

BOINGO WIRELESS INC
Form 10-K
March 01, 2019

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**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

OR

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

Commission File Number: 001-35155

BOINGO WIRELESS, INC.

(Exact name of registrant as specified in its charter)

DELAWARE

(State of other jurisdiction of
incorporation or organization)

95-4856877

(I.R.S. Employer
Identification Number)

**10960 Wilshire Blvd., 23rd Floor
Los Angeles, California 90024**

(Address of principal executive offices, Zip Code)

(310) 586-5180

(Registrant's telephone number, including area code)

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

Common Stock, \$0.0001 par value
(Title of each class)

The NASDAQ Stock Market LLC
(Name of each exchange on which registered)

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 No

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

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

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

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

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 definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

Emerging growth company

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

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

The aggregate market value of the Registrant's voting and non-voting common equity held by non-affiliates of the Registrant as of the last day of the Registrant's most recently completed second fiscal quarter was \$929,616,225 based on the last reported sale price of \$22.59 per share on the NASDAQ Global Market on June 29, 2018, the last trading day of the most recently completed second fiscal quarter.

As of February 22, 2019, there were 43,920,669 shares of registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Company's definitive Proxy Statement for the Annual Meeting of Stockholders to be filed within 120 days of the Company's year ended December 31, 2018 are incorporated by reference into Part III of this Form 10-K where indicated.

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**BOINGO WIRELESS, INC.
ANNUAL REPORT ON FORM 10-K FOR
THE YEAR ENDED DECEMBER 31, 2018**

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Forward-Looking Statements

We have made forward-looking statements in this Annual Report on Form 10-K that are subject to risks and uncertainties. Forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, are subject to the "safe harbor" created by those sections. The forward-looking statements in this report are based on our management's beliefs and assumptions and on information currently available to our management. In some cases, you can identify forward-looking statements by terms such as "anticipates," "aspires," "believes," "can," "continue," "could," "estimates," "expects," "intends," "may," "plans," "projects," "seeks," "should," "will" or "would" or the negative of these terms and similar expressions intended to identify forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors, which may cause our actual results, performance, time frames or achievements to be materially different from any future results, performance, time frames or achievements expressed or implied by the forward-looking statements. We discuss many of these risks, uncertainties and other factors in this document in greater detail under the heading "Risk Factors." We believe it is important to communicate our expectations to our investors. However, there may be events in the future that we are not able to predict accurately or over which we have no control. The risks described in "Risk Factors" included in this report, as well as any other cautionary language in this report, provide examples of risks, uncertainties and events that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Before you invest in our common stock, you should be aware that the occurrence of the events described in "Risk Factors" and elsewhere in this report could harm our business.

Given these risks, uncertainties and other factors, you should not place undue reliance on these forward-looking statements. Also, these forward-looking statements represent our estimates and assumptions only as of the date of this filing. You should read this document completely and with the understanding that our actual future results may be materially different from what we expect. We hereby qualify our forward-looking statements by these cautionary statements. Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

Unless the context otherwise requires, we use the terms "Boingo," "company," "we," "us" and "our" in this Annual Report on Form 10-K to refer to Boingo Wireless, Inc. and, where appropriate, its subsidiaries.

PART I

Item 1. Business

Company Overview

Boingo helps the world stay connected to the people and things they love.

We acquire long-term wireless rights at large venues like airports transportation hubs, stadiums/arenas, military bases, multifamily properties, universities, convention centers, and office campuses; we build high-quality wireless networks such as distributed antenna systems ("DAS"), Wi-Fi, and small cells at those venues; and we monetize the wireless networks through a number of products and services.

Over the past 17 years, we've built a global footprint of wireless networks that we estimate reaches more than a billion consumers annually. We operate 58 DAS networks containing approximately 29,900 DAS nodes, and believe we are the largest operator of indoor DAS networks in the world. Our Wi-Fi network, which includes locations we manage and operate ourselves (our "managed and operated locations") as well as networks managed and operated by third-parties with whom we contract for access (our "roaming" networks), includes over 1.2 million commercial Wi-Fi hotspots in more than 100 countries around the world.

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We generate revenue from our wireless networks in a number of ways, including our DAS, small cells, multifamily and wholesale Wi-Fi offerings, which are targeted towards businesses, and our military, retail, and advertising offerings, which are targeted towards consumers.

We generate wholesale revenue from telecom operators that pay us build-out fees and recurring access fees so that their cellular customers may use our DAS or small cell networks at locations where we manage and operate the wireless network. In 2018, DAS revenue accounted for approximately 38% of our revenue.

Military/multifamily revenue, which is driven by military personnel who purchase Wi-Fi services on military bases, and multifamily revenue, which is driven by property owners who purchase network installation services and recurring monthly Wi-Fi services and support, accounted for approximately 31% of our total revenue in 2018. As of December 31, 2018, we have grown our military subscriber base to approximately 138,000, an increase of approximately 6.2% over the prior year. Retail revenue, which is driven by consumers who purchase a recurring monthly subscription plan or one-time Wi-Fi access, accounted for approximately 7% of our total revenue in 2018. As of December 31, 2018, our retail subscriber base was approximately 122,000, a decrease of approximately 35.1% over the prior year.

Our wholesale customers such as telecom operators, cable companies, technology companies, and enterprise software/services companies, pay us usage-based Wi-Fi network access and software licensing fees to allow their customers' access to our footprint worldwide. Wholesale Wi-Fi revenue also includes financial institutions and other enterprise customers who provide Boingo as a value-added service for their customers. In 2018, wholesale Wi-Fi revenue accounted for approximately 19% of our revenue.

We also generate revenue from advertisers that seek to reach consumers via sponsored Wi-Fi access. In 2018, advertising and other revenue accounted for approximately 5% of our revenue.

Our customer agreements for certain DAS networks include both a fixed and variable fee structure with the highest percentage of sales typically occurring in the fourth quarter of each year and the lowest percentage of sales occurring in the first quarter of each year. Our multifamily network installation services have historically been performed for the student housing market with the highest percentage of revenues typically occurring in the second and third quarter of each year. We expect these trends to continue. We do not expect significant seasonal impact for any of our other products.

We were incorporated in the State of Delaware in April 2001 under the name Project Mammoth, Inc. and changed our name to Boingo Wireless, Inc. in October 2001. Our principal executive offices are located in Los Angeles, California. Our website address is www.boingo.com. The information on, or that can be accessed through, our website is not part of this Annual Report on Form 10-K.

Industry Overview

Today, consumers own multiple connected devices – smartphones, laptops, tablets, wearables, and more. In addition, mobile data growth is exploding, driven by the growth of wireless devices and the increase in high-bandwidth activities like video streaming, online gaming, and mobile apps. According to Cisco's 2018 Visual Networking Index ("CVNI"), global mobile data traffic is forecasted to grow seven-fold from 2017 to 2022, a compound annual growth rate of 46%. CVNI further estimates that by 2022, there will be 3.6 "connected" devices for every human on the planet. That means 28.5 billion networked devices by 2022.

The mobile data explosion has fueled the growth of higher-generation network connectivity to address the demand for more bandwidth, higher security, and faster connectivity. Telecom operators have started trials for 5G, which will provide higher bandwidth (greater than 1 gigabit per second),

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broader coverage, and ultra-low latency. Significant 5G deployments are expected by 2020 subject to certain gating factors like standards development, regulatory approval, and spectrum availability.

Challenges Facing Our Industry

The mobile Internet is a complex and constantly evolving ecosystem comprised of dozens of manufacturers, many different operating systems, and a number of different wireless technologies utilizing both licensed and unlicensed spectrum. This complexity is amplified as new device models and operating systems are released, new categories of devices become Internet enabled, and new network technologies emerge.

To cope with the significant increase in mobile Internet data traffic, wireless network operators must build denser networks that are closer to the end consumer, explore solutions to offload network traffic from congested, licensed spectrum onto more efficient unlicensed spectrum, and invest in technologies that will enable the convergence of licensed and unlicensed spectrum. We expect our wireless networks to play a significant role in helping meet the ever-increasing data demands of connected consumers.

Our Strategy

We believe we are the leading global provider of neutral-host commercial mobile Wi-Fi Internet solutions and indoor DAS services. Our overall business strategy is simple: acquire long-term wireless rights at large venues; build high-quality wireless networks at those venues; and monetize the wireless networks through a number of products and services. In support of our overall business strategy, we are focused on the following objectives:

Expand our footprint of managed and operated and aggregated networks. We intend to continue to grow our global network of managed and operated DAS, Wi-Fi and small cell networks. We focus our venue acquisition strategy on locations with a common profile large venues with significant population density as these venues face challenges that we are uniquely qualified to solve. We also plan to enter into new roaming agreements with network operators to maximize the reach of our aggregated network, which creates a more attractive offering for our wholesale enterprise, multifamily, military, and retail customers.

Leverage our neutral-host business model to grow DAS, small cell, and wholesale roaming partnerships. Our neutral-host model enables us to effectively partner with venues because we ensure all customers receive high-quality wireless service. We successfully balance the interests of individual carriers with the goals of our venue partners and build flexible DAS network architectures that can support multiple carriers and the latest mobile services. We are also beginning to deploy small cell networks, and we believe this technology will enable us to expand into certain venues where a traditional DAS network is cost-prohibitive.

Expand our carrier offload relationships. As cellular networks become strained due to capacity, carriers are beginning to offload their licensed mobile traffic onto unlicensed spectrum. We are highly focused on partnering with all four Tier 1 carriers in the U.S. and other carriers around the world to offload their mobile traffic onto our Wi-Fi networks.

Increase our brand awareness. We intend to continue to seek new ways to promote our brand through our managed and operated hotspots. We plan to enhance our brand through low-cost co-marketing arrangements with our partners and through periodic promotional and sponsorship activities and by continuing to leverage the reach of social media and public relations to interact with our customers.

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Services

Our solution makes it easy, convenient and cost effective for consumers to access the mobile Internet.

DAS or Small Cell. We offer our telecom operator partners access to our DAS or small cell networks at our managed and operated locations. We deploy our DAS or small cell networks within venues that require additional signal strength to improve the quality of cellular services.

Military/Multifamily. We provide high-speed Wi-Fi services for residential consumers on military bases and at multifamily properties. On military bases, where we are the leading provider of barracks Wi-Fi services at more than 60 U.S. Army, Air Force, and Marines bases, we offer direct-to-consumer transactional and recurring monthly subscription plans. Our plan offerings include Basic Internet (speeds up to 10Mbps) and Blazing Internet (speeds up to 50Mbps). Our subscription plans require no installation or equipment and are portable from base to base, enabling a user to sign up for service immediately and remain a customer even if they are deployed to a new base. At multifamily properties, we primarily offer bulk subscription plans sold directly to the property owner. Our multifamily footprint includes 225 properties throughout the U.S.

Wholesale Wi-Fi. Our integrated hardware and software platform allows us to provide a range of enhanced services to network operators, device manufacturers, technology companies, enterprise software and services companies, venue operators and financial services companies.

Carrier offload services. We offer services to carriers to move traffic from their licensed cellular networks onto our Wi-Fi networks.

Comes with Boingo. We offer access to our entire network of over 1.2 million hotspot locations to financial institutions and other enterprise customers who then offer them as a loyalty incentive to their customers.

Wi-Fi roaming and software services. We offer roaming services across our entire network of over 1.2 million hotspot locations to our partners who can then provide mobile Internet services to their customers at these locations. Our software solution, which provides one-click access to our global footprint of hotspots, has been rebranded for wholesale partners, in addition to being marketed under the Boingo brand. In combination with our back-end system infrastructure, it creates a global roaming solution for operators, carriers, other service providers and other businesses.

Turn-key solutions. We offer our venue partners the ability to implement a turn-key Wi-Fi solution through a Wi-Fi network infrastructure that we install, manage and operate. Our turn-key solutions include a variety of service models that are supported through a mix of wholesale Wi-Fi, military, retail, and advertising revenue.

Retail. We enable individuals to purchase Internet access at our managed and operated hotspots and select partner locations around the world. We offer a selection of recurring monthly subscriptions and single-use access plans. Our most common plan is the \$14.99 monthly subscription for up to four connected devices that provide users access to a global footprint of over 1.2 million hotspots, and the single-use plan at \$7.95 per day or \$4.95 per hour. Our single-use access plans provide unlimited access on a single device at a specific hotspot for a defined period of time, tolled from the time the user first logs on to the network. We intend to continue to launch other flexible plans to meet the evolving needs of our customers and venues.

Advertising. Our Wi-Fi platform provides a valuable opportunity for advertisers to reach consumers with sponsored Wi-Fi access, promotional programs and display advertising. We provide brands and advertisers the opportunity to sponsor wireless connectivity to individuals at locations where

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we manage and operate the Wi-Fi network and locations where we solely provide authorized access to a partner's Wi-Fi network through sponsored access and promotional programs. In addition, our advertising solution is easily integrated into Wi-Fi networks not directly managed by Boingo.

Our Network

Over the past 17 years, we've built a global network of wireless networks that we estimate reaches more than a billion consumers annually. We operate 58 DAS networks containing 29,900 DAS nodes, and believe we are the largest operator of indoor DAS networks in the world. Our Wi-Fi network which includes our managed and operated locations and our roaming networks includes over 1.2 million commercial Wi-Fi hotspots in more than 100 countries around the world.

Boingo hotspot locations by region as of December 31, 2018 included:

Region	Airport	Café / Retail	Convention Center	Hotel	Other(1)	Total
North America	61	101,018	172	3,126	131,561	235,938
Latin America	90	5,316	13	253	6,855	12,527
Europe, Middle East and Africa	266	40,181	380	10,648	44,482	95,957
Asia	274	244,981	1,675	40,719	598,363	886,012
Total	691	391,496	2,240	54,746	781,261	1,230,434

(1) Includes schools and universities, offices, hospitals and public spaces.

We also operate Wi-Fi networks at over 60 U.S. Army, Air Force, and Marine bases around the world and 225 multi-dwelling properties including student housing, condominiums, apartments, senior living, and hospitality properties throughout the U.S.

Marketing and Business Development

Our marketing and business development efforts are designed to cost effectively expand our footprint of venues where we can deploy DAS, Wi-Fi and small cell networks, secure more carrier contracts, attract and retain new multifamily, military and retail customers, and identify business partners that could leverage our network to provide mobile Internet services to their customers. We focus on efficient customer acquisition through our online presence, social media, public relations, influencer marketing, experiential and event marketing, market research, and other promotional activities.

