) contain cross-liability endorsements; and (iii) show Landlord and Managing Agent as additional insureds. Landlord shall maintain in effect a commercial general liability policy with coverages not less than the Landlord Liability Coverage. The cost of this insurance shall be included in "*Expenses*". Limits in excess of $1,000,000.00 may be provided by an umbrella/excess policy. Landlord shall maintain in effect a commercial general liability policy with coverages not less than the Landlord Liability Coverage. The cost of this insurance maintained by Landlord shall be included in "*Expenses*". The amount and coverage of such insurance shall not limit a party's liability nor relieve that party of any other obligation under this Lease.

12.3. **Worker's Compensation**. Tenant shall, at its expense, maintain Worker's Compensation Insurance coverage sufficient to meet all local, state and federal governmental regulations.

12.4. **Business Interruption Insurance**. On and after the CO Date, Tenant shall, at its expense, maintain business interruption insurance in an amount equal to the Business Interruption Insurance Coverage. This insurance shall insure that the Base Rent will be paid to Landlord (unless such Rent is abated or this Lease terminates, as provided below) if the Premises are destroyed or rendered unusable by a risk insured against by a policy of standard fire and extended coverage insurance, with vandalism and malicious mischief endorsements.

12.5. **Policies**. Except as expressly provided otherwise in ***Section 7.2*** or this ***Section 12***, all of Tenant's required policies of insurance shall be maintained continuously throughout the Term and provide that they: (i) may not be changed or cancelled without 10 business days' prior written notice to Landlord; and (ii) shall be underwritten by insurers who have a Best's Financial Strength Rating of "A-" or better and a Best's Financial Size Category of at least "XII" as set forth in the then most current issue of "Best Key Rating Guide" (or if the Best's ratings are discontinued, a comparable method of rating insurance companies), who are licensed to do business in North Carolina, and who are authorized to issue the policies. At either party's request, a certificate (ACORD Form No. 25 or equivalent) evidencing the required insurance shall be given to the requesting party. The general liability policies shall be on ISO Form CG 00 01 04 13 or equivalent "occurrence basis" insurance policy form. Upon 30 days' advance written notice to Tenant, Landlord may, from time to time, increase any required coverage amounts specified in this Section based upon inflation, increased liability awards, recommendation of Landlord's professional insurance advisers, or as needed to meet Landlord's Lender's requirements. If Tenant fails to deliver any policy, certificate, or renewal to Landlord required under this Lease within the prescribed time period or if any such policy is cancelled or modified during the Term without Landlord's reasonable consent, Landlord may obtain such insurance, in which case Tenant shall reimburse Landlord for the cost of such insurance within 15 days after receipt of a statement that indicates the cost of such insurance, which statement shall be accompanied by a copy of the insurance policy obtained by Landlord.

12.6. **Indemnification**. Except where caused by a Landlord Party's negligence, gross negligence or willful misconduct, Tenant shall indemnify and hold the Landlord Parties harmless from any liability for injury to or death of any person or damage to any property relating to or arising out of Tenant's or its invitee's, employee's, agent's, or contractor's use or occupancy of the Premises or Common Areas or breach of its obligations under this Lease. Landlord shall indemnify and hold the Tenant Parties harmless from any liability for injury to or death of any person or damage to any property relating to or arising out of a Landlord Party's negligence, gross negligence, or willful misconduct. If the party to be indemnified is made a party to any litigation commenced by or against it for which it is to be indemnified, then the indemnifying party shall protect and hold harmless and pay all court costs, penalties, charges, damages, expenses, and reasonable attorneys' fees incurred or paid by the party to be indemnified. All acts attributable to a party shall extend to that party's members, officers, directors, employees, agents, shareholders, parent, and affiliates provided that the other tenants in the Building shall not be included in these groups. These indemnification obligations shall survive a termination of this Lease.

12.7. **Waiver of Subrogation**. Notwithstanding the language of ***Section 12.6*** to the contrary or that the loss or damage may be due to or result from the negligent or willful act of a party or its employees or agents, Landlord and Tenant, for themselves and their respective insurers, release each other from any and all claims, demands, actions and causes of action that each may have or claim to have against the other for loss or damage to persons or property, both real and personal, caused by or resulting from casualties required to be insured against by the terms of this Lease or otherwise insured against by the party suffering the loss or damage. For the purpose of the foregoing waiver/release, the amount of any deductible applicable to any loss or damage shall be deemed covered by, and recovered by the insured under, the insurance policy to which such deductible relates. All policies of insurance required by this Lease shall contain a provision whereby the insurer waives all rights of subrogation against either Tenant or Landlord, as appropriate. If insurance policies with waiver of subrogation provisions shall be obtainable only at a premium, the party obtaining the policy shall pay that additional premium. Except to the extent a party's insurance pays (or would have paid if the insurance coverage required by this Lease were in effect) a claim that otherwise would be subject to indemnification by the other party, this release is not intended to nor shall it release such other party from its indemnification obligations as set out in this Lease. These obligations shall survive a termination of this Lease.

13. DESTRUCTION/CONDEMNATION.

13.1. Destruction of Premises.

13.1.1. *Substantial Destruction*. If after the CO Date the Premises are totally or substantially (more than 50% of the rentable square feet) destroyed by fire or other casualty, either Landlord or Tenant may terminate this Lease by giving written notice of termination to the other party not later than 60 days after the date of the destruction. In that event and provided Tenant timely vacates the Premises, Base Rent and Additional Rent paid for the period beyond the date of destruction shall be refunded to Tenant and neither party shall have any further obligations under this Lease except for those obligations which are expressly provided to survive a termination.

13.1.2. *Partial Destruction*. If there is not total or substantial destruction of the Premises as described above, yet: (i) Landlord, in its sole judgment, concludes that restoration of the damage cannot be completed within 270 days; or (ii) less than six months of the Term remains (after factoring in any exercised Renewal Option), and the repairs are reasonably estimated to require more than 30 days to repair; or, (iii) insurance proceeds (along with funds Landlord, in its discretion, decides to provide) in an amount sufficient to restore the Premises are not made available to Landlord (provided, that Landlord shall use commercially reasonable efforts to obtain the proceeds to which it is entitled under its applicable insurance policy); either Landlord or Tenant may, at its option, terminate this Lease by giving written notice of termination to the other party not later than 30 days after the date Landlord provides Tenant with the information described below. In that event and provided Tenant timely vacates the Premises, Base Rent and Additional Rent paid for the period beyond the date of destruction shall be refunded to Tenant and neither party shall have any further obligations under this Lease except for those obligations which are expressly provided to survive a termination. Within 30 days after the casualty, Landlord shall furnish Tenant with Landlord's estimate of the time required to complete repairs and whether or not sufficient funds are available to pay for the required repairs.

13.1.3. *Repair/Restoration*. If this Lease is not terminated pursuant to ***Section 13.1.1*** or ***13.1.2***, Landlord, at its expense, shall promptly restore and/or repair the Premises and any other portions of the Building outside the Premises required for Tenant's use of the Premises; provided that, in no event shall Landlord be required to restore or repair: (i) any damage to the Tenant Upfit occurring prior to the CO Date; (ii) Alterations, fixtures, or improvements owned by Tenant (i.e., improvements other than the Tenant Upfit); or (iii) any of Tenant's personal property, all of which shall be Tenant's sole responsibility; provided, however, that Landlord shall pay over to Tenant any insurance proceeds made available to Landlord for the purposes of restoring or repairing the items listed above. *(For avoidance of doubt, in no event is Landlord required to maintain insurance for the items listed above.)* If Tenant is reasonably required to close all or a portion of its operations during the period of repair/restoration, Base Rent and Additional Rent shall abate on a proportional basis (based upon the square footage of the unusable portion of the Premises) during that period. In no event shall Landlord have any liability for losses claimed by Tenant resulting, directly or indirectly, from Tenant's inability to use the Premises.

13.1.4. *Tenant's Fault*. Notwithstanding the above to the contrary, if the Premises are damaged due to willful or grossly negligent acts or omissions of Tenant, its employees, agents, contractors, or invitees, Tenant may not terminate this Lease and there shall be no apportionment or abatement of Rent.

13.1.5. *Waiver*. Tenant acknowledges that the provisions of this Section shall govern the rights and obligations of the parties in the event of any substantial or total destruction to the Premises and Tenant waives the protection of any statute, code, or judicial decision which grants a tenant any other rights to terminate a lease in the event of the substantial or total destruction of the Premises.

13.2. Condemnation of Premises. If all of the Premises, or a portion which will make the remainder unusable for the Permitted Use, is taken under the power of eminent domain (or a conveyance in lieu thereof), then this Lease shall terminate as of the vesting of title in the condemning authority and

Base Rent and Additional Rent obligations shall be adjusted between Landlord and Tenant as of that date. If only a portion of the Premises are taken and Tenant can reasonably continue use of the remainder, then this Lease will not terminate, but Base Rent and Additional Rent obligations shall abate in a just and proportionate amount to the loss of use incurred by the taking. Except as otherwise provided by the authority granting an award of damages, Tenant shall have no right or claim to any part of any award made to or received by Landlord for any taking of the Premises and no right or claim for any alleged value of the unexpired portion of this Lease; provided, however, that Tenant shall not be prevented from making a claim against the condemning party (but not against Landlord) for any moving expenses, loss of profits, or taking of Tenant's personal property (including its leasehold interest) to which Tenant may be entitled. No Tenant's claim may, however, diminish Landlord's or Landlord's Lender's award with respect to the Premises. For purposes of this Section, Landlord and Tenant shall make a good faith determination as to whether or not the Premises are still suitable for the Permitted Use after a taking. If less than a fee title to all or any portion of the Premises shall be taken or condemned by any governmental authority for temporary use or occupancy, this Lease shall continue in full force and effect; but with Rent abated during any period when Tenant's use of the Premises is impaired in proportion to the impairment of such use.

14. CARE/RETURN OF PREMISES.

14.1. **Care of Premises**. Tenant shall not, to the extent within Tenant's control, permit or cause any act to be performed upon, in, or about the Premises which shall cause or be likely to cause injury to any person or to the Premises, the Building, the Common Areas, or any adjoining property. Subject to Landlord's obligations under ***Section 9.3*** and ***Exhibit I***, Tenant shall at all times keep the Premises in a neat and orderly condition. Tenant shall take reasonable care of the Premises, fixtures, and appurtenances and suffer no waste or injury to such and shall pay for all repairs to the Building or Premises necessitated by the fault of Tenant, its employees, agents, customers, or guests. Tenant shall comply with all trash storage policies established by Landlord from time to time.

14.2. **Return of Premises**. Upon the termination of this Lease, Tenant shall return the Premises to Landlord substantially in the same condition as received and shall deliver any certification required under ***Exhibit G***. Excepted from this obligation are: (i) conditions which are Landlord's responsibility or result from Landlord's or its agent's or employee's gross negligence (except to the extent covered by insurance maintained by Tenant), a casualty or a condemnation; (ii) ordinary wear and tear; and (iii) Landlord-approved Alterations which Landlord has not required to be removed. Tenant shall be responsible for all damages to the Building or Premises caused by the removal of its equipment, trade fixtures, and other personal property from the Premises. Tenant shall be responsible for all damages to the Building or Premises caused by the removal of their equipment and trade fixtures from the Premises. The obligations in this Section shall survive a termination of this Lease. Any failure by Tenant to comply with this Section shall be deemed to be a holdover (as described in ***Section 15***) by Tenant for the period it takes Tenant, or if Tenant fails to do so after written notice from Landlord, Landlord to complete any required repair/replacement activities needed to return the Premises to the required condition.

14.3. **Surrender of Premises**. No act or thing done by a Landlord Party or Landlord's agent shall be deemed to constitute an acceptance by Landlord of a surrender of the Premises prior to the Expiration Date unless such intent is specifically acknowledged in writing by Landlord. The delivery of keys to the Premises to a Landlord Party or Landlord's agent shall not constitute a surrender of the Premises or effect a termination of this Lease, whether or not the keys are retained by Landlord. Neither a surrender of this Lease by Tenant, whether accepted by Landlord or not, or a mutual termination of this Lease shall work as a merger; but, at Landlord's option, shall operate either as an assignment to Landlord of all subleases or subtenancies of the Premises or terminate any or all such subleases or subtenancies.

15. HOLDING OVER. If Tenant remains in possession after termination of this Lease without the execution of a new lease or Landlord's written consent, Tenant shall not acquire any right, title, or interest in the Premises. In that event, Tenant shall occupy the Premises as a tenant-at-will and shall otherwise be subject to all applicable conditions, provisions and obligations of this Lease; except that all options and rights of renewal, rights of first refusal, and the like, if any, shall terminate. Notwithstanding the preceding, Landlord shall have the right to pursue summary ejectment of Tenant as provided by law and to recover from Tenant any and all damages suffered as a result of that holdover, including any indirect, consequential, or special damages sustained by Landlord relating to any loss of a prospective tenant for the Premises; provided, however, that Tenant shall not be liable to Landlord for any damages (other than the payment of increased Base Rent as provided below) during any such holdover unless and until Landlord has (i) delivered written notice to Tenant that Landlord has executed a lease with a new tenant for the Premises; and (ii) provided Tenant at least 15 days to vacate the Premises after receipt of such notice. ***(For avoidance of doubt, nothing in this Section shall be deemed to give Tenant any legal right to occupy the space after the expiration of the Lease.)*** During the holding over period, Tenant shall continue to pay Additional Rent as prescribed in this Lease; but shall pay monthly Base Rent equal to the Holdover Rent Multiple times the Base Rent Installment Amount in effect as of the last month immediately prior to the termination; provided that the increased rent paid by Tenant (i.e., the amount over the Base Rent Installment Amount) shall be credited toward those damages, if any, incurred by Landlord as arising out of the holdover.