We seek to maximize customer lifetime value by managing subscriber acquisition cost, extending customer life and determining appropriate pricing. We use information about subscriber behavior to help us retain customers and determine premium offerings. Our segmentation is focused at the product level, so that we provide the right product, plan and price for our military and retail customers. Our consumer plans are available for essentially all Wi-Fi enabled devices and are priced on a month-to-month or per-use basis.

We issue regular press releases announcing important partnerships and product developments and continually update our website with information about our network and services. We leverage our social media accounts, website and blog to further promote Boingo's product availability and applicability for property owners, military personnel, travelers, digital elite and consumers on-the-go. Our executive team speaks at industry events, trade shows and conferences.

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Development

Our development efforts are focused primarily on supporting our networks and the businesses that run across these networks. These efforts include developing web applications for ease of connecting to our managed and operated locations and aggregate partner networks, integrating our software client with our wholesale partners, continuing to adapt our technology to new operating systems and platforms, continuing to develop an advertising system and business and operations support system for monetizing network service, continuing to develop a platform for delivering television services to our military bases and optimizing our networks and backend systems for roaming and carrier offload. Our development model is based on Agile development practices so any deviations can be promptly corrected to improve reliability in our network or services and enhance customer satisfaction.

Technology

Over the past 17 years, we have developed proprietary systems that include the Boingo software client and software development kit ("SDK"); authentication, authorization and tracking systems; mediation and billing systems; television management and delivery platform; free user monetization media and advertising platform; and a real-time operational support and software configuration and messaging infrastructure.

Boingo Software Client and SDK

The Boingo software client and SDK are installed on Wi-Fi enabled devices such as smartphones, laptops and tablets to enable our customers and our partners' customers to access our network. The key features of the Boingo software client include:

Simple user interface. The Boingo software client provides individuals with an uncomplicated, user-friendly interface designed to streamline the Wi-Fi network connection process. The software finds hotspots and monitors the availability of Wi-Fi hotspots in the Boingo network, presents a notification message of the hotspot identified and allows one-click user connections. In some devices, connection to a Boingo Wi-Fi hotspot occurs in the background, providing the user with a seamless, notification-free connectivity experience.

Support for all major operating system platforms. The Boingo software client and SDK support the Android, iOS, Mac OS and Windows operating systems, which represents the majority of all devices connecting to our managed and operated venues.

Automatic updates. The Boingo software client automatically receives identification information for new hotspot locations as they are added to the Boingo network, including any information needed to automatically identify and login to the network. Location information, allowing a user to find Boingo hotspots from the client, is also automatically updated. On all but embedded platforms, software updates are also automatically offered to a user when available.

Custom branding and flexible integration alternatives. We offer wholesale customers the ability to integrate the Boingo software client into their products and services as a SDK. Additionally, we offer wholesale customers the option to utilize a custom, rebranded reference design of the software client used in our retail customer offering.

Authentication, Authorization and Tracking System

Our proprietary authentication, authorization and tracking system enables the reliable, scalable and secure initiation and termination of user Wi-Fi sessions on our network. This system authenticates our network users across a wide variety of hotspots and network operators, through a normalized authentication protocol. Through the authorization process, custom business rules ensure user access based on specific service parameters such as location, type of device, service plan and account

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information. Our system also captures duration, data traffic, location, and type of device. We normalize and process this data from disparate providers for our use and for our wholesale partners. This system has been enhanced to include support for secure Next Generation Hotspot roaming, which leverages Passpoint-certified devices and network hardware to establish seamless secure connections for customers.

Mediation and Billing System

Our mediation and billing system record and analyzes individual usage sessions required to bill for Wi-Fi usage. Users are charged based on variables such as pricing plan, device type, location, time and amount of use. Our system consolidates usage session information, determines the user identity and applies the appropriate aggregation and flagging to ensure proper usage processing. Our system handles exceptions automatically. Exceptions that cannot be solved automatically are brought to the attention of the operations staff for rectification of any discrepancies. The billing system provides billing based on roaming relationship, user type, device type and account type. Our military and retail customer mediation and billing are handled by the same infrastructure used for wholesale customer and billing, resulting in efficiencies of scale and operation.

Television Management and Delivery Platform

Our television system enables us to deliver content to our military subscribers. The Boingo digital rights management ("DRM") system allows for live linear commercial content to be delivered securely through our encrypted network links that connect our primary data center and the military bases. The central content management system allows for regional content delivery and multiple programming bundle offers. To enhance the viewing experience for mobile and tablet devices, the Boingo delivery system uses HTTP Live Streaming distribution protocol that will accommodate playing content at different network speeds by dynamically reducing content size.

Free User Monetization Media and Advertising Platform

The Boingo Media platform enables brand advertisers to reach a captive audience through high engagement Wi-Fi sponsorships in premium locations worldwide. It delivers engaging advertising experiences, and our partners can place their messaging in the right context to their target audience. It also allows a combination of branding with direct response in a single high-impact format. Frequent travelers can be reached in a way they appreciate by receiving free Wi-Fi access when they need it most.

Software Configuration and Messaging System

Our software configuration system provides real-time network configuration updates for thousands of networks and many detection and login methodologies used by the Boingo software client to access our network. Our software configuration system automatically registers new network definitions and login methodologies to allow individuals to connect to our hotspot locations. All supported platforms use a single configuration, providing a high level of operational and test efficiency. Our messaging system enables real-time customer notification and system interaction at login, based on location, network, user, account type, device and usage. This approach enables us and our partners to deliver custom marketing or service messages.

Operations

We provide significant operational support for our managed and operated wireless infrastructure and the related technical systems in our network. For our managed and operated networks, we design, build, monitor and maintain the network. For roaming partners, we monitor network and related

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system uptime and report issues so that they can be quickly remedied. We have service level agreements with our roaming partners specifying minimum network uptime requirements and specified quality of service levels for different services that run across the wireless network infrastructure.

Our Wi-Fi deployments are based on the IEEE 802.11a, b, g, n and ac standards and operate in the 2.4 GHz and 5 GHz unlicensed spectrum bands. We design, build, and operate DAS and small cell networks that currently provide 2G, 3G, and 4G-LTE services and expect to start deploying 5G across multiple licensed-frequency bands for all major telecom operators.

Customers

We generate revenue primarily from our wholesale partners (including DAS customers), multifamily, military and retail customers. Our DAS customers are telecom operators who pay us one-time build-out fees and recurring access fees for our DAS network, enabling their cellular customers to access these networks. Our wholesale Wi-Fi customers pay usage-based network access fees to allow their customers access to our global Wi-Fi network and other wholesale Wi-Fi partners pay us to provide Wi-Fi services in their venue locations under a service provider arrangement. Our multifamily customers are property owners who pay us to provide Wi-Fi services including network installation services, and to provide support to their residents and employees at their properties. Our wholesale customer relationships are generally governed by multi-year contracts. We acquire our wholesale customers through our business development efforts. Our military and retail customers either purchase month-to-month subscription plans that automatically renew, or single-use access to our network. We acquire our military and retail customers primarily from users passing through our managed and operated locations, where we generally have exclusive multi-year agreements. We also generate revenue from advertisers that seek to reach visitors seeking Wi-Fi access at our managed and operated network locations with online advertising, promotional and sponsored programs. For the years ended December 31, 2018, 2017 and 2016, entities affiliated with Sprint Corporation accounted for 14%, 11% and 11%, respectively, of total revenue. For the years ended December 31, 2018 and 2017, entities affiliated with T-Mobile USA, Inc. accounted for 12% and 11%, respectively, of total revenue. For the years ended December 31, 2018 and 2017, entities affiliated with Verizon Communications Inc. accounted for 11% and 11%, respectively, of total revenue. For the years ended December 31, 2017 and 2016, entities affiliated with AT&T Inc. accounted for 11% and 12%, respectively, of total revenue. The loss of these groups and the customers could have a material adverse impact on our consolidated statements of operations.

Key Business Metrics

In addition to monitoring traditional financial measures, we also monitor our operating performance using key performance indicators. Our key performance indicators follow:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
DAS nodes	29.9	23.5	19.2
Subscribers military	138	130	107
Subscribers retail	122	188	195
Connects	277,744	223,960	142,802

DAS nodes. This metric represents the number of active DAS nodes as of the end of the period. A DAS node is a single communications endpoint, typically an antenna, which transmits or receives radio frequency signals wirelessly. This measure is an indicator of the reach of our DAS network.

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Subscribers military and Subscribers retail. These metrics represent the number of paying customers who are on a month-to-month subscription plan at a given period end.

Connects. This metric shows how often individuals connect to our global Wi-Fi network in a given period. The connects include wholesale and retail customers in both customer pay locations and customer free locations where we are a paid service provider or receive sponsorship or promotion fees. We count each connect as a single connect regardless of how many times that individual accesses the network at a given venue during their 24-hour period. This measure is an indicator of paid activity throughout our network.

Customer Support

We provide support services to our multifamily, military, retail, and enterprise customers 24 hours per day, 7 days per week, 365 days per year. Support is available by phone, chat, email, or social media channels like Twitter and Facebook. Our website contains a comprehensive knowledge base that includes answers to frequently asked questions for self-help, and we provide video support on our YouTube channel. Tier 1 support is provided by a third-party provider, while Tier 2 and social media support is managed by our internal customer care team.

Competition

The market for mobile Internet services and solutions is fragmented and competitive. We believe the principal competitive factors in our industry include the following:

price;

quality of service;

venue exclusivity;

ease of access and use;

bundled service offerings;

geographic reach; and

brand name recognition.

Direct and indirect competitors include telecom operators, cable companies, self-managed venue networks and smaller wireless Internet service providers. Some of these competitors have substantially greater resources, larger customer bases, longer operating histories and greater name recognition than we have. They may offer bundled data services with primary service offerings that we do not generally offer such as landline and cellular telephone service, and cable or satellite television. Many of our competitors are also partners from whom we receive revenue when their customers access our network.

We believe that we compete favorably based on our ability to deliver end-to-end solutions, our neutral host business model, deep domain experience in licensed and unlicensed spectrum technology, brand recognition, geographic coverage, network reliability, quality of service, ease of use, and cost.

Intellectual Property

Our ongoing success will depend in part upon our ability to protect our core technology and intellectual property. To accomplish this, we rely on a combination of intellectual property rights, including trade secrets, patents, copyrights and trademarks, as well as contractual restrictions.

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We have eight issued U.S. patents, which expire between in 2022 and 2034. We have two patent applications pending in the United States and one patent application pending in Europe. We have two

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issued Japanese patents and two issued Chinese patents, each of which has a maximum term that expires in 2027.

Our registered trademarks in the United States and the European Union include "Boingo" and "Boingo Wi-Finder", and in the United States, "Boingo Broadband", "Cloudnine 9 Media", and "AWG-WIFI". We own additional registrations and have filed other trademark applications in the United States and other countries.

In addition to the foregoing protections, we control access to, and use of, our proprietary software and other confidential information through the use of internal and external controls, including contractual protections with employees, contractors, customers and partners. Our software is protected by United States and international copyright laws.

Employees

As of December 31, 2018, we had 463 employees, including 204 in operations, 118 in development and technology, 85 in sales and marketing and 56 in general and administrative. All of our employees are full-time employees except for three part-time employees. We have ten international employees who are covered by a collective bargaining agreement. We have never experienced any employment related work stoppages and consider relations with our employees to be good. As of December 31, 2018, we also had arrangements with third-party call center providers that provided us with 58 full-time equivalent contractors for multifamily, military, retail and enterprise customer support service and similar functions.

Corporate Responsibility and Sustainability

We understand that long-term value creation for shareholders is our core responsibility. We also have an important role to play for our team members, our customers, and the communities we serve and believe that enriching and enabling the lives of our employees and their families, supporting our environment, caring for our communities, and being good corporate stewards over Boingo is fundamental to our culture, and is just plain good business.

Employee Well-Being

Financial well-being. We offer an incredible benefits package that includes equity, competitive pay, a quarterly or annual incentive plan, and a defined contribution savings plan with an employer match, among other health-related and other benefits.

Retirement planning. To help prepare our employees for retirement, our defined contribution savings plan is opt-out, so employees are automatically enrolled in the program when they are hired, unless they actively decline. This behavioral approach means that a significant majority of all of our employees are actively saving for retirement and receiving a company match that is paid each pay period.

Financial literacy. We conduct financial literacy trainings throughout the year. Seminars have included retirement planning, managing student loan debt, and first-time homebuyer education. Our equity and defined contribution savings plan partners also offer monthly webinars, online planning tools and one-on-one consultations.

Matching grant program. Our Matching Grant Program amplifies employees' cash contributions to the charitable organization of their choice.

Tomorrow's workforce. We work with community organizations to help develop the tech pipeline talent. Organizations we actively support include the Bixel Exchange Tech Talent Pipeline,

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Exceeding Expectations, Girls Who Code, Kid City/Urban Foundation, Los Angeles, and Path Forward.

We have been named one of the Best Places to Work in Los Angeles four years running. Our high scores in corporate culture, leadership, and training and development reflect our commitment to create a great work environment for our employees.

Environment

Going green. We continually strive to improve operations and minimize our impact on the environment. Business Intelligence Group ("BIG") recently named Boingo "Green Company of the Year" in their "BIG Awards for Business."

Certifications. We are certified by the City of Los Angeles as a Green Business, meeting sustainability standards set by the City of Los Angeles and the California Green Business Network. The certification was based on a proprietary scoring system used to measure a company's achievements. We were selected for offering e-cycling programs, investing in sustainable business practices, and offering a transportation reimbursement program that rewards employees for going green.

Diversity

A culture of inclusion and programs. At Boingo, we believe that fostering a diverse and inclusive culture where all employees can succeed is important to our business. We participate in the Digital Diversity Networks' Innovation and Inclusion Awards and we are a two-time winner. We are a founding member of LightReading's Women in Comms, a platform that empowers women to champion change and redress the gender imbalance in the workplace. We host Center for Excellence in Engineering and Diversity programs that help educationally underrepresented students achieve success in math, science and engineering. Women of Boingo is an employee club that celebrates diverse talents and is dedicated to empowering women to follow a fulfilling career through education, networking and mentoring opportunities.

Governance

Good governance. We endeavor to improve corporate governance and executive compensation and practices and have recently implemented various changes to our corporate governance practices.

Adopted stock ownership guidelines. We adopted stock ownership guidelines to reinforce our belief that executives who believe in the future of the Company should have meaningful equity holdings in Boingo.