16. ASSIGNMENT.

16.1. **Tenant Restriction.** Tenant shall not assign this Lease or sublet the Premises, in whole or in part, whether voluntarily or by operation of law, without both: (i) Landlord's reasonable prior written consent; and (ii) NCSU's approval as described in ***Section 16.2***. It shall not be unreasonable for Landlord to withhold consent if:

(i) the assignee/sublessee is engaged in the commercial real estate business (including property management or the brokerage, ownership, or development of competitive properties), or the provision of "*executive suites*" or any similar arrangement;

(ii) the assignee/sublessee's business which is not in some way connected or associated with NCSU, such that the assignee/sublessee would not be qualified to lease space directly from NCSU in accordance with NCSU's policies for leasing to tenants in the Campus;

(iii) it would cause Landlord to be in default under another lease in the Building or the Campus;

(iv) occupancy by the proposed assignee/sublessee would violate the terms of this Lease or cause Landlord to be in breach of any restrictive covenant relative to the Building, the Campus, or other leases, or materially increases the costs of operation for the Building;

(v) Landlord's Lender withholds its consent or Landlord's granting consent would be a breach of the Deed of Trust; provided Landlord takes commercially reasonable efforts to resolve such and is unable to do so; or

(vi) the proposed subtenant or assignee is a person or entity with whom Landlord or its agent within the preceding six months has given or received any written or oral proposal regarding leasing space in any building in which Keystone Corporation or its principals owns any interest and which building has suitable space available for such proposed subtenant or assignee.

If Landlord unreasonably withholds its consent, Tenant's sole and exclusive remedy is specific performance and under no circumstances will Landlord be liable for any damages.

Any proposed assignment or sublease shall also be subject to the following additional limitations: (i) Tenant shall not post any signs advertising the availability of the Premises anywhere in (including inside the Premises) or on the Building; and (ii) all public advertisements regarding the assignment of this Lease or subletting all or any portion of the Premises, shall be subject to Landlord's prior written reasonable approval. In no event shall this Lease be assignable by operation of any law. Any attempted assignment of this Lease or sublease in violation of this Section shall be voidable by Landlord, in its discretion, and, notwithstanding anything in this Lease to the contrary, shall immediately be an Event of Default (i.e., Tenant shall have no right to notice of, or right to cure, that default).

16.2. NCSU Approval. The Campus is a research and advanced technology campus where university, industry, and government partners interact in multidisciplinary programs directed toward the solution of contemporary problems. A wide range of business uses are permitted in the Campus, including the following: research and development, information technology, computer software/hardware, advanced materials, engineering, biotechnology, environmental sciences, agriculture and life sciences, and business management. In the event of a dispute concerning the qualifications of a potential subtenant under the preceding sentence, the question will be presented to NCSU's Vice Chancellor for Research, Innovation and Economic Development for a decision. In addition, a variety of commercial and retail support services may be permitted in the Campus. In the event of a dispute concerning the qualifications of a potential subtenant under the preceding sentence, the question will be presented to NCSU's Vice Chancellor for Finance and Administration for a decision. Should Tenant be dissatisfied with a decision made by either Vice Chancellor regarding either of these categories, Tenant shall have the right to submit the question to the Chancellor of NCSU, whose decision shall be final. Notwithstanding the foregoing, NCSU agrees that: (i) it will not deny any sublease or assignment to any applicant for reasons other than failure to meet the criteria generally applicable to other prospective Campus tenants; and (ii) any sublease or assignment applicant which, at the time of such application, is already a tenant in good standing in another building in the Campus shall automatically be deemed acceptable to NCSU, provided its proposed use of space is similar to its use of such other space in the Campus.

16.3. Notice. If Tenant proposes to assign any interest in this Lease or to sublet all or any portion of the Premises, Tenant shall first submit to Landlord a written notice of its intentions (the "***Notice of Intent***"). The Notice of Intent shall contain: (i) the name of the proposed assignee/subtenant; (ii) the terms of the proposed assignment/subletting and a copy of the proposed assignment/sublease agreement; and, (iii) any other information reasonably requested by Landlord. Landlord shall send the Notice of Intent and any other accompanying materials to NCSU for their approval; but Tenant shall be solely responsible for obtaining that approval. If Landlord consents to the proposed assignment/sublease, it shall be an express condition of that consent that: (i) Tenant provide Landlord with a copy of the executed assignment, sublease, or other applicable document promptly after it is executed; and (ii) no material modification or assignment of that assignment/sublease shall be permitted without Landlord's reasonable prior written consent. Landlord shall have 15 business days from receipt of the Notice of Intent to consent to or reject Tenant's sublease or assignment.

16.4. Liability. Landlord's consent to one transfer shall not be deemed a consent to any subsequent transfer. Any assignment or sublease to which Landlord may consent (one consent not being any basis to contend that Landlord should consent to further assignments or subleases) shall not relieve Tenant or any guarantor of its Lease obligations. If Tenant's assignee/subtenant defaults under this Lease, Landlord may proceed directly against Tenant without pursuing remedies against that assignee/subtenant. Landlord may consent to subsequent assignments or modifications of this Lease by Tenant's assignee/subtenant, without notifying Tenant or obtaining its consent, and such action shall not relieve Tenant from liability under this Lease. Landlord's acceptance of rent from any person other than Tenant shall not be a waiver of any of Landlord's rights.

16.5. Costs. If Tenant requests Landlord's consent to an assignment/subletting of this Lease, Tenant shall pay Landlord's reasonable and actual attorneys' fees incurred in connection with that matter, such fees not to exceed $1,500.00 for each request. *(This cap shall increase at the rate of 3% per annum from the Commencement Date.)* In addition, Landlord reserves the right if Tenant is released from its obligations under this Lease, in its discretion and as a condition of any assignment permitted under any subsection of this Section, to require the assignee to increase the Security Deposit Amount to an amount equal to the then effective monthly Installment Amount of Base Rent.

16.6. Excess Consideration. If this Lease is assigned or the Premises sublet, one-half of the consideration in the form of Rent received by Tenant from that assignment or sublease over the amount paid as Rent during the comparable period (the "***Excess Consideration***") shall be paid to Landlord as Additional Rent on a monthly basis. In the event less than all of the Premises is subleased, a pro rata portion (calculated on a per square foot basis) of the Rent paid by Tenant shall be used in calculating the Excess Consideration. The reasonable leasing commissions paid by Tenant, the amortization of the cost of any improvements made to the Premises at Tenant's cost for the assignee/sublessee, the amortization of the TU Costs paid by Tenant, and other reasonable, out-of-pocket costs paid by Tenant to unaffiliated third parties in connection with the assignment/subletting shall be deducted in calculating the Excess Consideration. Excess Consideration shall not include the price paid to Tenant by the assignee/subtenant for Tenant's equipment, assets, intangible property, stock, and/or business as a going concern. Within 10 days of the date the assignee/subtenant begins occupancy in the Premises, Tenant shall send Landlord a copy of the executed Lease Assignment or Sublease, as applicable, and a detailed statement showing the calculation of the Excess Consideration, including the total consideration to be paid by the subtenant/assignee over the term of the assignment/subletting and any costs (to be accompanied by reasonable supporting documentation) to be deducted from that amount as permitted by this Section. Landlord shall have the right, at any time, but not more than once per calendar year, during business hours and upon no less than five business days' prior reasonable notice to Tenant, to audit Tenant's books and records to verify the accuracy of that statement.

16.7 Affiliated Entities. Notwithstanding anything contained in this Lease to the contrary, Tenant may, without Landlord's prior consent, assign this Lease or sublease all or a portion of the Premises to an Affiliated Entity (as defined below); provided that the assignment or sublease to the Affiliated Entity shall be permitted only so long as the assignment or sublease is made for a good faith business purpose and the assignee or subtenant remains an Affiliated Entity. Tenant shall nevertheless give, subject to any legally required confidentiality requirements, Landlord prompt notice of any such assignment or sublease, which shall include the information specified in ***Section 16.3***; provided that, in the event Tenant cannot provide such notice to Landlord prior to the assignment or sublease in question due to any such legally required confidentiality requirements, Tenant shall provide such notice to Landlord as soon as reasonably possible after such legally required confidentiality requirements are no longer in effect. For purposes of this Lease, an "*Affiliated Entity*" shall mean a partnership, corporation, or limited liability company that directly or indirectly controls, is controlled by or is under common control with Tenant, the purchaser of substantially all of Tenant's assets (provided the purchaser assumes the Lease, in writing, in a form reasonably acceptable to Landlord), or the surviving entity in a merger involving Tenant. An assignment or sublease pursuant to this Section shall not release Tenant or any guarantors from their respective obligations under this Lease. Notwithstanding anything in this ***Section 16*** to the contrary, every assignment of this Lease or sublease of any portion of the Premises is subject to NCSU's prior written approval.

16.8. Landlord Assignment. Landlord may assign this Lease to Landlord's Lender as collateral and/or to a purchaser of Landlord's interest in the Building without Tenant's prior consent or approval, but such assignment shall be subject to ***Section 18.2***.

17. DEFAULT/REMEDIES.

17.1. Tenant Default. The following events (each an "***Event of Default***") shall each constitute a material default by Tenant:

(a) If Tenant fails to timely pay any sum due Landlord under this Lease, which failure shall continue for a period of five business days after receipt or deemed receipt of written notice of that failure by Tenant; or

(b) If Tenant fails to timely perform any non-monetary term, condition, or covenant of this Lease, which failure continues for a period of 30 days after receipt or deemed receipt of written notice of that failure by Tenant; provided that, if the default cannot be reasonably cured within that period, Tenant shall not be in default so long as it commences a cure of the failure within that 30-day period and thereafter diligently continues to pursue such cure to completion within a reasonable time after the expiration of that initial 30-day period (in no event to exceed a total of 90 days after Tenant's receipt or deemed receipt of the written notice of that failure). Notwithstanding the preceding to the contrary, where a specific time period following a written notice of such failure is otherwise provided in this Lease for Tenant's performance, the failure to perform by Tenant within such time period shall be an Event of Default (i.e., the cure periods provided above shall be inapplicable); or

(c) An Insolvency Proceeding occurs with respect to Tenant and such is not stayed or vacated within 60 days of entry thereof and provided Tenant does not continue to pay Rent hereunder; or

(d) If Tenant's interest in this Lease or the Premises is subjected to any attachment, levy, or sale pursuant to any order or decree entered against Tenant in any legal proceeding and the order or decree shall not be vacated within 30 days of its entry; or

(e) If any guarantor of this Lease revokes or otherwise terminates, or purports to revoke or otherwise terminate, any guaranty of all or any portion of Tenant's obligation under this Lease. Unless otherwise expressly provided, no guaranty of this Lease is revocable; or

(f) If Landlord, with reasonable cause, on more than two occasions in any 12-month period, gives notice to Tenant of the same default under subparagraphs (a) or (b) above, notwithstanding Tenant's subsequent cure of the noticed defaults within the allowable periods.

The notices required by this Section are intended to satisfy any and all notice requirements imposed by law on Landlord and are not in addition to any such requirement.

17.2. Remedies Upon Tenant Default.

(A) Upon the occurrence of any Event of Default, Landlord, with or without terminating this Lease, immediately or at any time thereafter, shall have the right, at its option, to utilize any one or more of the following remedies:

(i) Landlord may make any payment required of Tenant and/or re-enter the Premises and correct or repair any condition which shall constitute a failure on Tenant's part to keep or perform. Tenant shall reimburse Landlord for any reasonable expenditures made by Landlord in making the payment and/or corrections or repairs within 15 days after delivery of a statement to Tenant accompanied by reasonable documentation supporting the demand.

(ii) Landlord may demand in writing that Tenant vacate the Premises. Tenant shall vacate the Premises and remove all its property within 10 business days of Tenant's receipt of the notice, whereupon Landlord shall have the right to re-enter and take possession of the Premises.

(iii) Landlord may re-enter the Premises and remove Tenant and all of Tenant's property.