Adopted majority voting standard in uncontested elections. We have implemented a majority voting standard in uncontested elections of director. We have also implemented a majority voting policy for director resignations, applicable if an incumbent director nominee receives less than a majority of votes cast in an uncontested election.

Declassified Board. Commencing with the 2018 annual meeting of stockholders, director nominees are reelected for a term of one year, but directors elected prior to the 2018 annual meeting of stockholders will continue to serve the remainder of their terms. Therefore, at the 2020 annual meeting of stockholders, all directors who are elected will be elected for a one-year term.

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Further information on our corporate governance policies and programs can be found on the Investor Relations section of our website at <http://www.boingo.com>. The information on, or that can be accessed through, our website is not part of this Annual Report on Form 10-K.

Available Information

Our filings with the United States Securities and Exchange Commission or SEC, including this Annual Report on Form 10-K, quarterly reports on Form 10-Q, and current reports on Form 8-K are available free of charge through the Investor Relations section of our website at <http://www.boingo.com> and are accessible as soon as reasonably practicable after being electronically filed with or furnished to the SEC. The information on, or that can be accessed through, our website is not part of this Annual Report on Form 10-K.

Copies of this report are also available free of charge from Boingo Corporate Investor Communications, 10960 Wilshire Boulevard, 23rd Floor, Los Angeles, California 90024. In addition, our Corporate Governance Guidelines, Code of Business Conduct and Ethics and written charters of the committees of the Board of Directors are accessible through the Corporate Governance tab in the Investor Relations section of our website and are available in print to any stockholder who requests a copy. The SEC maintains a website that contains reports and other information we file, and proxy statements to be filed with the SEC. The address of the SEC's website is <http://www.sec.gov>.

Item 1A. Risk Factors

Investing in our common stock involves a high degree of risk. You should consider carefully the risks and uncertainties described below, together with all of the other information in this report on Form 10-K, including our accompanying consolidated financial statements and the related notes, before deciding whether to purchase shares of our common stock. If any of the following risks actually occur, our business, financial condition, results of operations and prospects could be materially and adversely affected. The price of our common stock and the trading price of our Convertible Notes could decline, and you could lose part or all of your investment.

Risks Related to Our Business

A significant portion of our revenue is dependent on our relationships with our venue and network partners, and if these relationships are impaired or terminated, or if our partners do not perform as expected, our business and results of operations could be materially and adversely affected.

We depend on our relationships with venue partners, particularly key venue partners and military bases, in order to manage and operate DAS, small cell, and Wi-Fi networks. These relationships generate a significant portion of our revenue and allow us to generate wholesale revenues and new multifamily, military, and retail customers. Our agreements with our venue partners, telecom operators, and wholesale customers are for defined periods and of varying durations. In order to maintain our relationships with venue partners, we may need to upgrade our networks or make other changes to our products and services we provide such venue partners, which would, in most cases, require significantly higher initial capital expenditures than we have historically incurred, and if we are unsuccessful, our relationships could be impaired. If our venue partners terminate or fail to renew these agreements, our ability to generate and retain wholesale, multifamily, military, and retail customers would be diminished, which might result in a significant disruption of our business and adversely affect our operating results. Further, any delays in our ability to complete the upgrade of our networks or build-out new networks can adversely affect our operating results.

We depend on our relationships with network partners to allow users to roam across networks that we do not manage or operate. A significant portion of our revenue depends on maintaining these relationships with network partners. Some network partners may compete with us for retail customers

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and may decide to terminate our partnerships and instead develop competing retail products and services. Our network partner agreements are for defined periods and of varying durations. If our network partners terminate these agreements, or fail to renew these agreements, our ability to retain retail customers could be diminished and our network reach could be reduced, which could result in a significant disruption of our business and adversely affect our operating results.

Our operating results may fluctuate unexpectedly, which makes them difficult to predict and may cause us to fail to meet the expectations of investors, adversely affecting our stock price.

We operate in a highly dynamic industry and our future quarterly operating results may fluctuate significantly. Our revenue and operating results may vary from quarter-to-quarter due to many factors, many of which are not within our control. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Further, it is difficult to accurately forecast our revenue, margin and operating results, and if we fail to match our expected results or the results expected by financial analysts, the trading price of our common stock and Convertible Notes and the price at which our convertible noteholders could sell the common stock received upon conversion of the Convertible Notes may be adversely affected.

Factors that contribute to fluctuations in our operating results from quarter-to-quarter include those described in this risk factor section including:

our gain or loss of a key venue partner, military partner, or wholesale partner;

the rate at which individuals adopt and continue to use our solutions;

the timing and success of new technology introductions by us or our competitors;

the number of air travel passengers;

the growing prevalence of free Wi-Fi models and our ability to adapt and compete with free Wi-Fi;

intellectual property disputes; and

general economic conditions in our domestic and foreign markets.

Due to these and other factors, quarter-to-quarter comparisons of our historical operating results should not be relied upon as accurate indicators of our future performance.

A substantial portion of our business depends on the demand for our DAS and small cell networks, which is driven primarily by demand from our telecom customers and demand for data, and we may be adversely affected by any slowdown in such demand. A reduction in the amount or change in the mix of network investment by our telecom customers may materially and adversely affect our business (including reducing demand for tenant additions or network services).

Customer demand for our DAS and small cell networks depends on the mix of network investment by our telecom customers and the demand for data from end users. The willingness of our customers to utilize our systems, including DAS and small cell networks, or renew or extend existing contracts on our systems, is affected by numerous factors, including:

availability or capacity of our DAS and small cell networks;

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location of our DAS and small cell networks;

financial condition of our customers, including their profitability and availability or cost of capital;

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willingness of our customers to maintain or increase their network investment or changes in their capital allocation strategy;

consumers' and organizations' demand for data;

need for integrated networks and organizations;

availability and cost of spectrum for commercial use;

increased use of network sharing, roaming, joint development, or resale agreements by our customers;

mergers or consolidations by and among our customers;

changes in, or success of, our customers' business models;

governmental regulations and initiatives, including local or state restrictions on the proliferation of communications infrastructure;

cost of constructing our DAS and small cell networks;

our market competition;

technological changes, including those (1) affecting the number or type of communications infrastructure needed to provide data to a given geographic area or which may otherwise serve as substitute or alternative to our communications infrastructure or (2) resulting in the obsolescence or decommissioning of certain existing wireless networks; and

our ability to efficiently satisfy our customers' service requirements.

A slowdown in demand for our DAS and small cell networks or data generally may negatively impact our growth or otherwise have a material adverse effect on us. If our customers or potential customers are unable to raise adequate capital to fund their business plans, as a result of disruptions in the financial and credit markets or otherwise, they may reduce their spending, which could adversely affect our anticipated growth or the demand for our DAS and small cell networks.

The amount, timing, and mix of our customers' network investment is variable and can be significantly impacted by the various matters described in these risk factors. Changes in customer network investment typically impact the demand for our DAS and small cell networks. As a result, changes in customer plans such as delays in the implementation of new systems, new and emerging technologies, or plans to expand coverage or capacity may reduce demand for our DAS and small cell networks. Furthermore, the industries in which our customers operate (particularly those in the wireless industry) could experience a slowdown or slowing growth rates as a result of numerous factors, including a reduction in consumer demand (including demand for wireless connectivity) or general economic conditions. There can be no assurances that weakness or uncertainty in the economic environment will not adversely impact our customers or their industries, which may materially and adversely affect our business, including by reducing demand for DAS and small cell networks. Such an industry slowdown or a reduction in customer network investment may materially and adversely affect our business.

We may be unsuccessful in expanding into new venue types, which could harm the growth of our business, operating results and financial condition.

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We are negotiating with existing and prospective partners to expand our managed and operated Wi-Fi network and small cell footprint in venue types where we historically have had only a limited presence. Expansion into these venue types, which may include shopping malls, stadiums, hospitals, retail stores and quick service restaurants, may require significantly higher initial capital expenditures than we have historically incurred. In contrast to Wi-Fi network build-outs at venues such as airports,

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where telecom operators typically pay the substantial expense of laying cable or fiber, we may be required to incur the initial capital expense of access points and related hardware and cabling at tens of thousands of quick serve restaurant locations and hundreds of shopping malls, hospitals, retail stores and stadium locations. Additionally, in August 2018 we closed the acquisition of substantially all of the assets of Elauwit Networks, LLC for our entrance into the multifamily venue type. We have minimal experience in servicing the multifamily venues and we may not be successful in growing and managing this business.

We may not be able to execute on our strategy or there may not be returns on these investments in the near future or at all. As a result, our business, financial condition and results of operations could be materially and adversely affected.

Our business depends upon demand for connected services that rely on wireless network infrastructure. Our ability to adapt to the speed of changes and anticipate market adoption of new technologies may adversely impact our business.

Our future success depends upon growing demand for wireless connected services. The demand for wireless connectivity may decrease or may grow more slowly than expected. Any such decrease in the demand or slowing rate of growth could have a material adverse effect on our business. The continued demand for wireless connectivity services depends on the continued proliferation of smartphones, tablets and other wireless connection enabled devices. Our revenue is derived from the demand from consumers for internet connectivity, including our military and retail offerings, and from our telecom, venue, multifamily, and other wholesale partners attempting to provide consumers with greater connectivity. We may face challenges as we seek to increase the revenue generated from the usage on smartphones, tablets and other wireless connected devices.

A portion of our business depends on the continued integration of Wi-Fi as a standard feature in wireless connected devices. If Wi-Fi ceases to be a standard feature in wireless connected devices, or if the rate of integration of Wi-Fi on devices decreases or is slower than expected, the market for our services may be substantially diminished.

Competing technologies pose a risk to the continued use of Wi-Fi as a mobile wireless connectivity technology. The introduction and market acceptance of emerging wireless technologies such as 4G/LTE, 5G, LTE-U and Super Wi-Fi, could cause significant disruption to our Wi-Fi business, which may result in a loss of customers, users and revenue. If users find emerging wireless technologies to be sufficiently fast, convenient or cost effective, we may not be able to compete effectively, and our ability to attract or retain users will be impaired. Additionally, one or more of our partners may deploy emerging wireless technologies that could reduce the partner's need to work with us and may result in significant loss of revenue and reduction of the Wi-Fi hotspots in our network.

We deliver value to our users by providing simple access to Wi-Fi hotspots, regardless of whether we manage and operate the hotspot, or the hotspot is operated by a partner. As a result, our business depends on our ability to anticipate and quickly adapt to changing technological standards and advances. If technological standards change and we fail to adapt accordingly, our business and revenue may be adversely affected. Furthermore, the proliferation of new mobile devices and operating platforms poses challenges for our research and development efforts. If we are unable to create simple solutions for a particular device or operating platform, we will be unable to effectively attract users of these devices or operating platforms and our business will be adversely affected.

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We may not maintain recent rates of revenue growth.

Although our revenue has increased substantially over the last few years, we may not be able to maintain historical rates of revenue growth. We believe that our continued growth will depend, among other factors, on successfully implementing our business strategies, including our ability to:

- retain our existing partners and attract new partners;
- develop new sources of revenue from our users and partners;
- attract new users and keep existing subscribers actively using our services;
- react to changes in the way individuals access and use the mobile Internet;
- identify and integrate the acquisition of new businesses;
- expand into new markets;
- increase the awareness of our brand; and
- provide our users with a superior experience, including customer support and payment experiences.

However, we cannot guarantee that we will successfully implement any of these business strategies.

The U.S. government may modify, curtail or terminate one or more of our contracts.

We have dedicated a significant amount of resources to building out Wi-Fi networks for troops stationed on military bases pursuant to our contracts with the U.S. government. Military revenue comprises a substantial part of our overall revenue and the U.S. government may modify, curtail or terminate its contracts with us, either at its convenience or for default based on performance. Any such modification, curtailment, or termination of one or more of our government contracts could have a material adverse effect on our earnings, cash flow and/or financial position.

Negotiations with prospective or existing partners and telecom operators and network operators can be lengthy and unpredictable, which may cause our operating results to vary.

Our negotiations with prospective or existing venue partners, including large venues like airports, transportation hubs, stadiums, arenas, military bases, universities, convention centers, office campuses and other partners, to acquire Wi-Fi locations to operate or to acquire roaming rights on partners' networks, or for new partners to implement our solutions or to extend or amend current arrangements, can be lengthy, and in some cases can last over 12 months. Because of the lengthy negotiation cycle, the time required to reach a final or amended agreement with a partner is unpredictable and may lead to variances in our operating results from quarter to quarter. Negotiations with prospective and existing partners also require substantial time, effort and resources. We may ultimately fail in our negotiations, resulting in costs to our business without any associated benefits.

Additionally, our negotiations with telecom operators and network operators who pay us build-out fees and recurring access fees can likewise be lengthy and, therefore, the time required to reach a final or amended agreement with a telecom or network operators is unpredictable and may lead to variances in our operating results from quarter to quarter.

We operate relatively new businesses in a rapidly evolving industry, so an investment in our company involves more risk than an investment in a more mature company in an established industry.

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We derive nearly all of our revenue from mobile Internet services, which are new and highly dynamic businesses, which face significant challenges. You should consider our business and prospects in light of the risks, uncertainties and difficulties we will encounter as an emerging company in a new

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and rapidly evolving market. We may not be able to address these risks, uncertainties and difficulties successfully, which could materially harm our business and operating results.

Our industry is competitive and if we do not compete successfully, we could lose market share, experience reduced revenue or suffer losses.

The market for commercial wireless infrastructure solutions is competitive and impacted by technological change, and we expect competition with our current and potential competitors to intensify in the future. In particular, some of our competitors have taken steps or may decide to more aggressively compete against us, particularly in the market for venue build-outs of Wi-Fi, DAS, and small cell solutions.

Our competitors, many of whom are also our partners, include a variety of telecom operators and network operators, including Verizon, AT&T, T-Mobile, Sprint, Comcast, Charter, Altice and local operators. These and other competitors have developed or may develop technologies that compete directly with our solutions. Many of our competitors are substantially larger than we are and have substantially longer operating histories. We may not be able to fund or invest in certain areas of our business to the same degree as our competitors. Many have substantially greater product development and marketing budgets and other financial and personnel resources than we do. Some also have greater name and brand recognition and a larger base of subscribers or users than we have. In addition, our competitors may provide services that we generally do not, such as cellular, local exchange and long-distance services, voicemail and digital subscriber line. Users that desire these services may choose to also obtain mobile wireless connectivity services from a competitor that provides these additional services rather than from us.