(iv) Landlord may re-let all or any portion of the Premises for such time, rent, and other terms and conditions as Landlord, in its sole discretion, may deem advisable. Landlord may make any alterations or repairs to the Premises which it may deem necessary or proper to facilitate the reletting. Tenant shall pay all commercially reasonable costs of the reletting applicable to the Term remaining on this Lease, including the commercially reasonable cost of any alterations or repairs to the Premises. If this Lease has not been terminated by Landlord, Tenant shall continue to pay all charges due from Tenant under this Lease up to and including the date of beginning of payment of rent by any subsequent tenant of part or all of the Premises, and thereafter, Landlord may accelerate and collect from Tenant the difference, if any, between the rent to be collected from that subsequent tenant and the Rent reserved in this Lease for the balance of the Term, after discounting the difference to its present value by a factor equal to Landlord's Lender's then announced prime rate. In no event shall Tenant be entitled to receive any excess of any rents collected by Landlord over the Rents due from Tenant. In no event shall Tenant be entitled to receive any excess of any rents collected by Landlord over the Rent due from Tenant.

(v) Landlord may terminate this Lease without notice or demand to vacate the Premises. This Lease shall be deemed to have been terminated by Landlord only upon Landlord's written notice of termination delivered to Tenant. Upon termination Landlord shall nevertheless remain entitled to recover from Tenant all sums provided for in subparagraph (iv) above as if this Lease were not terminated.

(vi) Landlord may exercise any other remedies and recover any other damages available to it under law or in equity.

(B) In the event of any re-entry of the Premises by Landlord pursuant to any of the provisions of this Lease, Tenant waives all claims for damages which may be caused by that re-entry except those damages arising from any Landlord Party's gross negligence or willful misconduct which damages are not otherwise covered by insurance maintained by Tenant or would have been covered by insurance required to be maintained by Tenant. Tenant shall reimburse Landlord for any and all losses, costs, expenses (including legal expenses and reasonable attorneys' fees), and damages suffered by Landlord by reason of its re-entry, removal, and/or storage of Tenant's property. No re-entry shall be considered or construed to be a forcible entry.

(C) Upon any material breach of this Lease, regardless of whether that breach is, or becomes, an Event of Default, Landlord shall be reimbursed for any and all actual and commercially reasonable expenses incurred by Landlord, including legal expenses and reasonable attorneys' fees, in enforcing the terms and provisions of this Lease.

(D) Any of Tenant's personal property remaining at the Premises 10 business days after a repossession of the Premises by Landlord after an Event of Default or after a termination of this Lease shall be deemed abandoned by Tenant. Tenant shall be liable for any and all storage and/or removal costs incurred by Landlord in storing and/or removing that abandoned property; provided, however, that Landlord shall give Tenant written notice of its election to remove and/or store such personal property. In addition, Landlord shall be entitled to sell the abandoned property in order to recover those storage/removal costs and any other amounts due from Tenant under this Lease. The sale of the abandoned property may be by private or public sale as contemplated under the North Carolina Uniform Commercial Code or in any other form provided by law. This right shall be in addition to any statutory lien for rent or similar rights available to Landlord under law or this Lease

(E) For avoidance of doubt, after an Event of Default, Landlord shall not be obligated to accept a cure of that Event of Default, such decision to accept being in Landlord's sole discretion.

17.3. Landlord's Default. If, after delivery of the Premises to Tenant, Landlord breaches any of its duties or obligations to Tenant and:

(a) in the case of a monetary default, the breach continues for five business days after written notice is received or deemed received by Landlord; or

(b) in the case of a non-monetary default, the breach continues for 30 days (or such longer period of time as it may reasonably take to cure provided Landlord promptly and diligently pursues the cure and is not otherwise in default) after written notice of the breach is received or deemed received by Landlord, Tenant may take such action as is reasonably necessary to cure the breach. For avoidance of doubt purposes, except where another remedy is otherwise expressly provided in this Lease for a Landlord default, the above remedy shall be Tenant's sole and exclusive remedy for a default by Landlord. In this event, Landlord shall, upon demand (accompanied by reasonable documentation supporting the demand) reimburse Tenant for expenses reasonably incurred by Tenant in curing Landlord's breach, including legal expenses and reasonable attorneys' fees. If Landlord shall fail to promptly reimburse Tenant, Tenant may withhold or abate its Rent payment due to the extent of the unreimbursed expenses. In the event of any dispute about Tenant's right to abate or withhold Rent or other sums payable to Landlord under this Lease, Tenant must deposit the disputed amounts in escrow in an interest-bearing account with Landlord's Lender, conditioned on resolution of the dispute by a final, non-appealable court order or by mutual written agreement of Landlord and Tenant. Any interest earned shall be paid to the party entitled to the escrowed funds and any fees of the Landlord's Lender shall be paid by the party not entitled to the escrowed funds. Regardless of the outcome or resolution of the dispute, no Event of Default with respect to the subject matter of the dispute shall be deemed to have occurred so long as the disputed amounts are timely deposited in escrow by Tenant. Notwithstanding the foregoing, if Landlord has not timely cured a default and the costs which Tenant would reasonably incur to cure that particular default exceed a total of $50,000, as alternative remedies, Tenant, at its election, may: (i) sue to specifically enforce Landlord's obligation; or (ii) terminate this Lease without any liability by giving Landlord written notice no less than 30 days' prior to the effective date of such termination; provided, in either event, that such alternative remedy is exercised by Tenant within 90 days of the date Tenant has given Landlord written notice of Landlord's default.

17.4. <u>Mitigation</u>. Whenever a party is in default under this Lease, the non-defaulting party shall use commercially reasonable efforts to mitigate the damages resulting from the default; provided, however, Landlord shall not be obligated to market or relet the Premises: (a) on a priority basis over unleased or unoccupied space in the Building; (b) for a use different from the Permitted Use; or (c) at a rental rate below the lesser of: (i) the then current fair market rental for the Premises; and (ii) the then effective rental rate for the Premises. The parties acknowledge that the restrictions of the Ground Lease as to the type of tenants permitted to occupy the space in the Building may impair Landlord's ability to mitigate its damages by re-leasing the Premises.

18. SUBORDINATION/ATTORNMENT/ESTOPPEL.

18.1. <u>Subordination</u>. Depending on the requirements of the then Landlord's Lender, this Lease and the rights of Tenant will either be subordinate or superior to each Deed of Trust. If Tenant requests such, such subordination shall be subject to the terms of a written subordination, non-disturbance, and attornment agreement (an "***SNDA***") between Landlord's Lender and Tenant (and Landlord if requested by Landlord's Lender). Should Landlord's Lender request an SNDA, so long as the language and provisions comport with the provisions of this Lease and otherwise are customary for commercial real estate leases of this type, Tenant will execute an SNDA making this Lease superior or subordinate, as the case may be. Should Tenant fail to timely deliver the SNDA within 15 days of Tenant's receipt of Landlord's Lender's written request, then:

(a) Such failure shall be deemed an Event of Default if it continues for an additional ten days after written notice to Tenant; and/or

(b) Tenant shall pay to Landlord, as Additional Rent, $100.00 per day for each day past that 15-day period Tenant delays in delivering the SNDA;

provided that Landlord may not seek the remedies set forth in this subparagraph for as long as the delay is attributable to reasonable negotiations between the parties relating to the form or content of the SNDA. Each SNDA shall: (i) be in writing; (ii) include language to the effect that, provided Tenant is not in default under this Lease beyond applicable notice and cure periods, Tenant's rights under this Lease shall not be disturbed or affected by any default by Landlord under the Deed of Trust; and (iii) otherwise include provisions customary for SNDAs for commercial real estate leases of this type. Upon Tenant's written request, Landlord shall use commercially reasonable efforts to cause the then current Landlord's Lender to enter into an SNDA in the form described in this Section.

Landlord shall obtain from Landlord's current Lender an SNDA with respect to this Lease in conformance with the requirements set forth above within 20 days of the Execution Date.

18.2. <u>Attornment</u>. Tenant and any guarantor of this Lease shall be bound to a Successor under all of the terms of this Lease for the balance of the Term, with the same force and effect as if the Successor were Landlord under this Lease. Tenant and any guarantor of this Lease is deemed to attorn to the Successor as its landlord (but only on the express condition that Tenant's rights under this Lease shall not be disturbed or affected so long as Tenant is not in default beyond any applicable notice and cure periods under the terms of this Lease) and no further documents shall be required to effectuate the attornment. Provided Successor becomes legally bound to Tenant in respect of all of Landlord's duties and obligations accruing under this Lease on and after Successor acquires title, Landlord shall have no further liability under this Lease for duties or obligations thereafter accruing under this Lease and Tenant shall look solely to the Successor for any subsequent performance due by Landlord. Each written attornment agreement of Tenant shall: (i) include language to the effect that, provided Tenant is not in default under this Lease beyond applicable notice and cure periods, Tenant's rights under this Lease shall not be disturbed or affected by any default by Landlord under the Deed of Trust; and (ii) otherwise include provisions customary for attornment agreements for commercial real estate leases of this type.

18.3. Estoppel Certificate. Within 10 days after Tenant's receipt of Landlord's or Landlord's Lender's written request, Tenant (and, if applicable, each Guarantor) shall execute a tenant estoppel certificate (a "***TEC***") setting forth the following facts with respect to this Lease: (i) its date of occupancy; (ii) the Term; (iii) the amount of periodic Rent then due and the date to which Rent is paid; (iv) whether or not it has, to Tenant's knowledge, any defense or offsets to the enforcement of this Lease; (v) its knowledge of any default or breach by Landlord under this Lease; and (vi) whether or not this Lease is in full force and effect, inclusive of all modifications and/or amendments, copies of which Tenant shall attach to the TEC. Tenant acknowledges that Landlord and any prospective purchaser or lender may rely on the TEC given by Tenant and each guarantor. Unless Tenant is reasonably negotiating the form or content of the TEC, if Tenant fails to timely deliver the TEC within the 10-day period specified above, then Landlord may send a second written request for the TEC to Tenant. Unless Tenant is reasonably negotiating the form or content of the TEC, if Tenant fails to timely deliver the TEC within five days after receipt of the second request:

(a) Landlord, and any prospective purchaser or lender, may conclusively presume and rely upon the following facts: (i) that the terms and provisions of this Lease have not been changed except as otherwise represented by Landlord; (ii) that this Lease has not been terminated except as otherwise represented by Landlord; (iii) that not more than one month's Base Rent or other charges have been paid in advance; and (iv) that Landlord is not in default under this Lease. Tenant shall be estopped from denying the truth of such facts; and/or

(b) Tenant shall pay to Landlord, as Additional Rent, $100.00 per day for each day past that five-day period Tenant delays in delivering the TEC after Landlord's second request; provided that Tenant shall not be required to pay such charge if the delay is attributable to reasonable negotiations between the parties relating to the form or content of the TEC.

18.4. Landlord Lender's Rights. If Tenant is notified of Landlord's assignment of this Lease as security for a Deed of Trust and of the name and address of Landlord's Lender, Tenant shall not thereafter terminate this Lease for any default by Landlord without first giving written notice of its intention to do so to Landlord's Lender (the notice to describe in reasonable detail the nature and extent of the default) and affording Landlord's Lender the same opportunity (i.e., period of time) to cure the default as given Landlord under the terms of this Lease. Tenant waives the protection of any statute or rule of law which gives or purports to give Tenant any right to terminate this Lease or surrender possession of the Premises upon the transfer of Landlord's interest.

19. COVENANT OF TITLE AND QUIET ENJOYMENT. Landlord covenants and warrants to Tenant that Landlord has full right and lawful authority to enter into this Lease for the Term and that, provided Tenant is not in default beyond any applicable notice and cure period, Tenant's quiet and peaceable enjoyment of the Premises shall not be disturbed by Landlord or anyone claiming through Landlord. **Tenant nevertheless acknowledges that from time to time portions of the Building may be under construction following Tenant's occupancy of the Premises, and that such construction may result in levels of noise, dust, obstruction of access, etc. Tenant waives any and all rent offsets or claims of constructive eviction which may arise in connection with such construction; provided, however, that Landlord shall not materially impair, and shall use all commercially reasonable efforts to minimize any impact on, Tenant's business operations and access to the Premises in the performance of such construction and shall seek to coordinate anticipated interruptions in services or other disturbances with Tenant to the fullest extent reasonably possible.**

20. RULES AND REGULATIONS.

20.1. Tenant's Obligation. Tenant shall be bound by the Rules & Regulations. Landlord may, from time to time, make additional rules and regulations or modifications to the Rules & Regulations which it deems reasonably necessary for the preservation of good order, safety, care, cleanliness and economical management of the Premises. Landlord shall use commercially reasonable efforts to cause compliance in all material respects with the Rules and Regulations by all tenants and other occupants of the Building; provided that: (i) Landlord shall not be liable for non-compliance; (ii) any such non-compliance shall not excuse Tenant from compliance; and (iii) Landlord may permit reasonable waivers so long as such waivers do not unreasonably interfere with or materially and adversely affect Tenant in the conduct of its business or violate any express rights granted to Tenant under this Lease. Landlord shall not otherwise enforce the Rules and Regulations against Tenant in a discriminatory manner.

20.2. Changes. Notwithstanding the above to the contrary: (a) Tenant shall be provided with written notice of any change in the Rules & Regulations; (b) Tenant shall be required to comply with only those Rules & Regulations which are applicable to all tenants in the Building; and (c) no change in the Rules & Regulations shall be made that would materially and adversely affect Tenant's ability to use the Premises for the Permitted Use.