Furthermore, we rely on several of our competitors as partners in roaming agreements. The roaming agreements provide that our retail customers and our wholesale partners' customers may use the Wi-Fi networks of our partners. One or more of our partners may deploy competing technologies that could reduce the partner's need to work with us under a roaming agreement. If our partners decide to terminate our roaming agreements, our global network of wireless networks may be reduced, which may result in a significant disruption to our business.

Competition could increase our selling and marketing expenses and related customer acquisition costs. We may not have the financial resources, technical expertise or marketing and support capabilities to continue to compete successfully. A failure to respond to established and new competitors may adversely impact our business and operating results.

We process, store, transfer and use personally identifiable information, confidential information and other data, which subjects us to laws and regulations and other legal obligations, of which the actual or perceived failure to comply could adversely affect our business.

We process, store, transfer and use data from or about our certain of our customers, including certain personally identifiable information and confidential information. These activities subject, or may subject, us to various federal, state, local and international laws and regulations regarding data privacy, protection, and security. In addition, we are also subject to the terms of our privacy policies and other third-party obligations regarding data privacy, protection and security. Although we strive to comply with applicable laws, regulations, policies and other legal obligations, the regulatory framework for data privacy, protection and security is complex and ambiguous, and thus our current rules and practices may not, or allegedly may not, be complaint. Such noncompliance or alleged noncompliance could increase our costs and require us to modify our services and products, possibly in a material manner, and could limit or prevent us from processing, storing, transferring or using certain customer data in our services and products.

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In addition, data privacy, protection and security laws, regulations and industry standards are constantly evolving and being adopted in various jurisdictions. For example, the General Data Protection Regulation ("GDPR") became effective May 2018, superseding existing European Union data protection legislation. Additionally, the California Consumer Privacy Act ("CCPA") was passed in June 2018 and is set to be effective in 2020. The GDPR and CCPA both provide certain data subjects with new data privacy rights, compel new operational requirements for companies, and impose potentially significant penalties for noncompliance. The cost to comply with the GDPR, CCPA and other new laws, regulations and industry standards, including costs associated with any related governmental investigations, enforcement actions, or litigations or claims, may limit the use and adoption of our products and services and could have an adverse impact on our business.

Advances in computer capabilities, new discoveries in the field of cryptography or other cyber-security developments may result in a compromise or breach of the technology we use to protect user transaction data and cyber-security attacks are becoming more sophisticated. Cyber-security risks such as malicious software and attempts to gain unauthorized access to data are rapidly evolving and could lead to disruptions in our network, unauthorized release of personally identifiable, confidential or otherwise protected information or corruption of data. Any compromises of our security could damage our reputation and brand and expose us to possible liability such as litigation claims or fines, which would substantially harm our business and operating results. We have incurred costs and may need to expend significant additional resources to appropriately protect against security breaches, implement processes to adequately respond to security breaches (including as may be required by applicable law, such as the GDPR), or to address problems caused by breaches.

Many countries, such as European Union member countries as a result of the 2006 E.U. Data Retention Directive, are introducing, or have already introduced into local law some form of traffic and user data retention requirements, which are generally applicable to providers of electronic communications services. Retention periods and data types vary from country to country, and the various local data protection and other authorities may implement traffic and user retention requirements regarding certain data in different and potentially overlapping ways. Although the constitutionality of the 2006 E.U. Data Retention Directive has been questioned, we may be required to comply with data retention requirements in one or more jurisdictions, or we may be required to comply with these requirements in the future as a result of changes or modifications to the Boingo solution or changes or modifications to the technological infrastructure on which the Boingo solution is based. Failure to comply with these retention requirements may result in the imposition of costly penalties. Compliance with these retention requirements can be difficult and costly from a legal, operational and technical perspective and could harm our business and operational results.

Various events could disrupt our networks, information systems or properties and could impair our operating activities and negatively impact our reputation and financial results.

Network and information systems technologies are critical to our operating activities, both for our internal uses and supplying services to our customers. Network or information system shutdowns or other service failure disruptions, such as access point failure at one of our managed and operated wireless infrastructure networks or a backhaul disruption, caused by events such as computer hacking, dissemination of computer viruses, worms and other destructive or disruptive software, "cyber-attacks," process breakdowns, denial of service attacks and other malicious activity pose increasing risks. Both unsuccessful and successful "cyber-attacks" on companies have continued to increase in frequency, scope and potential harm in recent years. While we develop and maintain systems seeking to prevent systems-related events and security breaches from occurring, the development and maintenance of these systems is costly and requires ongoing monitoring and updating as techniques used in such attacks become more sophisticated and change frequently. We, and the third parties on which we rely, may be unable to anticipate these techniques or implement adequate preventive measures. While from time to

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time attempts have been made to access our network, these attempts have not as yet resulted in any material release of information, degradation or disruption to our network and information systems. We maintain cyber liability insurance; however, this insurance may not be sufficient to cover the financial, legal, business or reputational losses that may result from an interruption or breach of our systems.

Our network and information systems are also vulnerable to damage or interruption from power outages, telecommunications failures, accidents, natural disasters (including extreme weather arising from short-term or any long-term changes in weather patterns), terrorist attacks and similar events. Further, the impacts associated with extreme weather or long-term changes in weather patterns, such as increased and intensified storm activity, may cause increased business interruptions. Our system redundancy may be ineffective or inadequate, and our disaster recovery planning may not be sufficient for all eventualities.

Any of these events, if directed at, or experienced by, us or technologies upon which we depend, could have adverse consequences on our network, our customers and our business, including damage to our or our customers' equipment and data and could result in lengthy interruptions in the availability of the Boingo solution. Large expenditures may be necessary to repair or replace damaged property, networks or information systems or to protect them from similar events in the future. Moreover, the amount and scope of insurance, if any, that we maintain against losses resulting from any such events or security breaches may not be sufficient to cover our losses or otherwise adequately compensate us for any disruptions to our business that may result. Any such significant service disruption could result in damage to our reputation and credibility, customer dissatisfaction and ultimately a loss of customers or revenue. Any significant loss of customers or revenue, or significant increase in costs of serving those customers, could adversely affect our growth, financial condition and results of operations.

We may be unsuccessful in expanding our international operations, which could harm the growth of our business, operating results and financial condition.

Our ability to expand internationally involves various risks, including the need to invest significant resources in unfamiliar markets, and the possibility that there may not be returns on these investments in the near future or at all. In addition, we have incurred and expect to continue to incur expenses before we generate any material revenue in these new markets. Our expansion plans will require significant management attention and resources. We have limited experience in selling our solutions in international markets or in conforming to local cultures, standards or policies. We may not be able to compete successfully in these international markets. Our ability to expand will also be limited by the demand for mobile Internet in international markets. Different privacy, censorship and liability standards and regulations and different intellectual property laws in foreign countries may cause our business and operating results to suffer.

Any future international operations may fail to succeed due to risks inherent in foreign operations, including:

different technological solutions for mobile Internet than those used in North America;

varied, unfamiliar and unclear legal and regulatory restrictions;

unexpected changes in international regulatory requirements and tariffs;

legal, political, social or systemic restrictions on the ability of U.S. companies to do business in foreign countries;

currency fluctuations;

Foreign Corrupt Practices Act compliance and related risks;

difficulties in staffing and managing foreign operations;

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difficulties in enforcing contracts and collecting accounts receivable, and longer payment cycles, especially in emerging markets;

reduced protection for intellectual property rights in some countries; and

potential adverse tax consequences.

Some of our business partners also have international operations and are subject to the risks described above. Even if we are able to successfully manage the risks of international operations, our business may be adversely affected if our business partners are not able to successfully manage these risks.

As a result of these obstacles, we may find it difficult or prohibitively expensive to expand internationally or we may be unsuccessful in our attempt to do so, which could harm our business, operating results and financial condition.

Acquisitions could be difficult to identify, pose integration challenges, divert the attention of management, disrupt our business, dilute stockholder value, and adversely affect our operating results and financial condition.

We have in the past acquired and may in the future seek to acquire or invest in businesses, products or technologies that we believe could complement or expand our business or otherwise offer growth opportunities. For example, in August 2018, we acquired substantially all of the assets of Elauwit Networks, LLC, a provider of high-speed Wi-Fi and technology solutions to the student and multifamily housing market. Acquisitions may disrupt our business, divert our resources and require significant management attention that would otherwise be available for development of our existing business.

In addition, we may not be able to integrate the acquired personnel, operations and technologies successfully, or effectively manage the combined business following the acquisition. We also may not achieve the anticipated benefits from the acquired business due to a number of factors, including:

inability to integrate or benefit from acquired technologies or services in a profitable manner;

unanticipated costs, accounting charges or other liabilities associated with the acquisition;

incurrence of acquisition-related costs;

difficulty integrating operations, personnel and accounting and other systems of the acquired business;

difficulties and additional expenses associated with supporting legacy products and hosting infrastructure of the acquired business, including due to language, geographical or cultural differences;

difficulty converting the customers of the acquired business onto our contract terms, including disparities in the revenues, licensing, support or services model of the acquired company;

adverse effects to our existing business relationships with business partners and customers as a result of the acquisition;

the potential loss of key employees;

use of resources that are needed in other parts of our business; and

use of substantial portions of our available cash to consummate the acquisition.

In addition, a significant portion of the purchase price of companies we acquire may be allocated to acquired goodwill and other intangible assets, which must be assessed for impairment at least

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annually. In the future, if our acquisitions do not yield expected returns, we may be required to take charges to our operating results based on this impairment assessment process, which could adversely affect our results of operations. In addition, our exposure to risks associated with various claims, including the use of intellectual property, may be increased as a result of acquisitions of other companies. For example, we may have a lower level of visibility into the development process with respect to intellectual property or the care taken to safeguard against infringement risks with respect to the acquired company or technology. In addition, third parties may make infringement and similar or related claims after we have acquired technology that has not been asserted prior to our acquisition.

Acquisitions could also result in dilutive issuances of equity securities or the incurrence of debt, which could adversely affect our operating results. In addition, if an acquired business fails to meet our expectations, our operating results, business and financial position may suffer.

We rely on our credit facility to fund a significant portion of our capital expenditures and other capital needs. If we are unable to achieve compliance with the credit facility covenants, or interest rates increase significantly, or we are unable to renew our credit facility on favorable terms, or at all, our business would be negatively impacted.

In February 2019, we entered into a new Credit Agreement ("New Credit Agreement") and related agreements with Bank of America, N.A. acting as agent for lenders named therein. The New Credit Agreement replaced our November 2014 Credit Agreement with Bank of America N.A. acting as agent for lenders named therein, which expired in November 2018. The New Credit Agreement places restrictions on our ability to take certain actions and sets standards for minimum financial performance. If we fail to comply with the terms and conditions of this New Credit Agreement, then the line of credit may be withdrawn, and the additional funds will not be available to us to fund our capital needs.

The regulation of Internet communications, products and services is currently uncertain, which poses risks for our business from changes in laws, regulations, and interpretation or enforcement of existing laws or regulations.

The current regulatory environment for Internet communications, products and services is uncertain. Many laws and regulations were adopted prior to the advent of the Internet and related technologies and often do not contemplate or address the specific issues associated with the Internet and related technologies. The scope of laws and regulations applicable to the Internet remains uncertain and is subject to statutory or interpretive change. We cannot be certain that we, our partners or our users are currently in compliance with regulatory or other legal requirements in the numerous countries in which our service is used. Our failure or the failure of our partners, users and others with whom we transact business, or to whom we license the Boingo solution, to comply with existing or future regulatory or other legal requirements could materially adversely affect our business, financial condition and results of operations. Regulators may disagree with our interpretations of existing laws or regulations or the applicability of existing laws or regulations to our business, and existing laws, regulations and interpretations may change in unexpected ways.

We believe that the Boingo solution is on the forefront of wireless infrastructure connectivity, and therefore it may face greater regulatory scrutiny than other communications products and services. We cannot be certain what positions regulators may take regarding our compliance with, or lack of compliance with, current and future legal and regulatory requirements or what positions regulators may take regarding any past or future actions we have taken or may take in any jurisdiction. Regulators may determine that we are not in compliance with legal and regulatory requirements, and impose penalties, or we may need to make changes to the Boingo solution, which could be costly and difficult. Any of these events would adversely affect our operating results and business.

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If we lose key personnel or are unable to attract and retain personnel on a cost-effective basis, our business could be harmed.

Our performance is substantially dependent on the continued services and performance of our senior management and our highly qualified team of engineers, many of whom have numerous years of experience and specialized expertise in our business. If we are not successful in hiring and retaining highly qualified engineers, we may not be able to extend or maintain our engineering and technological expertise and our future product and service development efforts could be adversely affected. Additionally, the process of attracting and retaining suitable replacements for any executive officers or any of our highly qualified engineers we lose in the future would result in transition costs and would divert the attention of other members of our senior management from our existing operations. Additionally, such a loss could be negatively perceived in the capital markets. If we lose members of our senior management, this may significantly delay or prevent the achievement of our strategic objectives and adversely affect our operating results.

Our future success also depends on our ability to identify, attract, hire, train, retain and motivate highly skilled managerial, operations, business development and marketing personnel. We have in the past maintained a rigorous, highly selective and time-consuming hiring process. We believe that our approach to hiring has significantly contributed to our success to date. However, our highly selective hiring process has made it more difficult for us to hire a sufficient number of qualified employees, and, as we grow, our hiring process may prevent us from hiring the personnel we need in a timely manner. Moreover, the cost of living in the Los Angeles area, where our corporate headquarters is located, has been an impediment to attracting new employees in the past, and we expect that this will continue to impair our ability to attract and retain employees in the future. If we fail to attract, integrate and retain the necessary personnel, we may not be able to grow effectively, and our business could suffer significantly.

Material defects or errors in our software could harm our reputation and brand, result in significant costs to us and impair our ability to sell the Boingo solution.

The software underlying the Boingo solution is inherently complex and may contain material defects or errors, particularly when the software is first introduced or when new versions or enhancements are released. We have from time to time found defects or errors in our software, and defects or errors in our existing software may be detected in the future. Any defects or errors that cause interruptions to the availability of our services could result in:

a reduction in sales or delay in market acceptance of the Boingo solution;

sales credits or refunds to our users and wholesale partners;

loss of existing users and difficulty in attracting new users;

diversion of development resources;

harm to our reputation and brand image; and

increased insurance costs.

The costs incurred in correcting any material defects or errors in our software may be substantial and could harm our operating results.

Our business depends on strong brands, and if we do not cost effectively develop, maintain and enhance our brand, our financial condition and operating results could be harmed.