21. EASEMENTS, RESTRICTIONS, AND RIGHTS OF WAY. The Premises are leased subject to all easements, restrictions, and rights-of-way legally affecting the Premises. Landlord has no actual notice that these easements, restrictions, or rights-of-way prohibit the use of the Premises for the Permitted Use.

22. LANDLORD'S RIGHT OF ENTRY. Landlord shall have the right to enter and to grant temporary licenses to enter the Premises in accordance with the terms of this Section to: (i) inspect the Premises in connection with Landlord's maintenance obligations under this Lease; (ii) exhibit the Premises to prospective tenants (provided such is limited to the period within one year prior to the Expiration Date), purchasers, or lenders; (iii) make alterations or repairs to the Premises or to the Building to the extent permitted by this Lease; (iv) to abate any condition which constitutes a violation of any covenant or condition of this Lease; or (v) for any purpose which Landlord shall deem reasonably necessary for the operation and maintenance of the Building and the general welfare and comfort of its tenants. Landlord's exercise of these rights shall not constitute an actual or constructive eviction. Except in those instances where Tenant is in default under this Lease, these entries by Landlord shall not in any manner affect Tenant's obligations and covenants under this Lease. Except in the case of emergencies or default: (i) Landlord shall give Tenant at least 24 hours' advance written notice of entry; (ii) entries shall be during business hours; (iii) if Tenant so elects at the time, any persons entering the Premises on behalf of Landlord shall be accompanied by one of Tenant's employees; and (iv) Landlord shall make reasonable efforts to minimize interference with Tenant's occupancy of the Premises. Tenant shall permit NCSU and its contractors, agents, and representatives to enter the Premises on the same terms provided to Landlord under this Section; provided that, in the event of an emergency, when entry to the Premises is reasonably necessary and neither Tenant nor Landlord is personally present to open and permit entry into the Premises, NCSU or NCSU's agent may enter the Premises by master key, code, card, or switch or may forcibly enter the Premises, without rendering NCSU or such agents liable for such entry and without, in any manner, affecting the obligations and covenants of this Lease.

23. LANDLORD'S LIABILITY. Notwithstanding anything in this Lease to the contrary, none of the Landlord Parties shall be liable to Tenant for:

(a) Any damage caused by or any act or negligence of any other occupant of the Building or by any owner or occupant of adjoining or contiguous property.

(b) Provided that causes of the damage are not directly under the care, custody, or control of Landlord, any damage caused to Tenant or its property due to the Premises, Building, or Common Area (or any part or appurtenances thereof) being or becoming out of repair or arising from the failure of any utility service. Tenant shall promptly report any defective condition in or about the Premises, Building, or Common Areas known by it to Landlord.

None of the Landlord Parties shall have any personal liability for any breach of this Lease or any claims relating to the relationship of the parties except to the extent of rental income, proceeds of sale, insurance proceeds, condemnation proceeds, and the like received by the exculpated party from the Building after the entry of a judgment in favor of Tenant and Tenant shall otherwise look solely to Landlord's interest in the Building for satisfaction. Any Landlord who transfers its title to the Building is relieved of all liability with respect to the obligations of Landlord under this Lease to be performed on or after the date of transfer. **Notwithstanding any other provisions in this Lease to the contrary, neither Landlord nor Tenant shall be liable to the other for any special, consequential, incidental, or punitive damages except: (a) this limitation shall not apply to a party's indemnification obligations; and (b) Tenant shall be liable for consequential damages with respect to a breach of its obligations under *Section 15*.**

24. IDENTITY OF INTEREST. The relationship of the parties during the Term shall at all times be only that of a landlord and tenant. Nothing in this Lease shall be deemed or construed to have created the relationship of principal or agent or a partnership or joint venture between Landlord and Tenant.

25. FORCE MAJEURE. If Landlord or Tenant shall be delayed, hindered, or prevented from the performance of any act required under this Lease (other than the payment of money) by reason of governmental restrictions, extreme weather or other act of God, scarcity of labor or materials, strikes, or any other reasons beyond its reasonable control, the performance of the act shall be excused for the period of delay, and the period for the performance of the act shall be extended for the period necessary to complete performance after the end of the period of the delay. After the CO Date, any such force majeure extending for a period of 30 days or longer shall be treated as a casualty and the provisions of ***Section 13*** shall apply.

26. ATTORNEY FEES. If a legal action, Binding Arbitration, or any other legal proceeding is brought to enforce this Lease, the unsuccessful party in the proceeding shall pay to the successful party the costs of the action, including reasonable attorneys' fees. "***Reasonable Attorneys' Fees***" shall be deemed to be those fees actually charged based upon time actually spent at customary and reasonable charges normally incurred for those type of services, as opposed to any statutory presumption which may then be in effect. This obligation shall survive a termination of this Lease.

27. BROKER. Tenant warrants that it has had no dealings with any broker in connection with the negotiations or execution of this Lease other than the Brokers. Landlord shall: (i) be solely responsible for any commissions due Landlord's Broker or other brokers contacted by or used by Landlord in connection with the negotiations or execution of this Lease; and (ii) indemnify Tenant and hold Tenant harmless from and against any and all cost, expense, or liability for commissions or other compensation or charges claimed by Landlord's Broker and any other broker or agent acting for Landlord with respect to this Lease. Tenant shall: (i) be solely responsible for any commissions due any brokers contacted by or used by Tenant in connection with the negotiations or execution of this Lease, other than Landlord's Broker, and (ii) indemnify Landlord and hold Landlord harmless from and against any and all cost, expense, or liability for commissions or other compensation or charges claimed by any broker or agent acting for Tenant with respect to this Lease.

28. HAZARDOUS SUBSTANCES.

28.1. Compliance. Tenant shall, at Tenant's own expense: (a) comply with all Environmental Laws and the requirements of ***Exhibit G***; (b) comply with the provisions of Section 11.1(e) of the Ground Lease applicable to a "*Permitted Subtenant*"; and (c) make all submissions to, provide all information required by, and comply with all requirements of all governmental authorities (the "***Authorities***") under the Environmental Laws arising in connection with its obligations under this Section.

28.2. Tenant's Restrictions. Tenant shall not cause or, to the extent within Tenant's control, allow:

(a) Any violation of any Environmental Laws on, under, or about the Premises; or

(b) The use, generation, release, manufacture, production, processing, storage, or disposal of any Hazardous Substance in or about the Premises, or the transportation to or from the Premises of any Hazardous Substance, except: (i) in *de minimis* quantities necessary for or incidental to

Tenant's normal and customary conduct of business; and/or (ii) in strict compliance with all applicable Environmental Laws.

28.3. **Remediation**. Should any Authority or any third party demand that a cleanup plan be prepared and that a cleanup be undertaken because of any deposit, spill, discharge, or other release of Hazardous Substances that occurs at any time from Tenant's use or occupancy of the Premises, then Tenant, at its own expense shall: (i) prepare and submit the required plans and all related bonds and other financial assurances; and (ii) carry out all such cleanup plans.

28.4. **Indemnification**. Tenant shall indemnify, defend, and hold harmless the Landlord Parties from all fines, suits, procedures, claims, and actions of every kind, and all costs associated therewith (including reasonable attorneys' and consultants' fees) arising out of or in any way connected with any deposit, spill, discharge, or other release of Hazardous Substances which: (a) occurs at or from the Premises during the Term of this Lease; (b) arises at any time from Tenant's use or occupancy of the Premises; or (c) results from Tenant's failure to provide all information, make all submissions, and take all steps required by all Authorities under the Environmental Laws. Tenant's obligations and liabilities under this Section shall survive the termination of this Lease. These provisions relating to Tenant's environmental indemnification obligations shall not, however, apply to events (and for each of such events Landlord shall be responsible): (i) which occur at any time as a direct result of the acts or omissions of Landlord and/or Managing Agent, or their respective employees, agents, contractors, successors, or assigns; (ii) which arise out of and are directly caused by events occurring before Tenant took possession of the Premises; (iii) which occur after Landlord, its employees, agents, contractors, successors, or assigns have regained exclusive possession of the Premises; or (iv) which arise out of acts attributable to parties other than Tenant or its employees, agents, contractors, or invitees. The burden of proving the applicability of an exception to Tenant's indemnification obligation shall be on Tenant.

29. **PROPRIETARY INFORMATION.** Landlord recognizes the need for confidentiality and the proprietary nature of the work Tenant may perform in the Premises for itself or other third parties, and shall use commercially reasonable efforts to maintain the confidentiality of such work (including customer identity and relationships, products, business processes, equipment configuration and specifications and any other development, production or manufacturing processes or activities, collectively, the "***Proprietary Information***") being performed in the Premises, if at any time known to Landlord for any reason. Without limiting the foregoing, Landlord shall inform any third parties entering the Premises with or at the request or direction of Landlord of the proprietary and confidential nature of the work being performed therein, and, if requested by Tenant, in writing, and no Event of Default is continuing at the time of the request, Landlord shall obtain from any such third party(ies) a commercially reasonable non-disclosure and non-competition agreement that is reasonably acceptable to Tenant in form and substance, which shall be executed and delivered to Tenant prior to entry by that third party. Notwithstanding the foregoing:

(a) Proprietary Information shall not include any information that is: (i) already known to a Landlord Party or in its possession without restriction prior to the disclosure of such Proprietary Information by Tenant; (ii) publicly known at the time of disclosure or subsequently becomes publicly available through no fault of a Landlord Party; or (iii) received by a Landlord Party without restriction from a third party lawfully in possession of such information and lawfully empowered to disclose such information; and

(b) Landlord's obligations under this Section shall not prevent a disclosure which is: (i) necessary to enable Landlord to perform its obligations under this Lease; (ii) necessary to enable Landlord to enforce this Lease; and/or (iii) required by law, governmental regulation or court order to be disclosed.

No publicity or advertising in connection with this Lease shall be released without the prior written approval of all parties, which approval shall not be unreasonably withheld.

30. **EFFECT OF TERMINATION.** Upon a termination of this Lease, neither party shall have any further obligations under this Lease except as to: (a) those obligations which have accrued on or before the date of termination and remain unsatisfied; (b) the indemnification obligations set out in this Lease;

and/or (c) any obligations which by their nature would, or are expressly provided to, survive a termination of this Lease.

31. MISCELLANEOUS.

31.1. Interest. Any sums due to be paid by either party to or for the benefit of the other which are not paid when due shall bear interest from the due date to the date of payment at the lesser of the Interest Rate and the maximum legal interest rate permitted by law. Interest shall: (i) continue to accrue on past due sums at the Interest Rate after an entry of judgment; (ii) not be payable on any late charges incurred by Tenant; and (iii) not accrue if the payment is made in the applicable grace period provided under this Lease, if any.

31.2. Notices. To be effective, notices required under this Lease must be in writing and must either be: (a) personally served (deemed received on receipt or refusal of delivery); (b) delivered by a nationally recognized "*next business day*" express delivery service (deemed received the next business day after posting); (c) mailed by certified United States Mail, postage prepaid, return receipt requested (deemed received three business days after posting); or (d) delivered via electronic mail (deemed received on receipt of transmission), provided, however, that if such communication is given via electronic mail, an original counterpart of such communication shall concurrently be sent in either manner specified above. Each document shall be addressed/transmitted as set out in the Lease Term Sheet or at such other address as may from time to time be designated in writing in accordance with this Subsection. A copy of any default notices required to be sent to Tenant under this Lease shall be contemporaneously sent to:

Bandwidth Inc.
900 Main Campus Drive, Suite 500
Raleigh, North Carolina 27606
Attn: General Counsel
Email: legal@bandwidth.com

A copy of any default notices required to be sent to Landlord under this Lease shall be contemporaneously sent to:

Burns, Day & Presnell, P.A.
2626 Glenwood Avenue - Suite 560
Raleigh, North Carolina 27608
Attn: James M. Day/Emily D. Iverson
Email: jday@bdppa.com/eiverson@bdppa.com

Notices may be given on behalf of any party by that party's legal counsel and notices on behalf of Landlord may be given by the Managing Agent. Notwithstanding anything in this Lease to the contrary: (i) Statements and any demands for reimbursement may be posted by ordinary United States Mail; and (ii) parties to be copied on any notices need be copied only on notices of default.

31.3. Recording. This Lease shall not be recorded, but a memorandum of it (in the form attached as ***Exhibit H***) may, at the expense of the recording party, be prepared and recorded in the County where the Premises are located. Provided Landlord has given prior written notice to Tenant of Landlord's intent to record such notice, upon a termination of the Lease following an Event of Default, Landlord shall be entitled to record a notice of such termination on its own signature. This right shall survive a termination of the Lease.

31.4. Additional Acts. Each party will execute and deliver all other additional and necessary instruments and documents and do all other acts and things as may be reasonably necessary to more fully effectuate the transaction contemplated by this Lease.

31.5. Entire Agreement. This Lease constitutes the entire and exclusive agreement between the parties with respect to the leasing of the Premises. All prior agreements between the parties, whether oral or written, are merged into this document and shall be of no further force or effect. This Lease cannot be changed, modified or discharged other than by a written agreement signed by the party against whom enforcement of the change, modification or discharge is sought.