We believe that the Boingo brand is a critical part of our business and that developing and maintaining awareness of our brand is important to achieving widespread acceptance of the Boingo

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solution and is an important element in attracting and retaining customers and partners. We continue to seek new ways to promote our brand through our managed and operated hotspots. We intend to enhance our brand through low-cost co-marketing arrangements with our partners and through periodic promotional and sponsorship activities and by continuing to leverage the reach of social media to interact with our customers. In order to maintain strong relationships with our venue and network partners, we may have to reduce the visibility of the Boingo brand or make other decisions that do not promote and maintain the Boingo brand, such as our custom branding alternatives that we offer to wholesale clients. If we fail to promote and maintain the Boingo brand, or if we incur significant expenses to promote the brand and are still unsuccessful in maintaining a strong brand, our financial condition and operating results could be harmed.

Additionally, we believe that developing this brand in a cost-effective manner is important in meeting our expected margins. Brand promotion activities may not result in increased revenue, and any increased revenue resulting from these promotion activities may not offset the expenses we incurred in building our brand. If we fail to cost effectively build and maintain our brand, we may fail to attract or retain customers or partners, and our financial condition and results of operations could be harmed.

Worldwide economic conditions, and their impact on travel and consumer spending, may adversely affect our business, operating results and financial condition.

Our business is impacted by travel and consumer spending, because users seek to access the mobile Internet while they are on-the-go, and because spending on Internet access is often a consumer discretionary spending decision. Factors that tend to negatively impact levels of travel include high unemployment, high energy prices, low business and consumer confidence, the fear of terrorist attacks, war and other macroeconomic factors. Economic conditions that tend to negatively impact levels of discretionary consumer spending include high unemployment, high consumer debt, reductions in net worth, depressed real estate markets, increased taxation, high energy prices, high interest rates, low consumer confidence and other macroeconomic factors. If the global economic recovery is slower than expected, or if it weakens, our military and retail customer base, new military and retail customer acquisition and usage-based revenue could be materially harmed, and our results of operations would be adversely affected.

The growth of free Wi-Fi networks may compete with our paid mobile Wi-Fi Internet solutions.

Many venues offer free mobile Wi-Fi as an incentive or value-added benefit to their customers. Free Wi-Fi may reduce retail customer demand for our services and put downward pressure on the prices we charge our retail customers. In addition, telecom operators may offer free mobile Wi-Fi as part of a home broadband or other service contract, which also may force down the prices we charge our retail customers. If we are unable to effectively offset this downward pressure on our prices by being a Wi-Fi service provider or sufficiently grow our DAS and small cell business, or if we are unable to acquire and retain retail customers, we will have lower profit margins and our operating results and financial condition may be adversely impacted.

We rely on third-party customer support service providers for the majority of our customer support calls. If these service providers experience operational difficulties or disruptions, our business could be adversely affected.

We depend on third-party customer support service providers to handle most of our routine multifamily, military and retail customer support cases. While we maintain limited customer support operations in our Los Angeles headquarters and our Columbia office, if our relationships with our customer support service providers terminate unexpectedly, or if our customer service providers experience operational difficulties, we may not be able to respond to customer support calls in a timely manner and the quality of our customer service would be adversely affected. This could harm our reputation and brand image and make it difficult for us to attract and retain users. In addition, the loss of our customer support service providers would require us to identify and contract with alternative sources, which could prove time-consuming and expensive.

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If we are not successful in developing our mobile application for new devices and platforms, or if those solutions are not widely adopted, our results of operations and business could be adversely affected.

As new mobile devices and platforms are developed, we may encounter problems in developing products for such new mobile devices and platforms, and we may need to devote significant resources to the creation, support, and maintenance of such products. In addition, if we experience difficulties integrating our mobile applications into mobile devices, or if we face increased costs to distribute our mobile applications, our future growth and our results of operations could suffer.

If we fail to maintain relationships with providers of mobile operating systems or mobile application download stores, our business could be adversely affected.

We rely on the integration of our software into mobile operating systems to allow mobile devices to connect to our global network of wireless networks. If problems arise with our relationships with providers of mobile operating systems or mobile application download stores, such as the Apple App Store and Google Play, or if our mobile application receives unfavorable treatment compared to the promotion and placement of competing applications, such as the order of our products in the mobile application download stores, we may fail to attract or retain customers or partners, and our business could be adversely affected.

Risks Related to Our Intellectual Property

Claims by others that we infringe their proprietary technology could harm our business.

In recent years there has been significant litigation involving intellectual property rights in many technology-based industries, including the wireless communications industry. While we have not been specifically targeted, companies similar to us have been subject to patent lawsuits. As we face increasing competition and gain an increasingly high profile, the possibility of intellectual property rights claims against us grows. We may be subject to third-party claims in the future. The costs of supporting these litigations and disputes are considerable, and there can be no assurance that a favorable outcome will be obtained. We may be required to settle these litigations and disputes on terms that are unfavorable to us, given the complex technical issues and inherent uncertainties in intellectual property litigation. Claims that the Boingo solution infringes third-party intellectual property rights, regardless of their merit or resolution, could also divert the efforts and attention of our management and technical personnel. The terms of any settlements or judgments may require us to:

cease distribution and back-end operation of the Boingo solution;

pay substantial damages for infringement;

expend significant resources to develop non-infringing solutions;

license technology from the third-party claiming infringement, which may not be available on commercially reasonable terms, or at all;

cross-license our technology to a competitor to resolve an infringement claim, which could weaken our ability to compete with that competitor; or

pay substantial damages to our partners to discontinue their use of or to replace infringing solutions sold to them with non-infringing solutions.

Any of these unfavorable outcomes could have a material adverse effect on our business, financial condition and results of operations.

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Our use of open source software could limit our ability to commercialize the Boingo solution.

We have incorporated open source software into the Boingo solution. Although we closely monitor our use of open source software, we are subject to the terms of open source licenses that have not been interpreted by U.S. or foreign courts, and there is a risk that in the future these licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to commercialize the Boingo solution. In that event, we could be required to seek licenses from third parties or to re-engineer our software in order to continue offering the Boingo solution, or to discontinue operations, any of which could materially adversely affect our business.

We utilize unlicensed spectrum in certain of our offerings, which is subject to intense competition, low barriers of entry and slowdowns due to multiple users.

We presently utilize unlicensed spectrum to provide our Wi-Fi Internet solutions. Unlicensed or "free" spectrum is available to multiple users and may suffer bandwidth limitations, interference and slowdowns if the number of users exceeds traffic capacity. The availability of unlicensed spectrum is not unlimited, and others do not need to obtain permits or licenses to utilize the same unlicensed spectrum that we currently, or may in the future, utilize. The inherent limitations of unlicensed spectrum could potentially threaten our ability to reliably deliver our services. Moreover, the prevalence of unlicensed spectrum creates low barriers to entry in our industry.

If we are unable to protect our intellectual property rights, our competitive position could be harmed, or we could be required to incur significant expenses to enforce our rights.

Our business depends on our ability to protect our proprietary technology. We rely on trade secret, patent, copyright and trademark laws and confidentiality agreements with employees and third parties, all of which offer only limited protection. We own eight patents and have applications for two additional patents pending in the United States. Despite our efforts, the steps we have taken to protect our proprietary rights may not be adequate to prevent the use or misappropriation of our proprietary information or infringement of our intellectual property rights. Our ability to police the use, misappropriation or infringement of our intellectual property is uncertain, particularly in countries other than the United States. Further, we do not know whether any of our pending patent applications will result in the issuance of patents or whether the examination process will require us to narrow our claims. Even if patents are issued, they may be contested, circumvented, or invalidated in the future. Moreover, the rights granted under any issued patents may not provide us with complete proprietary protection or any competitive advantages, and, as with any technology, competitors may be able to develop similar or superior technologies on their own now or in the future. Protecting against the unauthorized use of our solutions, trademarks, and other proprietary rights is expensive, difficult and, in some cases, impossible. Litigation may be necessary in the future to enforce or defend our intellectual property rights, to protect our trade secrets, or to determine the validity and scope of the proprietary rights of others. Litigation could result in substantial costs and diversion of management resources, either of which could harm our business. Furthermore, many of our current and potential competitors have the ability to dedicate substantially greater resources to enforce their intellectual property rights than we do. Accordingly, despite our efforts, if the protection of our proprietary rights is inadequate to prevent use or misappropriation by third parties, the value of our brand and other intangible assets may be diminished and competitors may be able to more effectively mimic our service and methods of operations. Any of these events would have a material adverse effect on our business, financial condition and results of operations.

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Risks Related to Our Convertible Notes

We have incurred substantial indebtedness that may decrease our business flexibility, access to capital, and/or increase our borrowing costs, and we may still incur substantially more debt, which may adversely affect our operations and financial results.

In October 2018, we issued \$201.25 million aggregate principal amount of 1.00% convertible senior notes due 2023 ("Convertible Notes"). Our indebtedness may:

limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general business purposes;

limit our ability to use our cash flow or obtain additional financing for future working capital, capital expenditures, acquisitions or other general business purposes;

require us to use a substantial portion of our cash flow from operations to make debt service payments;

limit our flexibility to plan for, or react to, changes in our business and industry;

place us at a competitive disadvantage compared to our less leveraged competitors; and

increase our vulnerability to the impact of adverse economic and industry conditions.

Further, the indenture governing the Convertible Notes does not restrict our ability to incur additional indebtedness and we and our subsidiaries may incur substantial additional indebtedness in the future, subject to the restrictions contained in any future debt instruments existing at the time, some of which may be secured indebtedness.

Servicing our debt will require a significant amount of cash. We may not have sufficient cash flow from our business to pay our substantial debt, and we may not have the ability to raise the funds necessary to settle conversions of the Convertible Notes in cash or to repurchase the Convertible Notes upon a fundamental change, which could adversely affect our business and results of operations.

Our ability to make scheduled payments of the principal of, to pay interest on, or to refinance our indebtedness, including the amounts payable under the Convertible Notes, depends on our future performance, which is subject to economic, financial, competitive, and other factors beyond our control. Our business may not continue to generate cash flow from operations in the future sufficient to service our indebtedness and make necessary capital expenditures. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt, or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

Further, holders of the Convertible Notes have the right to require us to repurchase all or a portion of their Convertible Notes upon the occurrence of a "fundamental change" (as defined in the indenture governing the Convertible Notes (the "indenture")) before the maturity date at a repurchase price equal to 100% of the principal amount of the Convertible Notes to be repurchased, plus accrued and unpaid interest, if any. In addition, upon conversion of the Convertible Notes, unless we elect to deliver solely shares of our common stock to settle such conversion (other than paying cash in lieu of delivering any fractional share), we will be required to make cash payments in respect of the Convertible Notes being converted. However, we may not have enough available cash or be able to obtain financing at the time we are required to make repurchases of Convertible Notes surrendered therefor or pay cash with respect to Convertible Notes being converted.

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

In the event the conditional conversion feature of the Convertible Notes is triggered, holders of the Convertible Notes will be entitled to convert their Convertible Notes at any time during specified periods at their option. If one or more holders elect to convert their Convertible Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation in cash, which could adversely affect our liquidity.

In addition, even if holders of Convertible Notes do not elect to convert their Convertible Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Convertible Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

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

Under Accounting Standards Codification 470-20, *Debt with Conversion and Other Options* ("ASC 470-20"), an entity must separately account for the liability and equity components of the convertible debt instruments (such as the Convertible Notes) that may be settled entirely or partially in cash upon conversion in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the Convertible Notes is that the equity component is required to be included in the additional paid-in capital section of stockholders' equity on our consolidated balance sheet at the issuance date and the value of the equity component would be treated as debt discount for purposes of accounting for the debt component of the Convertible Notes. As a result, we will be required to record a greater amount of non-cash interest expense as a result of the amortization of the discounted carrying value of the Convertible Notes to their face amount over the term of the Convertible Notes. We will report larger net losses (or lower net income) in our financial results because ASC 470-20 will require interest to include both the amortization of the debt discount and the instrument's non-convertible coupon interest rate, which could adversely affect our reported or future financial results, the trading price of our common stock and the trading price of the Convertible Notes.

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

The capped call transactions may affect the value of the Convertible Notes and our common stock.

In connection with the pricing the Convertible Notes and exercise of the over-allotment option to purchase additional Convertible Notes, we entered into capped call transactions with a financial institution. The capped call transactions are expected generally to reduce potential dilution upon conversion of the Convertible Notes and/or offset any cash payments we are required to make in excess of the principal amount of converted Convertible Notes, as the case may be, with such reduction and/or offset subject to a cap.

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In connection with establishing its initial hedges of the capped call transactions, the financial institution or its affiliate likely purchased shares of our common stock and/or entered into various derivative transactions with respect to our common stock concurrently with or shortly after the pricing of the Convertible Notes. The financial institution or its affiliate may modify its hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions following the pricing of the Convertible Notes and prior to the maturity of the Convertible Notes (and are likely to do so during any observation period related to a conversion of Convertible Notes). This activity could also cause or avoid an increase or a decrease in the market price of our common stock or the Convertible Notes.

The potential effect, if any, of these transactions and activities on the price of our common stock or the Convertible Notes will depend in part on market conditions and cannot be ascertained at this time. Any of these activities could adversely affect the value of our common stock.

Conversion of the Convertible Notes will dilute the ownership interest of existing stockholders, including holders who had previously converted their Convertible Notes, or may otherwise depress the price of our common stock.

The conversion of some or all of the Convertible Notes will dilute the ownership interests of existing stockholders to the extent we deliver shares of our common stock upon conversion of any of the Convertible Notes. The Convertible Notes are currently convertible and may from time to time in the future be convertible at the option of their holders prior to their scheduled terms under certain circumstances. Any sales in the public market of the common stock issuable upon such conversion could adversely affect prevailing market prices of our common stock. In addition, the existence of the Convertible Notes may encourage short selling by market participants because the conversion of the Convertible Notes could be used to satisfy short positions, or anticipated conversion of the Convertible Notes into shares of our common stock could depress the price of our common stock.

Risks Related to Ownership of Our Common Stock

The market price of our common stock may be volatile, which could result in substantial losses for investors.

Fluctuations in market price and volume are particularly common among securities of technology companies. As a result, you may be unable to sell your shares of common stock at or above the price you paid. The market price of our common stock and trading price of our Convertible Notes may fluctuate significantly in response to the factors described in this risk factor section as well as the following factors, among others, many of which are beyond our control:

general market conditions;

domestic and international economic factors unrelated to our performance;

actual or anticipated fluctuations in our quarterly operating results;

changes in or failure to meet publicly disclosed expectations as to our future financial performance;

changes in securities analysts' estimates of our financial performance or lack of research and reports by industry analysts;

changes in market valuations or earnings of similar companies;

announcements by us or our competitors of significant products, contracts, acquisitions, or strategic partnerships;

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developments or disputes concerning patents or proprietary rights, including increases or decreases in litigation expenses associated with intellectual property lawsuits we may initiate, or in which we may be named as defendants;

termination or potential termination of a relationship with a venue partner;

failure to complete significant sales;

any future sales of our common stock or other securities; and

additions or departures of key personnel.

If securities or industry analysts publish misleading or unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock and our Convertible Notes depends in part on the research and reports that securities or industry analysts publish about us or our business. If one or more of these analysts downgrades our stock or publishes misleading or unfavorable research about our business, our stock price and the trading price of our Convertible Notes would likely decline. If one or more of these analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which could cause our stock price or the trading price of our Convertible Notes or trading volume to decline. Announcements by analysts that may have a significant impact on the market price of our common stock and the trading price of our Convertible Notes may relate to:

our operating results or forecasts;

new issuances of equity, debt or convertible debt by us;

developments in our relationships with corporate customers;

announcements by our customers or competitors;

changes in regulatory policy or interpretation;

governmental investigations;

changes in the industries in which we operate;

changes in the ratings of our stock by rating agencies or securities analysts;

our acquisitions of complementary businesses; or

our operational performance.

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As a public company, we are subject to financial and other reporting and corporate governance requirements that may be difficult for us to satisfy and may divert resources and management attention from operating our business.

We are required to file annual, quarterly and other reports with the SEC. We must prepare and timely file financial statements that comply with SEC reporting requirements. We are also subject to other reporting and corporate governance requirements, under the listing standards of the NASDAQ Stock Market, or NASDAQ, which imposes significant compliance obligations upon us. We are required, among other things, to:

prepare and file periodic reports, and distribute other stockholder communications, in compliance with the federal securities laws and NASDAQ rules; and

evaluate and maintain our system of internal control over financial reporting, and report on management's assessment thereof, in compliance with rules and regulations of the SEC and the

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Public Company Accounting Oversight Board. Further, we are required to obtain an opinion on the effectiveness of our internal control over financial reporting as of December 31st each year from our independent registered public accounting firm.

If we fail to comply with the rules of Section 404 of the Sarbanes-Oxley Act of 2002 related to accounting controls and procedures, or, if we discover material weaknesses and deficiencies in our internal control and accounting procedures, our financial results may be adversely effected and we may be subject to sanctions by regulatory authorities and our stock price and the trading price of our Convertible Notes could decline.

Section 404 of the Sarbanes-Oxley Act (the "Act") requires that we evaluate and determine the effectiveness of our internal control over financial reporting and requires an attestation and report by our external auditing firm on our internal control over financial reporting. We believe our system and process evaluation and testing comply with the management certification and auditor attestation requirements of Section 404. We cannot be certain, however, that we will be able to satisfy the requirements in Section 404 in all future periods, especially as we grow our business. If we are not able to continue to meet the requirements of Section 404 in a timely manner or with adequate compliance, we may be subject to sanctions or investigation by regulatory authorities, such as the SEC or the NASDAQ Stock Market. Any such action could adversely affect our financial results or investors' confidence in us and could cause our stock price and the trading price of our Convertible Notes to fall. Moreover, if we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identifies deficiencies in our internal controls that are deemed to be material weaknesses, we may be required to incur significant additional financial and management resources to achieve compliance.

If we need additional capital in the future, it may not be available on favorable terms, or at all.

We may require additional capital from equity or debt financing in the future to fund our operations or respond to competitive pressures or strategic opportunities. We may not be able to secure timely additional financing on favorable terms, or at all. The terms of additional financing may place limits on our financial and operating flexibility. If we raise additional funds through further issuances of equity, convertible debt securities or other securities convertible into equity, our existing stockholders could suffer significant dilution in their percentage ownership of our company, and any new securities we issue could have rights, preferences and privileges senior to those of holders of our common stock. If we are unable to obtain adequate financing or financing on terms satisfactory to us, if and when we require it, our ability to grow or support our business and to respond to business challenges and opportunities could be significantly limited.

Investors may experience dilution of their ownership interests because of the future issuance of additional shares of our capital stock.

We are authorized to issue 100,000,000 shares of common stock and 5,000,000 shares of preferred stock. As of December 31, 2018, there were approximately 42,669,000 shares of our common stock issued and outstanding and no shares of preferred stock outstanding. In addition, as of December 31, 2018, we had approximately 3,119,000 unvested restricted stock units, approximately 304,000 exercisable stock options, approximately 2,979,000 shares available for grant under the 2011 Plan, and approximately 4,756,000 shares subject to conversion under the Convertible Notes.

In the future, we may issue additional authorized but previously unissued equity securities resulting in the dilution of the ownership interests of our present stockholders. We may also issue additional shares of our capital stock or other securities that are convertible into or exercisable for our capital stock in connection with hiring or retaining employees or for other business purposes, including future sales of our securities for capital raising purposes. The future issuance of any such additional shares of

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capital stock may create downward pressure on the trading price of our common stock and our Convertible Notes.

Anti-takeover provisions in our charter documents and Delaware law and provisions in the indenture for our Convertible Notes could discourage, delay, or prevent a change in control of our company and may affect the trading price of our common stock.

We are a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law may discourage, delay, or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. In addition, our amended and restated certificate of incorporation and amended and restated bylaws may discourage, delay, or prevent a change in our management or control over us that stockholders may consider favorable. Institutional shareholder representative groups, shareholder activists and others may disagree with our corporate governance provisions or other practices, such as those listed below. We generally will consider recommendations of institutional shareholder representative groups, but we will make decisions based on what our board and management believe to be in the best long-term interests of our company and stockholders. These groups could make recommendations to our stockholders against our practices or our board members if they disagree with our positions. Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

authorize the issuance of "blank check" preferred stock that could be issued by our board of directors to thwart a takeover attempt;

establish a classified board of directors (that is being phased out over the next year), which prevents, until the 2020 annual meeting of stockholders when all directors will be elected annually, the ability of a stockholder to launch a proxy contest to replace the entire board of directors;

require that until the expiration of the term of any director elected to serve a three-year term, such directors may only be removed from office for cause and only upon a majority stockholder vote;

provide that vacancies on the board of directors, including newly-created directorships, may be filled only by a majority vote of directors then in office;

limit who may call special meetings of stockholders;

prohibit stockholder action by written consent, thereby requiring all actions to be taken at a meeting of the stockholders; and

require supermajority stockholder voting to effect certain amendments to our amended and restated certificate of incorporation and amended and restated bylaws.

In addition, as a Delaware corporation, we are subject to Section 203 of the Delaware General Corporation Law. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

In addition, if a fundamental change occurs prior to the maturity date of the Convertible Notes, holders of the Convertible Notes will have the right, at their option, to require us to repurchase all or a portion of their Convertible Notes. If a "make-whole fundamental change" (as defined in the indenture) occurs prior to the maturity date, we will in some cases be required to increase the conversion rate of the Convertible Notes for a holder that elects to convert its Convertible Notes in connection with such make-whole fundamental change. Furthermore, the indenture prohibits us from

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engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the Convertible Notes.

These and other provisions in our charter documents, Convertible Notes, indenture and in Delaware law could deter or prevent a third party from acquiring us or could make it more difficult for stockholders or potential acquirors to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including to delay or impede a merger, tender offer, or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and the trading price of the Convertible Notes and limit opportunities for you to realize value in a corporate transaction.

Our business could be negatively affected as a result of a potential proxy contest for the election of directors at our annual meeting or other shareholder activism.

In 2016, we were subjected to a proxy contest, which resulted in the negotiation of changes to the board of directors and considerable costs were incurred. A future proxy contest would most likely require us to incur significant legal fees and proxy solicitation expenses and require significant time and attention by management and our board of directors. The potential of a proxy contest or other shareholder activism could interfere with our ability to execute our strategic plan, give rise to perceived uncertainties as to our future direction, result in the loss of potential business opportunities or make it more difficult to attract and retain qualified personnel, any of which could materially and adversely affect our business and operating results.

We have incurred substantial losses in past and current years and may incur additional losses in the future.

As of December 31, 2018, our accumulated deficit was \$129.9 million. We generated a net loss for the year ended December 31, 2018 and we are also currently investing in our future growth through expanding our network and buildouts, investing in our software, and consideration of future business acquisitions. As a result, we will incur higher depreciation and other operating expenses, as well as potential acquisition costs, that may negatively impact our ability to achieve profitability in future periods unless and until these growth efforts generate enough revenue to exceed their operating costs and cover our additional overhead needed to scale our business for this anticipated growth. The current global financial condition may also impact our ability to achieve profitability if we cannot generate sufficient revenue to offset the increased costs. In addition, costs associated with the acquisition and integration of any acquired companies may also negatively impact our ability to achieve profitability. For example, in August 2018 we closed the acquisition of substantially all of the assets of Elauwit Networks, LLC and our integration costs may negatively impact our ability to achieve profitability. Finally, given the competitive and evolving nature of the industry in which we operate, we may not be able to achieve or increase profitability.

We do not intend to pay dividends on our common stock and, consequently, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We do not intend to declare and pay dividends on our capital stock for the foreseeable future. We currently intend to invest our future earnings, if any, to fund our growth. Therefore, you are not likely to receive any dividends on your common stock for the foreseeable future and the success of an investment in shares of our common stock will depend upon any future appreciation in its value.

Changes in accounting standards and their interpretations could adversely affect our operating results.

U.S. GAAP are subject to interpretation by the Financial Accounting Standards Board, or FASB, the Public Company Accounting Oversight Board, or PCAOB, the SEC, and various other bodies that

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promulgate and interpret appropriate accounting principles. These principles and related implementation guidelines and interpretations can be highly complex and involve subjective judgments. A change in these principles or interpretations, including the implementation of ASU 2016-02, *Leases (Topic 842)*, or accounting for the Convertible Notes could have a significant effect on our reported financial results, and could affect the reporting of transactions completed before or after the announcement of a change. Additionally, the adoption of these standards may potentially require enhancements or changes in our systems and will require significant time and cost on behalf of our financial management. A discussion of these standards and other pending changes in accounting principles generally accepted in the United States, are further discussed in Footnote 2 in the notes to our consolidated financial statements.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

As of December 31, 2018, we leased approximately 53,000 square feet of space for our corporate headquarters in Los Angeles, California. As of December 31, 2018, we also leased an approximately 27,000 additional square feet in aggregate office space in San Francisco, California; Oak Brook, Illinois; Charleston, South Carolina; Columbia, South Carolina; Lake Success, New York; New York, New York; McKinney, Texas; Detroit, Michigan; Sao Paulo, Brazil; and Dubai, United Arab Emirates. We believe that our office facilities will be adequate for the foreseeable future.

Item 3. Legal Proceedings

From time to time, we may be involved in or subject to claims, suits, investigations and proceedings arising out of the normal course of business. We are not currently a party to any litigation that we believe could have a material adverse effect on our business, financial position, results of operations or cash flows.

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

Our common stock is traded on the NASDAQ Global Market under the symbol "WIFI."

Registered Stockholders

As of February 22, 2019, there were 22 stockholders of record of our common stock. Stockholders of record do not include a substantially greater number of "street name" holders or beneficial holders of our common stock whose shares are held of record by banks, brokers and other financial institutions.

Dividends

We have never declared or paid cash dividends on our common stock, and currently do not anticipate paying cash dividends in the foreseeable future. Any future determination to pay dividends on our common stock, if permissible, will be at the discretion of our board of directors and will depend

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upon, among other factors, our financial condition, operating results, current and anticipated cash needs, plans for expansion and other factors that our board of directors may deem relevant.

Recent Sales of Unregistered Securities; Use of Proceeds from Sale of Registered Securities

We did not sell any equity securities not registered under the Securities Act during the year ended December 31, 2018.

Issuer Purchases of Equity Securities

On April 1, 2013, the Company approved a stock repurchase program to repurchase up to \$10,000,000 of the Company's common stock in the open market, exclusive of any commissions, markups or expenses. The stock repurchased will be retired and will resume the status of authorized but unissued shares of common stock. The Company did not repurchase any of our common stock during the years ended December 31, 2018 and 2017. As of December 31, 2018, the remaining approved amount for repurchases was approximately \$5,180,000.

Equity Compensation Plan Information

On March 12, 2018, the Company filed a registration statement on Form S-8 to register 1,844,781 shares representing additional shares authorized as of January 1, 2018 under the Evergreen Provision of the 2011 Equity Incentive Plan. The Evergreen Provision of the 2011 Equity Incentive Plan terminated after January 1, 2018.

Performance Measurement Comparison

The following performance graph shows the total stockholder return of an investment of \$100 in cash made on December 31, 2013 in each of (i) our common stock, (ii) a broad equity market index, the securities comprising the Nasdaq Composite Index, and (iii) issuers with similar market capitalizations, the securities comprising the Russell 2000 index.

The performance graph assumes that \$100 was invested on December 31, 2013 in our common stock and in each index, and that all dividends were reinvested. No dividends have been declared nor paid on our common stock. The comparisons in the graph below are required by the SEC and are not intended to forecast or be indicative of possible future performance of our common stock.

Table of Contents**COMPARISON OF 60 MONTHS CUMULATIVE TOTAL RETURN***

Among Boingo Wireless, Inc., The NASDAQ Composite Index and The Russell 2000 Index**

	12/31/13	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18
NASDAQ Composite						
Index	\$ 100.00	\$ 113.40	\$ 119.89	\$ 128.89	\$ 165.29	\$ 158.87
Russell 2000 Index	\$ 100.00	\$ 103.53	\$ 97.62	\$ 116.63	\$ 131.96	\$ 115.89
Boingo	\$ 100.00	\$ 119.66	\$ 103.28	\$ 190.17	\$ 351.01	\$ 320.90

*

The material in this section is not "soliciting material" and is not deemed "filed" with the SEC. It is not to be incorporated by reference into any filing of Boingo Wireless, Inc. made under the Securities Act of 1933, as amended, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing, except to the extent we specifically incorporate this section by reference.

**

We chose the Russell 2000 index because it is comprised of issuers with similar market capitalizations. We do not believe that we can reasonably identify a peer group of issuers or an industry or line-of-business index.

ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 and our accompanying consolidated financial statements in Part II, Item 8 of this report.