31.6. Binding Effect. Each and all of the covenants, terms, provisions, and agreements of this document shall be binding upon and inure to the benefit of the parties and, to the extent permitted by this Lease, their respective heirs, executors, administrators, legal representatives, successors and assigns; provided that Landlord shall have no obligation to Tenant's successor unless the rights or interests of Tenant's successor are acquired in accordance with the terms of this Lease.

31.7. Waiver. The delay or failure of either party to seek redress for violation of or to insist upon the strict performance of any covenant or condition of this Lease shall not prevent a prior or subsequent act, which would have originally constituted a violation, from having the effect of an original violation. Any waiver by a party of any breach or default by the other must be in writing and will be effective only to the extent specifically set forth in that writing. Except as subsequently may be expressly acknowledged in writing by Landlord, no acceptance of Rent by Landlord after an Event of Default shall constitute a waiver by Landlord of any Event of Default or otherwise reinstate, continue, or extend the Term or affect any notice of termination given to Tenant prior to Landlord's receipt of such payment. No statement on a payment check from Tenant or in a letter accompanying a payment shall be binding on Landlord and Landlord may, with or without notice to Tenant, accept such payment and/or negotiate such check without being bound to the conditions of such statement.

31.8. Binding Arbitration. Except for any court action: (i) seeking injunctive relief (e.g., summary ejectment), in which case such action shall be strictly limited to such matters only; (ii) seeking to challenge the enforceability of the binding arbitration provisions of this Lease; or (iii) filed after a court of competent jurisdiction has declared such arbitration provisions to be unenforceable, all controversies and disputes between the parties arising out of or related to this Lease or the relationship of the parties under this Lease, irrespective of the type of claim, shall be determined by binding arbitration under the North Carolina Revised Uniform Arbitration Act (the "***Act***"). The decision of the arbitrator shall be final and binding on all parties to that proceeding and a judgment upon the arbitrator's award may be entered in any court having jurisdiction thereof. Except as expressly provided otherwise in this Lease, a party may initiate an arbitration proceeding by sending written notice of such (the "***Arbitration Demand***") to the other Party at any time prior to the date the claim is barred by the applicable statute of limitations. That notice shall specify the nature of the dispute. The arbitration shall be held in Raleigh, North Carolina. Notwithstanding any provisions of the Act to the contrary: (a) the parties shall be entitled to conduct discovery as provided under the North Carolina Rules of Civil Procedure so long as that discovery is concluded within 90 days of the date of the Arbitration Demand; (b) the parties shall comply with Rule 3 (b) - (d) of the Rules for Court-Ordered Arbitration in North Carolina; and (c) the arbitrator shall have the authority to award injunctive relief and to impose sanctions under NCRCP Rule 11 and other applicable rules. All disputes relating to discovery which cannot immediately be resolved by the parties shall be submitted to the arbitrator for an expedited ruling. The arbitration shall be conducted by a single arbitrator mutually acceptable to the parties, or, if the parties are unable to agree upon a single arbitrator within 20 days of the date of the Arbitration Demand, then by a single arbitrator appointed by a Wake County Superior Court Judge. Unless the arbitrator awards otherwise, the cost of the arbitration shall be ratably borne by the parties to the proceeding.

31.9. Jurisdiction. This Lease shall be deemed executed and completed in North Carolina; the courts of North Carolina shall have exclusive jurisdiction over any matters (including torts) relating to or arising out of this Lease or the relationship of the parties under this Lease; and by their signatures below, the parties consent to the exclusive, personal jurisdiction by the courts of North Carolina and to venue in Wake County, North Carolina and irrevocably waive any objection thereto.

31.10. Time. Time is of the essence in connection with each and every provision of this Lease. If any time period under this Lease ends on a Saturday, Sunday, or any day on which the state courts of Wake County, North Carolina are closed, that time period shall be extended until the next business day.

31.11. __Representations and Warranties__. Each party, for itself, represents and warrants to the other that:

(i) It is duly constituted, in good standing, and qualified to do business in the State of North Carolina; it has the right, power, and authority to enter into this Lease and all related documents to be executed by it (collectively, the "***Lease Documents***") and to perform its obligations under the Lease Documents, as written; the execution and delivery of the Lease Documents have been duly authorized and the signatories signing on its behalf have the requisite authority to bind it to the obligations under the Lease Documents; and the Lease Documents constitute its valid and legally binding obligations, enforceable against it in accordance with their terms;

(ii) The execution and delivery of the Lease Documents, and the performance of its duties and obligations under the Lease Documents and of all other acts necessary and appropriate for the full consummation of this Lease, are consistent with and not in violation of any contract, agreement or other instrument to which it is a party, or any judicial order or judgment of any nature by which it is bound; and

(iii) It is not, and will not become, an entity with whom U.S. persons are restricted from doing business under the regulations of the Office of Foreign Asset Control ("***OFAC***") of the Department of Treasury (including those named on OFAC's Specially Designated and Blocked Persons list) or under any statute, executive order (including the September 24, 2001 Executive Order Blocking Property and Prohibiting Transactions With Persons Who Commit, Threaten to Commit, or Support Terrorism), the USA Patriot Act, or other governmental action.

The foregoing representations and warranties are made by each party with the knowledge and expectation that the other is placing complete reliance thereon and shall survive the execution of this Lease. Each party will not cause or permit any action to be taken which will cause any of its representations or warranties to be untrue. Each party agrees to indemnify and hold the other harmless from all liabilities, claims, losses, damages, and expenses (including reasonable attorneys' fees) relating to or arising out of a breach of these representations and warranties. This indemnification obligation shall survive the termination of this Lease.

32. **ADDITIONAL LEASE PROVISIONS.** Additional provisions of this Lease are contained in the attached Exhibits. These additional provisions shall control if in conflict with any of the foregoing provisions of this Lease.

[Signatures on Next Page]

IN WITNESS WHEREOF, the undersigned have executed, sealed, and delivered this Lease as of the date first above written.

LANDLORD:

Keystone-Centennial II, LLC,
a North Carolina limited liability company

By Its Manager:

Keystone Corporation,
a North Carolina corporation

By: ______________________ (SEAL)
Name: James C. Little
Title: COO & CFO

TENANT:

Bandwidth Inc.,
a Delaware corporation

By: ______________________ (SEAL)
Name/Title: David A. Morken, Chief Executive Officer

IN WITNESS WHEREOF, the undersigned have executed, sealed, and delivered this Lease as of the date first above written.

LANDLORD:

Keystone-Centennial II, LLC,
a North Carolina limited liability company

By Its Manager:

Keystone Corporation,
a North Carolina corporation

By: ____________________________ (SEAL)
Name: James C. Little
Title: COO & CFO

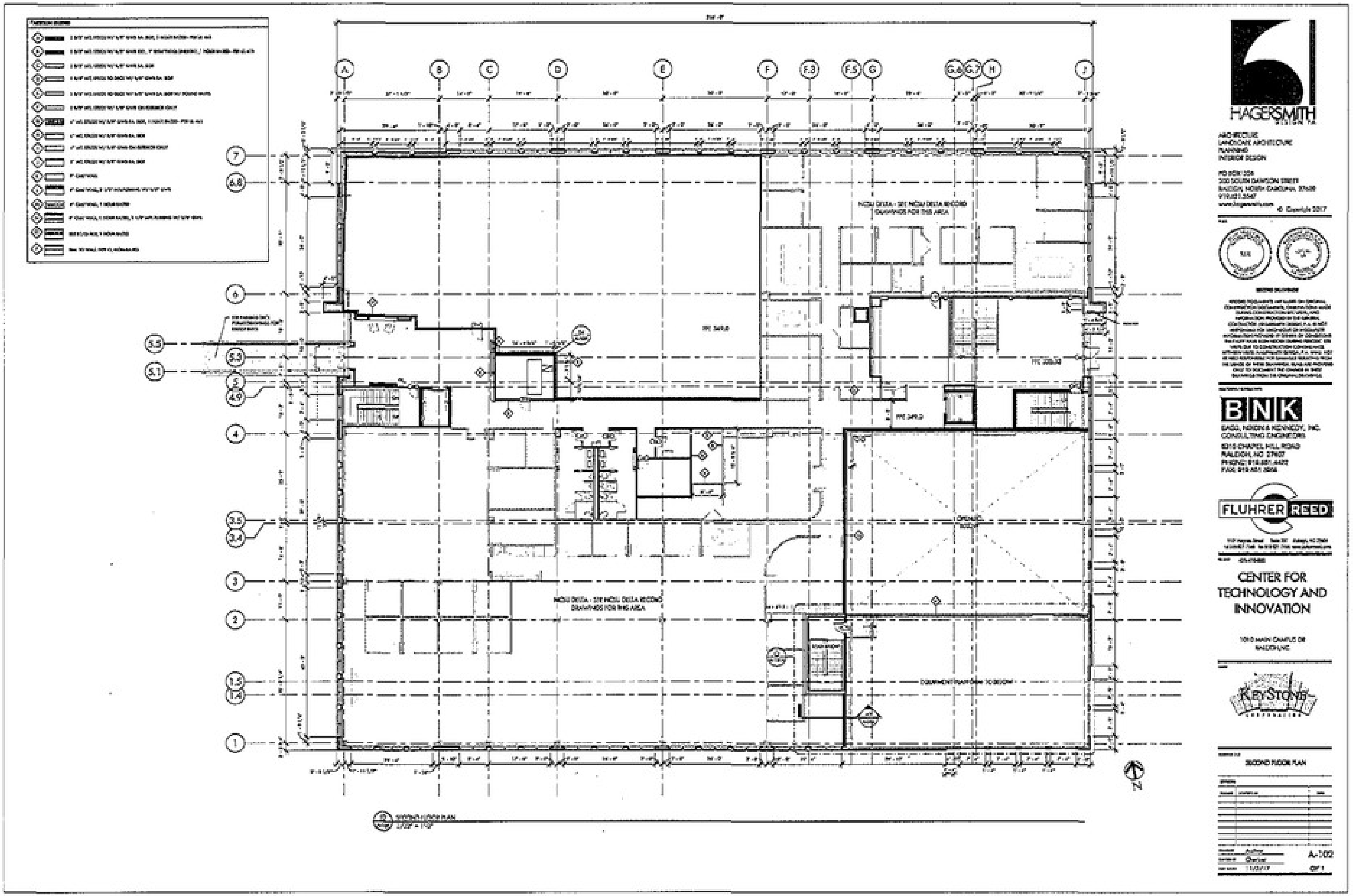
TENANT:

Bandwidth Inc.,
a Delaware corporation

By: ____________________________ (SEAL)
Name/Title: David A. Morken, Chief Executive Officer

EXHIBIT A
Premises Description

[Attach]



HAGERSMITH
ARCHITECTURE
LANDSCAPE ARCHITECTURE
PLANNING
INTERIOR DESIGN
BNK
FLUHRER REED
CENTER FOR TECHNOLOGY AND INNOVATION
KEYSTONE
SECOND FLOOR PLAN
A-102
OF 1
NCSU DELTA - SEE NCSU DELTA RECORD DRAWINGS FOR THIS AREA
EQUIPMENT PLATFORM TO BELOW
N

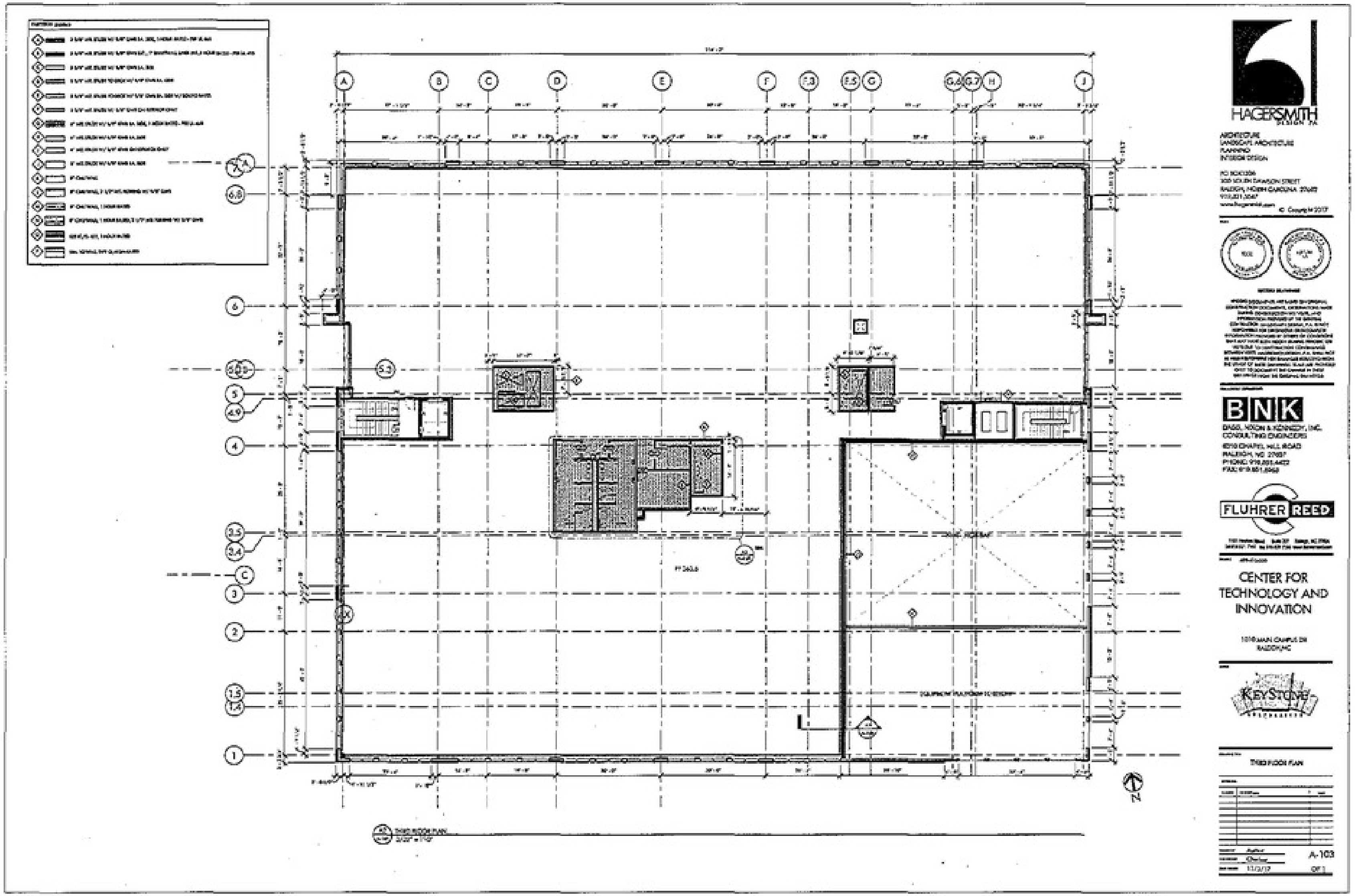

HAGERSMITH
DESIGN PA
ARCHITECTURE
LANDSCAPE ARCHITECTURE
PLANNING
INTERIOR DESIGN
300 SOUTH DAWSON STREET
RALEIGH, NORTH CAROLINA
© Copyright 2017
BNK
BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
6310 CHAPEL HILL ROAD
RALEIGH, NC 27607
FLUHRER REED
CENTER FOR
TECHNOLOGY AND
INNOVATION
KEYSTONE
THIRD FLOOR PLAN
A-103
THIRD FLOOR PLAN

EXHIBIT B
Renewal Option

Provided at the time of exercise, there is not (i) a continuing Event of Default, or (ii) a default for which Landlord has provided notice to Tenant (unless such default is still within the cure period and is subsequently cured within the applicable cure period, in which case Tenant's right to exercise the Renewal Option shall continue), Tenant shall have an option to renew this Lease (the "***Renewal Option***"), for an additional five years (the "***Renewal Term***"). The Renewal Term shall be on the same terms and conditions of this Lease, including the Base Rent as provided in ***Exhibit E***.

If Tenant elects to exercise the Renewal Option, it shall give written notice to Landlord at least 365 days prior to the then scheduled Expiration Date. Provided the Renewal Option has been properly exercised, it shall be irrevocable and wherever the term "*Term*" appears in this Lease, it shall include the Renewal Term and the Expiration Date shall be extended for the length of the Renewal Term. The Renewal Option is personal to the original Tenant and shall automatically expire on an assignment of this Lease or a subletting of the Premises by the original Tenant, except in the case of an assignment to an Affiliated Entity.

EXHIBIT C
Building Improvements

The Building will be delivered in a "*warm shell*" condition and include the following:

Location: The Building is located within NCSU's Centennial Campus on the corner of Research Drive and Main Campus Drive.

LEED Certification: The shell of the Building will be designed and constructed as a LEED Silver building incorporating energy efficient design and sustainable features.

Space: The Building will be three stories and contain approximately 104,998 rentable square feet.

Construction: The Building will be constructed as a Type II B- Fully Sprinkled

Structural System: Composite steel frame and concrete floor slab system. The upper leasable floors in the Building will be designed for 100 lb. /sf floor loading. The floor to floor heights at these levels will be approximately 15'-4".

Exterior facade: The exterior walls will be constructed of brick veneer masonry with aluminum panel detailing over 2" rigid insulation on metal studs with 2" spray foam in the cavity.

Curtain Wall: Pre-finished aluminum curtainwall system with 1" tinted insulated high performance glass with low-e coating.

Windows: The window system is a thermally improved aluminum framing system with 1" insulated high performance glass. Windows typically start at 2'-0" above finished floor and extend to 9'-0" AFF.

Roof: Single-ply mechanically fastened TPO roof membrane over mechanically fastened R-30 insulation.

Shared Common Areas:

-- **1st Floor Common Areas:** The first floor is accessed from the drive off of Research Drive and the adjacent parking deck. There is a shared exterior dock for truck access and a wide corridor that leads to the service elevator and elevator lobby. This first floor elevator lobby contains terrazzo floors, painted walls, accent wood paneling, and electronic building directory. Tenant mailboxes, modern restrooms, and stairs are also located directly off this lobby.

-- **2nd Floor Common Areas:** The second floor is accessed from two separate sides of the Building. One access is along Main Campus Drive and contains the larger formal building lobby. This two-story lobby contains terrazzo floors, painted walls, accent wood paneling, open ceiling with acoustical clouds, and a state of the art electronic building directory. An open stairwell in the middle of this lobby leads to a lounge area with a large screen television, seating, vending machines, and a large custom piece of artwork. The other side of the second floor is accessed from a bridge that spans from the adjacent parking deck to the Building. This side has an elevator lobby similar in size to the ground floor elevator lobby. This first floor elevator lobby contains terrazzo floors, painted walls, accent wood paneling, and a state of the art electronic building directory for way-finding. Modern restrooms are located off a shared corridor.

-- **3rd Floor Common Area:** The majority of the third floor is intended for tenant use. There is a restroom core and this floor is served by two egress stairs.

Elevators: Two traction passenger elevators will be provided: (i) an elevator with a capacity of 3500 pounds and a speed of 150 fpm; and (ii) a larger 4500 pound service elevator. The elevator cabs will have custom cab wall treatments with polished stainless steel ceiling and flooring to match lobby.

Parking Deck: The parking deck will contain approximately 283 parking spaces. It will be constructed of precast concrete throughout, with the front of the deck facing Research Drive receiving a brick façade that compliments the adjacent building's architectural design. There are two stairs for vertical circulation, and a bridge on the highest level that connects to the 2nd floor of the Building over the access drive. There will be controlled gate access within this parking deck.

Mechanical System: The mechanical system includes all heating, ventilating, and cooling equipment and associated electrical and control wiring to supply conditioned air. The Building is served by chilled water and gas-fired condensing boilers (for preheat). Heating and air conditioning for the Building will be provided by chilled-water rooftop units. Medium pressure duct and exterior fan-powered box (FPB) units with electric reheat are installed for exterior exposures.

Each FPB unit contains a damper that modulates to control the amount of air delivered to the space it is serving. The damper position is controlled by the space thermostat. During the cooling season the cooled air shall be approximately 55° F. During the heating season the damper closes to a minimum position and the integral fan is powered on. The fan pulls air from the return air plenum and pushes air across the electric heating coils. This heated air is delivered to the space until the thermostat setpoint is met.

Tenants with spaces other than a typical office may require additional supplemental units and/or exhaust systems in their fit-up. Variable air volume boxes (dampers that serve interior areas) will be part of the tenant upfit.

Energy Management System: Computerized DDC energy management system and controls providing maximum comfort and minimizing energy consumption.

Plumbing System: A complete system of plumbing will be installed, consisting of sanitary drainage, storm drainage, and hot and cold water throughout the Building. Restrooms will be provided with auto-flush valve and infrared touch-less faucets.

Fire Protection System: The Building will be fully sprinkled per NFPA 13. Sprinkler heads in lay-in ceilings will be the white semi-recessed type and be installed centered in ceiling tiles. Sprinkler heads will be installed turned up in the tenant spaces due to the lack of a ceiling and then turned down as part of a tenant upfit.

Electrical System: The main service for the 2nd and 3rd floors of the Building is a 277/480V 2500 amp main switchboard and distribution panels for HVAC, lighting and convenience power are installed. Each floor is fed via a 400 amp HVAC and a 400 amp lighting panel which are 277/480V. The lighting panel in turn feeds two 75kVA transformers on each floor and two 120V panels per transformer for power. Each panel is protected via a TVSS.

Fire Alarm: The Building will be equipped with a state of the art addressable fire alarm system, which is monitored 24 hours per day, 7 days a week.

Shell Tenant Space: As described in the as-built plans and specs delivered by Landlord to Tenant prior to the execution of the Lease (the "***As-built Plans***").

EXHIBIT D
Tenant Upfit

D-1. **Plans & Specs.** The Plans & Specs shall be subject to the reasonable approval of both parties. Once approved, a copy of the approved Plans & Specs (the "***Approved Plans & Specs***") shall be initialed by each party in a separate instrument. If, despite reasonable efforts, the parties cannot agree on the Plans & Specs before the Plans & Specs Approval Deadline, either party, as its sole and exclusive remedy, may submit such dispute to Binding Arbitration. Once approved, no material changes to the Approved Plans & Specs may be made without both parties' reasonable prior written consent. All approved changes shall be made in the form of a written change order, signed by Landlord and Tenant, (a "***Change Order***") setting forth the increased costs and/or anticipated delay in completion, if any, caused by that Change Order. Tenant shall be solely responsible for any increased costs, including any applicable supervision fees, resulting from a Change Order requested by Tenant to the extent in excess of the Tenant Upfit Allowance.

D-2. **TU Budget.** The TU Budget shall be subject to the reasonable approval of both parties and shall include the MA Fee (defined below). Once approved, a copy of that approved TU Budget (the "***Approved TU Budget***") shall be initialed by each party in a separate instrument. If, despite reasonable efforts, the parties cannot agree on the TU Budget by the TU Budget Approval Deadline, either party, as its sole and exclusive remedy, may submit such dispute to Binding Arbitration. Tenant shall be solely responsible for any TU Costs that exceed the Approved TU Budget.

D-3. **Construction Supervision.**

D-3.1. *Services.* During the Term, the Managing Agent shall perform services with respect to the Tenant Upfit (collectively, the "***Upfit Services***"), including the following:

(a) Reviewing the Plans & Specs;

(b) Assisting Tenant in getting competitive bids for the scope of work included in Approved Plans & Specs from at least three local general contractors (including Innertech);

(c) Attending a limited number of design and construction meetings on an as needed basis; and

(d) Coordinating construction of the Tenant Upfit with other tenants in the Building.

For avoidance of doubt, neither Landlord nor Managing Agent shall have any responsibility for: (i) entering into any contracts with the General Contractor or any other contractors with respect to the Tenant Upfit; (ii) obtaining any permits for the Tenant Upfit; (iii) inspecting the Tenant Upfit for compliance with the Approved Plans & Specs or any other reason or, if they do inspect, reporting any condition or defect to Tenant or the General Contractor; (iv) supervising or monitoring the General Contractor, the Tenant's architect, or any other contractors or suppliers involved in the Tenant Upfit; (v) reviewing, approving, or processing any of the General Contractor's draw requests; or (vi) reviewing or approving any Change Orders.

D-3.2. *Fees.* The Managing Agent shall receive a fee for the Upfit Services (the "***MA Fee***"). The total MA Fee due from Tenant shall equal 1.5% of the total TU Costs incurred in the construction of the Tenant Upfit. The MA Fee shall be earned throughout the construction period and paid in installments (the "***Installments***") as and when the General Contractor is paid for the costs it has incurred in constructing the Tenant Upfit. Each Installment shall equal 1.5% of the draw request filed by the General Contractor under its construction contract with Tenant and shall be paid within 15 days of the General Contractor's submission of each draw request. To the extent sufficient funds remain in the Tenant Upfit Allowance, the Installments shall be paid to Managing Agent by Landlord and such amounts credited as payments of the Tenant Upfit Allowance. To the extent necessary, thereafter the Installments shall be paid to Managing Agent by Tenant within 15 days of the General Contractor's submission of each subsequent draw request.

EXHIBIT E
Base Rent Schedule

LEASE PERIOD (Mos.)*	INSTALLMENT AMOUNT
1 - 12	$99,253.44
13 - 24	$102,231.04
25 - 36	$105,297.97
37 - 48	$108,456.91
49 - 60	$111,710.62
61 - 72	$115,061.94
73 - 84**	$118,513.79
85 - 96	$122,069.21
97 - 108	$125,731.29
109 - 120	$129,503.22
121 - 132	$133,388.32
133 - 144	$137,389.97

** The "Lease Periods" are calculated from the Rent Commencement Date.*

***Rent after the 84th month is applicable only if Tenant timely and properly exercises the Renewal Option.*

EXHIBIT F
RULES AND REGULATIONS

Tenant shall faithfully observe and comply with the following Rules and Regulations. Landlord shall not be responsible to Tenant for the nonperformance of any of these Rules and Regulations by, or otherwise with respect to the acts or omissions of, any other tenants or occupants of the Building.