The consolidated statements of operations data set forth below for years 2018, 2017 and 2016 and the consolidated balance sheets data as of the end of years 2018 and 2017 are derived from, and qualified by reference to, the audited consolidated financial statements included in Item 8 of this report. The consolidated statements of operations data for years 2015 and 2014 and the consolidated balance sheets data as of the end of years 2016, 2015 and 2014 are derived from the audited financial statements previously filed with the SEC on Form 10-K. The results of businesses acquired in a business combination are included in the Company's consolidated financial statements from the date of the acquisition.

On August 1, 2018, we acquired the assets of Elauwit Networks, LLC ("Elauwit") for \$29.5 million, which included cash paid at closing, holdback consideration, and the fair value of additional contingent consideration that would be due and payable subject to certain conditions and the successful achievement of annual revenue targets during the 2018, 2019, and 2020 fiscal years. Elauwit provides data and video services to multi-unit dwelling properties including student housing,

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condominiums, apartments, senior living, and hospitality industries throughout the U.S. In addition, Elauwit builds and maintains the network that supports these services for property owners and managers and provides support for residents and employees. For further information on our Elauwit acquisition, refer to Footnote 3 in the notes to our consolidated financial statements.

Prior to August 4, 2015, we had a 70% ownership of Concourse Communications Detroit, LLC. On August 4, 2015, we purchased the remaining 30% ownership interest from the non-controlling interest owners for \$1.15 million. We accounted for this transaction as an acquisition of the remaining interest of an entity that had already been majority-owned by the Company. The purchase resulted in a reduction to additional paid-in capital of \$1.15 million, representing excess purchase price over the carrying amount of the non-controlling interests. Prior to this purchase, we had a controlling interest in this subsidiary, and therefore, this subsidiary had been and will continue to be consolidated with the Company's operations.

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers*, which replaced the accounting standards for revenue recognition under FASB Accounting Standards Codification ("ASC") 605, *Revenue Recognition*, with a single comprehensive five-step model, eliminating industry-specific accounting rules. The core principle is to recognize revenue upon the transfer of control of goods or services to a customer at an amount that reflects the consideration expected to be received. The FASB amended several aspects of the guidance after the issuance of ASU 2014-09, and the new revenue recognition accounting standard, as amended, was codified within ASC 606, *Revenue from Contracts with Customers*. On January 1, 2018, we adopted ASC 606 using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. Results for reporting periods beginning on January 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with ASC 605.

Adoption of ASC 606 using the modified retrospective method required us to record a cumulative effect adjustment, net of tax, to accumulated deficit and non-controlling interests of \$3,257,000 and \$69,000, respectively, on January 1, 2018. In addition, adoption of the standard resulted in the following changes to the consolidated balance sheet as of January 1, 2018:

	January 1, 2018 (Per ASC 605)	Adjustment for Adoption	January 1, 2018 (Per ASC 606)
	(in thousands)		
Accounts receivable, net	\$ 26,148	\$ (1,069)	\$ 25,079
Prepaid expenses and other current assets	\$ 6,369	\$ 170	\$ 6,539
Other assets	\$ 10,082	\$ (2,179)	\$ 7,903
Deferred revenue, current	\$ 61,708	\$ 14,176	\$ 75,884
Deferred revenue, net of current portion	\$ 149,168	\$ (20,580)	\$ 128,588

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The below table summarizes the changes to our consolidated balance sheet as of December 31, 2018 as a result of the adoption of ASC 606:

	December 31, 2018 (Per ASC 605)	Adjustment for Adoption	December 31, 2018 (Per ASC 606)
	(in thousands)		
Accounts receivable, net	\$ 43,410	\$ (644)	\$ 42,766
Prepaid expenses and other current assets	\$ 7,603	\$ 212	\$ 7,815
Other assets	\$ 12,224	\$ (2,288)	\$ 9,936
Deferred revenue, current	\$ 82,731	\$ (2,348)	\$ 80,383
Deferred revenue, net of current portion	\$ 147,785	\$ (10,580)	\$ 137,205
Non-controlling interests	\$ 408	\$ 1,803	\$ 2,211

The below table summarizes the changes to our consolidated statement of operations for the year ended December 31, 2018 as a result of the adoption of ASC 606 with income taxes calculated excluding the tax effect on the equity component of the Convertible Notes:

	Year Ended December 31, 2018 (Per ASC 605)	Adjustment for Adoption	Year Ended December 31, 2018 (Per ASC 606)
	(in thousands)		
Revenue	\$ 244,307	\$ 6,514	\$ 250,821
Income tax benefit	\$ (4,785)	\$ (368)	\$ (5,153)
Non-controlling interests	\$ (245)	\$ 1,734	\$ 1,489

The changes to the consolidated balance sheets as of January 1, 2018 and December 31, 2018 and the consolidated statement of operations for the year ended December 31, 2018 were primarily due to the following factors: (i) reclassification of unbilled receivables (contract assets) to a contra-liability account under ASC 606; and (ii) recognition of revenue related to our single performance obligation for our DAS contracts monthly over the contract term once the customer has the ability to access the DAS network and we commence maintenance on the DAS network under ASC 606 as compared to recognition of build-out fees for our DAS contracts monthly over the term of the estimated customer relationship period once the build-out is complete and minimum monthly access fees for our DAS contracts monthly over the term of the telecom operator agreement under ASC 605. The changes to the consolidated balance sheet as of January 1, 2018 are reflected as non-cash changes within cash provided by operating activities in our consolidated statement of cash flows for the year ended December 31, 2018.

We early adopted FASB ASU 2016-09, *Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting*, as of January 1, 2016. As a result of this adoption, we recorded \$6,933,000 and \$589,000 of net deferred tax assets related to our federal and state net operating losses for excess windfall tax benefits, respectively, as of January 1, 2016. We established a full valuation allowance against those deferred tax assets as of January 1, 2016 based on the determination that it was more likely than not that those deferred tax assets would not be realized. We also elected to change our accounting policy to account for forfeitures when they occur on a modified retrospective basis. The change in our accounting policy resulted in a \$94,000 increase to additional paid-in capital and accumulated deficit as of January 1, 2016.

We early adopted FASB ASU 2015-17, *Balance Sheet Classification of Deferred Taxes*, on a retrospective basis as of December 31, 2015. As a result, we reclassified \$787,000 from current deferred

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tax assets to noncurrent deferred tax liabilities as of December 31, 2014 as the deferred tax assets and liabilities were related to the same tax-paying jurisdictions.

	Year Ended December 31,				
	2018	2017(2)	2016(2)	2015(2)	2014(2)
(in thousands, except per share amounts)					
Consolidated Statements of Operations Data:					
Revenue	\$ 250,821	\$ 204,369	\$ 159,344	\$ 139,626	\$ 119,297
Costs and operating expenses:					
Network access	113,572	90,702	69,112	62,988	59,411
Network operations	52,215	47,615	42,307	33,537	25,475
Development and technology	31,372	26,754	22,126	19,147	14,879
Selling and marketing	22,647	20,933	18,729	19,653	16,382
General and administrative	30,302	35,568	29,719	22,356	17,460
Amortization of intangible assets	3,710	3,498	3,448	3,576	3,716
Total costs and operating expenses	253,818	225,070	185,441	161,257	137,323
Loss from operations	(2,997)	(20,701)	(26,097)	(21,631)	(18,026)
Interest and other expense, net	(1,887)	(153)	(459)	(66)	(41)
Loss before income taxes	(4,884)	(20,854)	(26,556)	(21,697)	(18,067)
Income tax (benefit) expense	(5,153)	(2,078)	427	481	700
Net income (loss)	269	(18,776)	(26,983)	(22,178)	(18,767)
Net income attributable to non-controlling interests	1,489	590	348	114	754
Net loss attributable to common stockholders	\$ (1,220)	\$ (19,366)	\$ (27,331)	\$ (22,292)	\$ (19,521)
Net loss per share attributable to common stockholders:					
Basic	\$ (0.03)	\$ (0.49)	\$ (0.72)	\$ (0.60)	\$ (0.55)
Diluted	\$ (0.03)	\$ (0.49)	\$ (0.72)	\$ (0.60)	\$ (0.55)
Other Financial Data:					
Operating cash flows	\$ 93,321	\$ 97,728	\$ 115,205	\$ 98,575	\$ 21,207
Investing cash flows	(133,354)	(74,458)	(107,331)	(101,502)	(39,199)
Financing cash flows	162,825	(16,054)	(3,121)	8,843	(480)
Adjusted EBITDA(1)	91,818	68,916	40,798	29,636	20,300

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	As of December 31,				
	2018	2017	2016	2015	2014
	(in thousands)				
Consolidated Balance Sheets Data:					
Cash and cash equivalents	\$ 149,412	\$ 26,685	\$ 19,485	\$ 14,718	\$ 8,849
Marketable securities					1,614
Working capital	28,802	(63,146)	(31,388)	(31,802)	(14,489)
Total assets	602,900	384,309	380,981	341,012	218,615
Deferred revenue, net of current portion	137,205	149,168	152,719	106,825	27,267
Long-term debt	151,670		15,875	16,750	2,625
Long-term portion of capital leases and notes payable	4,911	6,747	4,612	2,336	581
Total liabilities	472,778	285,279	282,435	228,977	91,185
Total stockholders' equity	130,122	99,030	98,546	112,035	127,430

(1)

We define Adjusted EBITDA as net loss attributable to common stockholders plus depreciation and amortization of property and equipment, stock-based compensation expense, amortization of intangible assets, income tax (benefit) expense, interest and other expense, net, non-controlling interests, and excludes charges or gains that are non-recurring, infrequent, or unusual.

We believe that Adjusted EBITDA is useful to investors and other users of our financial statements in evaluating our operating performance because it provides them with an additional tool to compare business performance across companies and across periods. We believe that:

Adjusted EBITDA provides investors and other users of our financial information consistency and comparability with our past financial performance, facilitates period-to-period comparisons of operations and facilitates comparisons with other companies, many of which use similar non-generally accepted accounting principles in the United States ("GAAP") financial measures to supplement their GAAP results; and

it is useful to exclude (i) non-cash charges, such as depreciation and amortization of property and equipment, amortization of intangible assets and stock-based compensation, from Adjusted EBITDA because the amount of such expenses in any specific period may not directly correlate to the underlying performance of our business operations, and these expenses can vary significantly between periods as a result of full amortization of previously acquired tangible and intangible assets or the timing of new stock-based awards and (ii) settlement expense related to a claim from one of our venue partners and charges related to our contested proxy election for the 2016 annual meeting of stockholders because they represent non-recurring charges and are not indicative of the underlying performance of our business operations.

We use Adjusted EBITDA in conjunction with traditional GAAP measures as part of our overall assessment of our performance, for planning purposes, including the preparation of our annual operating budget and quarterly forecasts, to evaluate the effectiveness of our business strategies and to communicate with our board of directors concerning our financial performance.

We do not place undue reliance on Adjusted EBITDA as our only measure of operating performance. Adjusted EBITDA should not be considered as a substitute for other measures of financial performance reported in accordance with GAAP. There are limitations to using non-GAAP financial measures, including that other companies may calculate these measures differently than we do.

We compensate for the inherent limitations associated with using Adjusted EBITDA through disclosure of these limitations, presentation of our financial statements in accordance with GAAP

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and reconciliation of Adjusted EBITDA to the most directly comparable GAAP measure, net loss attributable to common stockholders.

The following provides a reconciliation of net loss attributable to common stockholders to Adjusted EBITDA:

	Year Ended December 31,				
	2018	2017(2)	2016(2)	2015(2)	2014(2)
	(in thousands)				
Net loss attributable to common stockholders	\$ (1,220)	\$ (19,366)	\$ (27,331)	\$ (22,292)	\$ (19,521)
Depreciation and amortization of property and equipment	78,837	69,097	49,202	38,293	27,446
Stock-based compensation expense	12,268	14,215	12,805	9,398	7,164
Amortization of intangible assets	3,710	3,498	3,448	3,576	3,716
Income tax (benefit) expense	(5,153)	(2,078)	427	481	700
Interest and other expense, net	1,887	153	459	66	41
Non-controlling interests	1,489	590	348	114	754
Contested proxy election expense			1,440		
Settlement expense		2,807			
 Adjusted EBITDA	 \$ 91,818	 \$ 68,916	 \$ 40,798	 \$ 29,636	 \$ 20,300

(2) As noted above, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

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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 together with "Selected Consolidated Financial Data" and our audited consolidated financial statements and accompanying notes included elsewhere in this filing. This discussion contains forward-looking statements, based on current expectations and related to our plans, estimates, beliefs and anticipated future financial performance. These statements involve risks and uncertainties and our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those set forth under "Risk Factors," "Forward-Looking Statements" and elsewhere in this filing.

Overview

We believe we are the leading global provider of neutral-host commercial mobile Wi-Fi Internet solutions and indoor DAS services in the world. Our software applications and solutions enable individuals to access our extensive global Wi-Fi networks that cover over 1.2 million hotspots. We operate 58 DAS networks containing approximately 29,900 nodes. Our offerings provide compelling cost and performance advantages to our customers and partners.

We grew revenue from \$204.4 million in 2017 to \$250.8 million in 2018, an increase of 22.7%. We grew revenue from \$159.3 million in 2016 to \$204.4 million in 2017, an increase of 28.3%. We generated a net loss attributable to common stockholders of \$1.2 million in 2018 compared to \$19.4 million in 2017. Adjusted EBITDA increased from \$68.9 million in 2017 to \$91.8 million in 2018, an increase of 33.2%. For a discussion of Adjusted EBITDA and a reconciliation of net loss attributable to common stockholders to Adjusted EBITDA, see footnote 1 to "Selected Financial Data" in Part II, Item 6.

The proliferation of smartphones, tablets, laptops, wearables, and other Wi-Fi enabled devices in conjunction with the increased consumption of high-bandwidth activities like video, online gaming, streaming, cloud-based applications and mobile apps has created a demand for high-speed, high-bandwidth Internet access in public places both large and small. These data intensive activities are driving a global surge in mobile Internet data traffic that is expected to increase seven-fold between 2017 and 2022, according to Cisco's 2018 Visual Networking Index. We believe these trends present us with opportunities to generate significant growth in revenue and profitability.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") and rules and regulations of the United States Securities and Exchange Commission ("SEC") requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, as well as the disclosure of contingent assets and liabilities, at the date of the financial statements. Such estimates and assumptions also affect the reported amounts of revenues and expenses during the reporting period. Although we believe these estimates are reasonable, actual results could differ from these estimates. On a regular basis, we evaluate our assumptions, judgments and estimates. We also discuss our critical accounting policies and estimates with the Audit Committee of the Board of Directors.