(1) The sidewalks, walks, plaza entries, corridors, concourses, ramps, staircases, escalators and elevators shall not be obstructed or used by Tenant, or any person entering the Building under express or implied invitation of Tenant, for any purpose other than ingress and egress to and from the Premises. Except for those used in connection with Tenant's research being conducted at the Premises, no vehicle shall be brought into the Building or kept on the Premises without Landlord's prior written consent.

(2) Except as reasonably necessary in connection with the construction of the Tenant Upfit, no freight, furniture, or bulky matter (not in the ordinary course of business) of any description shall be received into the Building or carried into the elevators except in such a manner, during such hours, and using such elevators and passageways as may be reasonably approved by Landlord, and then only upon having been scheduled in advance. Any hand trucks, carryalls or similar appliances used for the delivery or receipt of merchandise or equipment shall be equipped with rubber tires, side guards and such other safeguards as Landlord shall require.

(3) At the time of the Tenant Upfit or any Alterations, Landlord shall have the right to prescribe the weight, position, and manner of installation of safes, concentrated filing/storage systems, or other heavy equipment which shall, if considered necessary by Landlord, be installed in a manner, which may require reinforcement of the Building's structure (at Tenant's cost and expense) to insure satisfactory weight distribution. All damage done to the Building by reason of a safe or any other article of Tenant's office equipment being on the Premises shall be repaired at the expense of Tenant. The time, routing, and manner of moving safes or other heavy equipment shall be subject to Landlord's reasonable prior written approval.

(4) Only persons reasonably authorized by Landlord shall be permitted to furnish towels, barbering, shoe shining, floor polishing in the Common Areas and other similar services and concessions to Tenant, and only at hours and under regulations fixed by Landlord.

(5) Tenant shall not at any time, cause or allow the placement, leaving or discarding of any rubbish, paper, articles or objects of any kind whatsoever outside the doors of the Premises or in the corridors or passageways of the Building.

(6) Landlord shall have the right to prohibit any advertising by Tenant which, in Landlord's opinion, tends to impair the reputation of the Building or its desirability for offices, and, upon written notice from Landlord, Tenant shall refrain from or discontinue such advertising.

(7) Tenant shall not place, or cause or allow to be placed, any signage, lettering or graphics whatsoever, in or about the Premises except in and at such places as may be designated by Landlord and consented to by Landlord in writing, prior to the installation of such signage, lettering or graphics. All signage, lettering and graphics on corridor doors and walls shall conform to the Building standard prescribed by Landlord. Any signage, lettering or graphics located in the Premises that is visible to the public must be approved, in writing, by Landlord prior to installation thereof. Tenant may display trademarks on interior walls and doors of the Premises.

(8) Canvassing, soliciting or peddling in the Building is prohibited and Tenant shall cooperate to prevent same.

(9) Landlord shall have the right to exclude any person from the Building other than during customary business hours for unlawful, lewd behavior, or unreasonable disturbance,.and any person in the Building shall be subject to identification by employees and agents of Landlord. All persons in or entering the Building shall be required to comply with the security policies of the Building. If Tenant

desires any additional security services for the Premises, Tenant shall have the right (only with the advance written consent of Landlord) to obtain such additional services at Tenant's sole cost and expense. Tenant shall keep doors to unattended areas locked and shall otherwise exercise reasonable precautions to protect property in the Building and the Premises from theft, loss or damage.

(10) Only workers employed, designated, or reasonably approved by Landlord may be employed for repairs, installations, alterations, painting, material moving and other similar work that may be done to the Premises.

(11) Tenant shall not do or allow any cooking or conduct any restaurant, luncheonette, automat or cafeteria for the sale or service of food or beverages to its employees or to others, nor shall Tenant provide any vending machines in the Common Areas without Landlord's prior written consent. Tenant may, however, provide, at Tenant's cost and expense, microwave oven(s), refrigerator(s) and coffee machine(s) in a designated break room/area(s) of the Premises for use by Tenant's employees and invitees.

(12) Tenant shall not bring, or cause or allow to be brought or kept in or on the Premises, the Building or the Campus, any bleach, inflammable, combustible, corrosive, caustic, odorous, poisonous, toxic or explosive substance or any substance deemed to be a hazardous or toxic material under any applicable environmental law or regulation except to the extent such materials are common in an office building and used in accordance with applicable environmental law and regulation.

(13) Tenant shall not mark, paint, drill into or in any way deface any part of the Building or the Premises. No boring, driving of nails or screws, cutting or stringing of wires shall be permitted, except with Landlord's prior written consent, and as Landlord may direct; provided, however, that Tenant shall be permitted to install or hang usual and customary office artwork and dryboards without Landlord's prior written consent. Tenant shall not install coat hooks, identification plates or anything else on doors nor any resilient tile or similar floor covering in the Premises except Landlord's reasonable prior written approval. The use of cement or other similar adhesive material is expressly prohibited.

(14) Tenant shall not place any additional locks or bolts of any kind on any door in the Building or the Premises or change or alter any lock on any door therein in any respect without Landlord's prior reasonable approval. Landlord shall furnish two keys for each lock on exterior doors to the Premises, and two keys (conventional or card type) for one or more exterior doors to the Building, and shall, on Tenant's request and at Tenant's expense, provide additional duplicate keys. Tenant shall not make any duplicate keys. All keys shall be returned to Landlord upon the termination of this Lease, and Tenant shall give to Landlord the explanation of the combination of all safes, vaults, and combination locks in the Premises. Landlord may at all times keep a pass key to the Premises. All entrance doors to the Premises shall be left locked when the Premises are not in use.

(15) Tenant shall give reasonably prompt notice to Landlord in case of its discovery of any theft, unauthorized solicitation or accident in the Premises or in the Building or of defects therein or in any fixtures or equipment, or of any known emergency in the Building.

(16) Tenant shall place a water-proof tray under all plants in the Premises and shall be responsible for any damage to the floors, carpets, and/or any other damage caused by over-watering such plants.

(17) Tenant shall not use the Premises or allow the Premises to be used for photographic, multilith, multigraph or digital reproductions, except in connection with its own business and not as a service for others, without Landlord's prior written permission.

(18) Tenant shall not use or permit any portion of the Premises to be used for any uses other than those specifically granted in Tenant's Lease.

(19) Tenant shall not advertise for laborers (*i.e.* those who perform physical labor outdoors) giving the Premises as an address, nor pay such laborers at a location in the Premises.

(20) Employees of Landlord or Landlord's agent(s) shall not perform any work or do anything outside of their regular duties, unless under special instructions from Landlord or Landlord's agent(s).

(21) Provided that Landlord provides Tenant with the applicable specifications, Tenant shall not place a load upon any floor of the Premises which exceeds the load per square foot which such floor was designed to carry as described in the As-built Plans and which is allowed by law, regulation, or code. Business machines and mechanical and electrical equipment belonging to Tenant which cause noise, vibration, electrical or magnetic interference, or any other nuisance that may be transmitted to the structure or other portions of the Building or to the Premises to such a degree as to be objectionable to Landlord or which interfere with the use or enjoyment by other tenants of their Premises or the public portions of the Building, shall be placed and maintained by Tenant, at Tenant's expense, in settings of cork, rubber, spring type or other vibration eliminators sufficient to eliminate noise or vibration.

(22) ***Intentionally Omitted***

(23) No solar screen materials, awnings, draperies, shutters or other interior or exterior window coverings that are visible from the exterior of the Building or from the exterior of the Premises within the Building may be installed by Tenant. Building-standard mini blinds shall not be pulled up or removed, but may be opened using the "wand".

(24) Tenant shall not place, install or operate within the Premises or any other part of the Building any engine, stove or machinery, or conduct mechanical operations therein, without Landlord's prior written consent.

(25) No portion of the Premises or any other part of the Building shall at any time be used or occupied as sleeping or lodging quarters.

(26) For purposes of this Lease, holidays shall be deemed to mean and include the following: (a) New Year's Day; (b) Memorial Day; (c) Independence Day; (d) Labor Day; (e) Thanksgiving Day and the Friday following; and (f) Christmas Day. If any such holiday occurs on a weekend, then the holiday shall be the day such holiday is legally observed.

(27) Tenant shall at all times keep the Premises neat and orderly.

(28) Tenant shall use no other method of heating or cooling than that supplied by Landlord or approved by Landlord.

(29) ***Intentionally Omitted.***

(30) The toilet rooms, urinals, wash bowls and other plumbing apparatus shall not be used for any purpose other than that for which they were constructed, and no foreign substance of any kind whatsoever shall be thrown therein. Furthermore, no acid(s), chemical(s), Hazardous Substances, or toxic materials shall be poured or placed into any laboratory sink, drain or other plumbing apparatus.

(31) Tenant shall keep corridor and lobby doors closed when not in use.

(32) All permitted alterations and additions to the Premises must conform to applicable building and fire codes. Other than Landlord's work in delivering the initial Tenant Upfit, Tenant shall obtain prior approval from applicable building and fire officials and, as contemplated by ***Section 8***, Landlord with respect to any such modifications and shall deliver "*as-built*" plans therefor to the property manager for the Building on completion.

(33) It is the intent of both Landlord and Tenant that any portion of the Premises visible to the public hold a high quality professional image at all times. If, at any time during the Term, Landlord or Landlord's agent deems such visible area to hold less than a high quality professional image, Landlord shall advise Tenant of desired changes to be made to such area to conform to the intent of this paragraph. Within three business days, Tenant shall cause the desired changes to be made, or present Landlord with a plan for accomplishing such changes. Tenant shall have such additional time as is

reasonably required to implement the plan, not to exceed two months; provided, however, that if Tenant is not diligently pursuing the plan for accomplishing such changes within 10 business days, or does not implement the plan within two months, then Landlord may provide draperies or blinds for the glassed area at Tenant's expense, and Tenant shall keep such draperies or blinds closed at all times.

(34) Any carpet and wall coverings located in the Premises that is visible to the public must be consistent in color and style with the carpet and wall coverings located in the lobby area of the Building and must be reasonably approved by Landlord prior to installation. This rule shall not apply to any space located on a floor of the Building where Tenant has leased all of the rentable space for that floor.

(35) The Building has been designated a "*non-smoking*" building. Tenant, and all persons entering the Building under the express or implied invitation of Tenant are prohibited from smoking in the common areas both inside and outside of the Building, except in those areas outside the Building designated as smoking areas by Landlord.

(36) No animals, except for "service animals" trained to assist disabled persons, shall be brought or kept in or about the Premises or the Building without Landlord's prior written consent.

(37) Tenant shall not play or allow the playing or the generation of (i) any music or loud noise in the common areas of the Building without Landlord's prior written consent and/or (ii), any loud music or loud noise in the Premises, as determined by Landlord in Landlord's reasonable discretion.

(38) Tenant shall not cause or allow any odors and/or fumes deemed obnoxious or otherwise unreasonable by Landlord, in Landlord's reasonable discretion, to permeate or emanate from the Premises.

(39) Tenant shall not bring, or cause or, to the extent in Tenant's control, allow to be brought, any firearms, ammunition or weapons of any kind, whether concealed or otherwise, into the Building at any time.

(40) Subject to the terms of the Lease, Landlord reserves the right to rescind, amend and add Building Rules, and to waive Building Rules with respect to any tenant or tenants.

EXHIBIT G
RADIOACTIVE MATERIALS/RADIOACTIVE EQUIPMENT REQUIREMENTS

Conditions of Use: Ionizing Radiation Producing Equipment and Radioactive Materials

Tenant shall be responsible for performing all actions associated with licensing or registration and for all activities associated with compliance with the rules and regulations in the "*North Carolina Regulations for Protection Against Radiation*" ("***15A NCAC 11***"). License applications or equipment registration activities are strictly between Tenant and the State of North Carolina Radiation Protection Section. Landlord in no way serves as an agent for Tenant in this regard nor shall Landlord be responsible for furnishing any special Building features or services to support these activities.

Tenant shall be responsible for providing the NCSU Radiation Safety Division with a copy of its current licenses/registrations and any other requested documentation. The NCSU Radiation Safety Division may visit the Premises or inspect the activities of Tenant with respect to these licenses and/or registered activities. Upon termination of this Lease, Tenant is solely responsible for removing or transferring all such registered or licensed devices or material at Tenant's sole cost and expense.

Tenant shall be responsible for developing emergency plans and notification procedures as required by federal, state, or municipal agencies and for supplying copies of these approved documents to Landlord.

I. *Ionizing Radiation Producing Equipment*

Tenant shall be responsible for ensuring that Ionizing Radiation Producing Equipment, such as x-ray units, electron microscopes, gas chromatographs with electron capture devices, and particle accelerators, etc., are procured, registered or licensed, and used in full compliance with the rules and regulations published in the most current version of 15A NCAC 11, and the conditions of use as listed below.

II. *Radioactive Materials*

(A) Licensed Radioactive Materials. Tenant shall be responsible for ensuring that Licensed Radioactive Materials are procured and used in full compliance with the "*General Licensing*" provisions of the U.S. Nuclear Regulatory Commission as adopted by the State of North Carolina in 15A NCAC 11. Tenant shall comply fully with all aspects of the General License requirements, and Tenant expressly acknowledges and agrees that all licenses for the use of radioactive materials shall be reviewed and approved by the NCSU Radiation Safety Division prior to submittal to the State of North Carolina Radiation Protection Section.

(B) Radioactive materials covered as either source material exempt (15A NCAC 11.0302) or as exempt quantities other than source material (15A NCAC 11.0304) or under a specific license (including License of Broad Scope). Tenant shall be responsible for ensuring that radioactive material in this category is procured, used, transferred, and disposed of in full compliance with the rules and regulations published in the most current version of the 15A NCAC 11 and that all licenses for use of radioactive material or registration of radiation producing devices are reviewed by the NCSU Radiation Safety Division prior to submittal to North Carolina Radiation Protection Section. Landlord also specifically requires that:

(i) Tenant's use will not result in any disposal of radioactive materials to the sanitary sewer or to the atmosphere in excess of permit limits (under EPA, NRC, and NC DENR). Landlord requires that this be a condition of the license application. Other Landlord requirements may apply.

(ii) Tenant shall dispose of all radioactive waste in accordance with all license conditions, and in accordance with all applicable NCSU requirements. On-site storage of radioactive waste generated by Tenant shall be limited, pursuant to license conditions and subject to approval by NCSU. The disposal methods for this material must be documented in the radiation safety program and license application.

(iii) Tenant shall be responsible for ensuring that its use is consistent with any other permits and/or agreements between NCSU, the State of North Carolina and/or the United States Environmental Protection Agency related to protection of the environment.

(iv) Landlord will not consider this Lease terminated or expired until Tenant demonstrates, or, at Landlord's option, Tenant obtains, at Tenant's sole cost and expense, an independent, third-party, duly licensed, expert (*i.e.,* having at least five years' experience, hereinafter, a "qualified expert") certification, that all radioactive material has been removed from the Premises and that any remaining radioactive contamination is not in excess of acceptable limits (15A NCAC 11), including from all surfaces and from within hoods and sinks and associated conduits. Landlord also reserves the right to hire, at Tenant's sole cost and expense, a second qualified expert to take any measurements as such qualified expert may deem necessary with regard to determining whether all radioactive material has been removed and whether any remaining contamination is in excess of acceptable limits, which may include the review of previous qualified expert certifications.

III *Non-Ionizing Radiation Producing Equipment*

Non-ionizing radiation producing equipment, including lasers and microwave sources, shall comply with North Carolina regulations and the appropriate American National Standards Institute standards, *e.g.,* ANSI Z136 for lasers. Tenant is responsible for providing the NCSU Radiation Safety Division (or other appropriate entity(ies)) with a current written inventory of all such equipment. The Radiation Safety Division may require copies of pertinent documents demonstrating compliance with appropriate regulations. Tenant shall supply copies thereof to Landlord.

EXHIBIT H
Lease Memorandum

Prepared By & Hold For: Burns, Day & Presnell, PA (JMD) - Box 35

NORTH CAROLINA
WAKE COUNTY

MEMORANDUM OF LEASE

Pursuant to that unrecorded Lease Agreement dated January ___, 2018, (the "***Lease***"), **Keystone-Centennial II, LLC**, a North Carolina limited liability company, as Landlord, in consideration of the rents and other considerations specified in the Lease, has leased to **Bandwidth Inc.**, a Delaware corporation, as Tenant, certain space in that building located at 1010 Main Campus Drive in Raleigh, North Carolina, (the "***Premises***"). The Tenant's rights under the Lease commenced as of the date of the Lease and will terminate on or about August 31, 2025; provided that Tenant also has an option to extend the Lease, for an additional five years.

This Memorandum is not a complete summary of the Lease Agreement and is subject to all the conditions, terms, and provisions of that document, which is incorporated into this instrument by this reference. Provisions in the Memorandum shall not be used in interpreting the Lease. In the event of conflict between the Memorandum and the Lease, the Lease shall control.

Upon a valid termination of the Lease in accordance with its terms, Landlord shall be entitled to record a notice of that termination on its own signature. This right shall survive a termination of the Lease.

[Signatures on Next Two Pages]

IN WITNESS WHEREOF, the undersigned have executed, sealed, and delivered this instrument as of the date first above written.

LANDLORD:

Keystone-Centennial II, LLC,
a North Carolina limited liability company

By Its Manager:

Keystone Corporation,
a North Carolina corporation

By: ___________________________
Name: James C. Little, COO & CFO

WAKE COUNTY, NORTH CAROLINA

The undersigned Notary Public certifies that the following person personally appeared before me this day, acknowledging to me that he/she voluntarily signed this document on behalf of Landlord for the purpose stated therein and in the capacity indicated: James C. Little.

Date: January ___, 2018

(Official Seal)

____
Notary Public
Printed Name:_____________________
My commission expires:______________

TENANT:

Bandwidth Inc.,
a Delaware corporation

By: ______________________
Name/Title: David A. Morken, Chief Executive Officer

WAKE COUNTY, NORTH CAROLINA

The undersigned Notary Public certifies that the following person personally appeared before me this day, acknowledging to me that he/she voluntarily signed this document on behalf of Tenant for the purpose stated therein and in the capacity indicated: CEO.

Date: January 12, 2018

(Official Seal)

JENNIFER ACEVEDO
NOTARY PUBLIC
WAKE COUNTY, NC
My Commission Expires 3/17/2020

____
Notary Public
Printed Name: Jennifer Acevedo
My commission expires: 03/17/2020

EXHIBIT I
Janitorial Service Schedule

General - The janitorial services to be provided by Landlord under this Lease shall cover all areas of the Premises, other than any laboratory areas, mechanical rooms or electrical rooms and shall consist of the following:

Restrooms - Daily

- Wash all mirrors
- Wash hand basins and bright work with nonabrasive cleaner
- Wash urinals and bright work
- Damp mop floor
- Damp wipe and clean where necessary (walls and partitions are to be free of hand prints and dust)
- Replenish hand soap, towels, tissues, and feminine supplies
- Partition and ventilating louvers are to be damp wiped weekly
- Machine scrub floors with approved germicidal detergent solution on a monthly basis.

Toilet bowl brush shall be used on toilet bowls, and care shall be given to clean flush holes under the rim of bowls and passage traps. Bowl cleaner shall be used nightly.

Offices

Vacuuming - Daily/Weekly
All rugs and carpets in office areas, as well as public spaces, shall be vacuumed daily in all traffic areas. Hard to reach places such as under desks and chairs shall be vacuumed weekly. All non-carpeted floor areas shall be dust mopped with a treated yarn dust mop. Dust mopping shall be performed after furniture has been dusted.

Vacuuming - Monthly
All ceiling and wall air supply and exhaust diffusers or grills shall be vacuumed once monthly.

Furniture, etc., Dusting - Daily
All unobstructed furniture, office equipment and appliances, window sills, etc. shall be dusted with a treated cloth or static duster. This shall include all horizontal surfaces up to 84 inches high. Enough vertical surfaces shall be cleaned daily to complete all vertical surfaces each week. Desks and tables not cleared of paper and work materials shall not be dusted. Equipment such as computers, calculators, telephones, printers, etc. shall not be dusted.

Wastepaper/Ashtrays - Daily
All wastepaper baskets and ashtrays are to be emptied daily, and ashtrays are to be wiped clean. Wastebaskets shall be damp wiped as necessary. Plastic liners, where utilized, shall be changed as needed. No interior trash receptacle is to ever to be without a liner.

Spot Cleaning Carpets - Daily
All carpeted areas shall be inspected daily for spots and stains. All spots and stains shall be removed, if possible, as soon as possible. Where difficult spots are encountered, a notation shall be left with the building management representative.

Tile Floors - As Needed
When vinyl tile floors require wet mopping, they shall be left in a streak free condition. Extreme care shall be exercised in all mopping to avoid splashing walls or furniture. All tile floors shall be refinished, buffed and kept in a consistently clean condition at all times. Since some tile areas require more attention than others, refinishing and buffing shall be accomplished on an as needed basis at tenant request. Transporting of floor finish and other liquids over carpeted areas shall be accomplished in such a manner as to avoid spillage. Care shall be exercised in applying finish so as to keep it off furniture and walls. Floor machines shall be used in a careful manner to avoid damage to the walls, baseboards and furniture.

Special Floor Coverings
Parquet, quarry, ceramic, raised computer floors and other special floor coverings shall be treated with appropriate methods and approved materials, separately, and at possible additional costs as determined with management.

High Dusting - Quarterly
Ledges, moldings, picture frames, etc. shall be cleaned quarterly or more frequently if necessary.

Blinds - Periodic
A sufficient number of blinds shall be dusted daily so that all blinds are dusted every 90 days.

Entrance Doors - Daily
All entrance doors shall be cleaned and polished daily.

Spot Cleaning - Daily/As Needed
All hand prints and spots shall be removed from doors and light switches daily. All drinking fountains shall be cleaned, disinfected, and polished daily. Walls, woodwork and interior glass shall be spot cleaned as needed.

Light Fixtures - Quarterly
The exterior of all light fixtures shall be dusted as needed. Light fixtures including reflectors, globes, diffusers and trim should be washed annually as needed.

Window Washing - Annually
All interior and exterior windows shall be washed at least annually.

For purposes of this Schedule, "daily" refers to days in the Standard Work Week.

EXHIBIT J
GENERATOR

Subject to the terms of this Exhibit and the provisions of ***Section 8*** not otherwise in conflict with this Exhibit, during the Term Tenant shall have the right to install and operate a generator (the "***Generator***") as a backup power source to serve its Premises. Tenant's rights to install and operate the Generator are expressly subject to the following conditions:

(a) Tenant shall install the Generator in the Common Area at the location reflected on the schematic attached to this Exhibit and otherwise in accordance with the plans and specs reasonably approved by the Landlord. As a condition of its approval, Landlord may, in its discretion, require Tenant, at Tenant's sole expense, to adequately screen the Generator from view (the design of the screening to be subject to Landlord's reasonable prior written approval).

(b) Tenant, at its expense, shall be solely responsible for: (i) the installation, operation, and maintenance of the Generator and any required screening; (ii) obtaining and maintaining all required operating permits and governmental approvals; and (iii) otherwise complying with all applicable legal requirements relating to the Generator. Tenant shall also promptly repair any damage to the Building, Common Areas, and/or Premises caused by the installation, operation, or maintenance of the Generator.

(c) The Generator shall remain Tenant's property throughout the Term and Tenant shall maintain full replacement value insurance to protect its interest. Tenant shall also be responsible for any additional insurance and/or increase in insurance premiums incurred by Landlord as a result of the installation of the Generator.

(d) Tenant's access to the Generator shall be subject to such reasonable conditions imposed by Landlord.

(e) Tenant's rights under this Exhibit shall not unreasonably interfere with the other tenants' use of their respective premises in the Building.

(f) Landlord, at its expense (except where necessitated by any applicable legal requirement or governmental authority, where it will be Tenant's expense), shall have the right, on not less than five days' prior written notice (except in the event of an emergency, in which event no notice shall be required) to relocate the Generator, provided that Landlord must provide backup power during such relocation if not being done pursuant to a legal requirement or governmental authority. Tenant shall cooperate with Landlord in all reasonable respects relating to any such relocation.

(g) Upon termination of this Lease, the Generator shall remain with the Premises and become Landlord's personal property.

(h) The rights granted under this Exhibit are not separately assignable; but may only be assigned in connection with a permitted assignment of this Lease.

Exhibit 21.1

List of Subsidiaries of Bandwidth Inc.

Bandwidth.com CLEC, LLC

Broadband, LLC

IP Spectrum Solutions, LLC

UK Bandwidth Limited

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement (Form S-8 No. 333-222167) pertaining to the Bandwidth Inc. 2017 Incentive Award Plan, the Bandwidth.com, Inc. 2010 Equity Compensation Plan, and the Bandwidth.com, Inc. 2001 Stock Option Plan of our report dated February 26, 2018, with respect to the consolidated financial statements of Bandwidth Inc. included in this Annual Report (Form 10-K) for the year ended December 31, 2017.

/s/ Ernst & Young LLP

Raleigh, North Carolina
February 26, 2018

Exhibit 31.1

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

I, David A. Morken, certify that:

1. I have reviewed this Annual Report on Form 10-K 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: February 26, 2018

/s/ DAVID A. MORKEN

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

Exhibit 31.2

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

I, Jeffrey A. Hoffman certify that:

1. I have reviewed this Annual Report on Form 10-K 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: February 26, 2018

/s/ JEFFREY A. HOFFMAN

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

Exhibit 32.1

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

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), 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 Annual Report on Form 10-K for the year ended December 31, 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: February 26, 2018

/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)