We believe that the assumptions and estimates associated with revenue recognition, goodwill, measuring recoverability of long-lived assets, stock-based compensation and income taxes have the greatest potential impact on our consolidated financial statements. Therefore, we believe the accounting policies discussed below are paramount to understanding our historical and future performance, as these policies relate to the more significant areas involving our management's judgments, assumptions and estimates.

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Revenue Recognition

We generate revenue from several sources including: (i) DAS customers that are telecom operators under long-term contracts for access to our DAS at our managed and operated locations, (ii) military and retail customers under subscription plans for month-to-month network access that automatically renew, and military and retail single-use access from sales of hourly, daily or other single-use access plans, (iii) arrangements with property owners for multifamily properties that provide for network installation and monthly Wi-Fi services and support to the residents and employees, (iv) arrangements with wholesale Wi-Fi customers that provide software licensing, network access, and/or professional services fees, and (v) display advertisements and sponsorships on our walled garden sign-in pages. Software licensed by our wholesale platform services customers can only be used during the term of the service arrangements and has no utility to them upon termination of the service arrangement.

Post-ASC 606 Adoption

Revenues are recognized when a contract with a customer exists and control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services and the identified performance obligation has been satisfied. Contracts entered into at or near the same time with the same customer are combined and accounted for as a single contract if the contracts have a single commercial objective, the amount of consideration is dependent on the price or performance of the other contract, or the services promised in the contracts are a single performance obligation. Contract amendments are routine in the performance of our DAS, wholesale Wi-Fi, and advertising contracts. Contracts are often amended to account for changes in contract specifications or requirements to expand network access services. In most instances, our DAS and wholesale Wi-Fi contract amendments are for additional goods or services that are distinct, and the contract price increases by an amount that reflects the standalone selling price of the additional goods or services; therefore, such contract amendments are accounted for as separate contracts. Contract amendments for our advertising contracts are also generally for additional goods or services that are distinct; however, the contract price does not increase by an amount that reflects the standalone selling price of the additional goods or services. Advertising contract amendments are therefore generally accounted for as contract modifications under the prospective method. Contract amendments to transaction prices with no change in remaining services are accounted for as contract modifications under the cumulative catch-up method.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account in ASC 606. A contract's transaction price is allocated to each distinct performance obligation and is recognized as revenue when, or as, the performance obligation is satisfied, which typically occurs when the services are rendered. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. Our contracts with customers may include multiple performance obligations. For such arrangements, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers. Judgment may be used to determine the standalone selling prices for items that are not sold separately, including services provided at no additional charge. Most of our performance obligations are satisfied over time as services are provided. We generally recognize revenue on a gross basis as we are primarily responsible for fulfilling the promises to provide the specified goods or services, we are responsible for paying all costs related to the goods or services before they have been transferred to the customer, and we have discretion in establishing prices for the specified goods or services. Revenue is presented net of any sales and value added taxes.

Payment terms vary on a contract-by-contract basis, although terms generally include a requirement of payment within 30 to 60 days for non-recurring payments, the first day of the monthly or quarterly billing cycle for recurring payments for DAS and wholesale Wi-Fi contracts, and the first day of the

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month prior to the month that services are provided for multifamily contracts. We apply a practical expedient for purposes of determining whether a significant financing component may exist for our contracts if, at contract inception, we expect that the period between when we transfer the promised good or service to the customer and when the customer pays for that good or service will be one year or less. In instances where the customer pays for a good or service one year or more in advance of the period when we transfer the promised good or service to the customer, we have determined our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is not to receive financing from our customers or to provide customers with financing but rather to maximize our profitability on the customer contract. Specifically, inclusion of non-refundable upfront fees in our long-term customer contracts increases the likelihood that the customer will be committed through the end of the contractual term and ensures recoverability of the capital outlay that we incur in expectation of the customer fulfilling its contractual obligations. We may also provide service credits to our customers if we fail to meet contractual monthly system uptime requirements and we account for the variable consideration related to these service credits using the most likely amount method.

For contracts that include variable consideration, we estimate the amount of consideration at contract inception under the expected value method or the most likely amount method and include the amount of variable consideration that is not considered to be constrained. Significant judgment is used in constraining estimates of variable consideration. We update our estimates at the end of each reporting period as additional information becomes available.

Timing of revenue recognition may differ from the timing of invoicing to customers. We record unbilled receivables (contract assets) when revenue is recognized prior to invoicing, deferred revenue (contract liabilities) when revenue is recognized after invoicing, and receivables when we have an unconditional right to consideration to invoice and receive payment in the future. We present our DAS, multifamily, and wholesale Wi-Fi contracts in our consolidated balance sheet as either a contract asset or a contract liability with any unconditional rights to consideration presented separately as a receivable. Our other customer contracts generally do not have any significant contract asset or contract liability balances. Generally, a significant portion of the billing for our DAS contracts occurs prior to revenue recognition, resulting in our DAS contracts being presented as contract liabilities. In contrast, our wholesale Wi-Fi contracts that contain recurring fees with annual escalations are generally presented as contract assets as revenue is recognized prior to invoicing. Our multifamily contracts can be presented as either contract liabilities or contract assets primarily as a result of timing of invoicing for the network installations.

We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs meet the requirements to be capitalized. Total capitalized costs to obtain a contract were immaterial during the year ended December 31, 2018 and are included in prepaid expenses and other current assets and non-current other assets on our consolidated balance sheets. We apply a practical expedient to expense costs as incurred for costs to obtain a contract with a customer when the amortization period would have been one year or less, the most significant of which relates to sales commissions related to obtaining our advertising customer contracts. Contract costs are evaluated for impairment in accordance with ASC 310, *Receivables*.

DAS

We enter into long-term contracts with telecom operators at our managed and operated locations. The initial term of our contracts with telecom operators generally range from five to twenty years and the agreements generally contain renewal options. Some of our contracts provide termination for convenience clauses that may or may not include substantive termination penalties. We apply judgment in determining the contract term, the period during which we have present and enforceable rights and

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obligations. Our DAS customer contracts generally contain a single performance obligation provide non-exclusive access to our DAS or small cell networks to provide telecom operators' customers with access to the licensed wireless spectrum, together with providing telecom operators with construction, installation, optimization/engineering, maintenance services and agreed-upon storage space for the telecom operators' transmission equipment, each related to providing such licensed wireless spectrum to the telecom operators. The performance obligation is considered a series of distinct services as the performance obligation is satisfied over time and the same time-based input method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer. Our contract fee structure generally includes a non-refundable upfront fee and we evaluated whether customer options to renew services give rise to a material right that should be accounted for as a separate performance obligation because of those non-refundable upfront fees. We believe that a material right generally does not exist for our DAS customer contracts that contain renewal options because the telecom operators' decision to renew is highly dependent upon our ability to maintain our exclusivity as the DAS service provider at the venue location and our limited operating history with venue and customer renewals. The telecom operators will make the decision to incur the capital improvement costs at the venue location irrespective of our remaining exclusivity period with the venue as the telecom operators expect that the assets will continue to be serviced regardless of whether we will remain such exclusive DAS service provider. Our contracts also provide our DAS customers with the option to purchase additional future services such as upgrades or enhancements. This option is not considered to provide the customer with a material right that should be accounted for as a separate performance obligation since the cost of the additional future services depends entirely on the market rate of such services at the time such services are requested and we are not automatically obligated to stand ready to deliver these additional goods or services as the customer may reject our proposal. Periodically, we install and sell DAS networks to customers where we do not have service contracts or remaining obligations beyond the installation of those networks and we recognize build-out fees for such projects as revenue when the installation work is completed, and the network has been accepted by the customer.

Our contract fee structure may include varying components of an upfront build-out fee and recurring access, maintenance, and other fees. The upfront build-out fee is generally structured as a firm-fixed price or cost-plus arrangement and becomes payable as certain contract and/or construction milestones are achieved. Our DAS and small cell networks are neutral-host networks that can accommodate multiple telecom operators. Some of our DAS customer contracts provide for credits that may be issued to existing telecom operators for additional telecom operators subsequently joining the DAS network. The credits are generally based upon a fixed dollar amount per additional telecom operator, a fixed percentage amount of the original build-out fee paid by the telecom operator per additional telecom operator, or a proportionate share based upon the split among the relevant number of telecom operators for the actual costs incurred by all telecom operators to construct the DAS network. In most cases, there is significant uncertainty on whether additional telecom operator contracts will be executed at inception of the contract with the existing telecom operator. We believe that the upfront build-out fee is fixed consideration once the build-out is complete and any subsequent credits that may be issued would be accounted for in a manner similar to a contract modification under the prospective method because (i) the execution of customer contracts with additional telecom carriers is at our sole election and (ii) we would not execute agreements with additional telecom carriers if it would not increase our revenues and gross profits at the venue level. Further, the credits issued to the existing telecom operator changes the transaction price on a go-forward basis, which corresponds with the decline in service levels for the existing telecom operator once the neutral-host DAS network can be accessed by the additional telecom operator. The recurring access, maintenance, and other fees generally escalate on an annual basis. The recurring fees are variable consideration until the contract term and annual escalation dates are fixed. We estimate the variable consideration for our recurring fees using the most likely amount method based on the expected commencement date for the services.

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We evaluate our estimates of variable consideration each period and record a cumulative catch-up adjustment in the period in which changes occur for the amount allocated to satisfied performance obligations.

We generally recognize revenue related to our single performance obligation for our DAS customer contract monthly over the contract term once the customer has the ability to access the DAS network and we commence maintenance on the DAS network.

Military and Retail

Military and retail customers must review and agree to abide by our standard "Customer Agreement (With Acceptable Use Policy) and End User License Agreement" before they are able to sign-up for our subscription or single-use Wi-Fi network access services. Our military and retail customer contracts generally contain a single performance obligation provide non-exclusive access to Wi-Fi services, together with performance of standard maintenance, customer support, and the Wi-Finder app to facilitate seamless connection to the Company's Wi-Fi network. The performance obligation is considered a series of distinct services as the performance obligation is satisfied over time and the same time-based input method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer. Our contracts also provide our military and retail subscription customers with the option to renew the agreement when the subscription term is over. We do not consider this option to provide the customer with a material right that should be accounted for as a separate performance obligation because the customer would not receive a discount if it decided to renew and the option to renew is cancellable within 5 days' notice prior to the end of the then current term by either party.

The contract transaction price is determined based on the subscription or single-use plan selected by the customer. Our military and retail service plans are for fixed price services as described on our website. From time to time, we offer promotional discounts that result in an immediate reduction in the price paid by the customer. Subscription fees from military and retail customers are paid monthly in advance. We provide refunds for our military and retail services on a case-by-case basis. Refunds and credit card chargeback amounts are not significant and are recorded as contra-revenue in the period the refunds are made, or chargebacks are received.

Subscription fee revenue is recognized ratably over the subscription period. Revenue generated from military and retail single-use access is recognized when access is provided, and the performance obligation is satisfied.

Multifamily

We enter into long-term contracts with property owners. The initial term of our contracts with property owners generally range from three to five years and the contracts may contain renewal options. Some of our contracts provide termination for convenience clauses that may or may not include substantive termination penalties. We apply judgment in determining the contract term, which is the period during which we have present and enforceable rights and obligations. Our customer contracts generally contain two performance obligations: (i) install the network required to provide Wi-Fi services; and (ii) provide Wi-Fi services and technical support to the residents and employees. Our contracts may also provide our property owners with the option to renew the agreement. We do not consider this option to provide the property owner with a material right that should be accounted for as a separate performance obligation because the property owner would not receive a discount if it decided to renew and the option to renew is generally cancellable by either party subject to the notice of non-renewal requirements specified in the contract. Our contracts may also provide our customers with the option to purchase additional future services. We do not consider this option to provide the customer with a material right that should be accounted for as a separate performance obligation since

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the cost of the additional future services are generally at market rates for such services and we are not automatically obligated to stand ready to deliver these additional goods or services because the customer may reject our proposal.

Our contract fee structure includes a network installation fee and recurring Wi-Fi service and support fees. The network installation fee is generally structured as a firm-fixed price arrangement and becomes payable as certain contract and/or installation milestones are achieved. We generally estimate variable consideration for unpriced change orders using the most likely amount method based on the expected price for those services. If network installations are not completed by specified dates, we may be subject to network installation penalties. We estimate the variable consideration for our network installation fees using the most likely amount method based on the amount of network installation penalties we expect to incur. Title to the network generally transfers to the property owner once installation is completed and the network has been accepted. We generally recognize revenue related to our network installation performance obligation using a cost-to-cost method over the network installation period. We may provide latent defect warranties for materials and installation labor services related to our network installation services. Our warranty obligations are generally not accounted for as separate performance obligations as warranties cannot be separately purchased and warranties do not provide a service in addition to the assurance that the network will function as expected.

The recurring fees commence once the network is launched with recurring fees generally based upon a fixed or variable occupancy rate. The recurring Wi-Fi service fees may be adjusted prospectively for changes in circuit and/or video content costs, and Wi-Fi support fees may escalate on an annual basis. We estimate the variable consideration for our recurring fees using the expected value method with the exception of the variable consideration related to actual occupancy rates, which we record when we have the contractual right to bill. We evaluate our estimates of variable consideration each period and record a cumulative catch-up adjustment in the period in which changes occur for the amount allocated to satisfied performance obligations. We recognize revenue related to the recurring fees on a monthly basis over the contract term as the Wi-Fi services and support is rendered, and the performance obligation is satisfied.

Wholesale Wi-Fi

We enter into long-term contracts with enterprise customers such as telecom operators, cable companies, technology companies, and enterprise software/services companies, that pay us usage-based Wi-Fi network access and software licensing fees to allow their customers' access to our footprint worldwide. We also enter into long-term contracts with financial institutions and other enterprise customers who provide access to our Wi-Fi footprint as a value-added service for their customers. The initial term of our contracts with wholesale Wi-Fi customers generally range from one to three years and the agreements generally contain renewal options. Some of our contracts provide termination for convenience clauses that may or may not include substantive termination penalties. We apply judgment in determining the contract term, the period during which we have present and enforceable rights and obligations. Our wholesale Wi-Fi customer contracts generally contain a single performance obligation provide non-exclusive rights to access our Wi-Fi networks to provide wholesale Wi-Fi customers' end customers with access to the high-speed broadband network that may be bundled together with integration services, support services, and/or performance of standard maintenance. The performance obligation is considered a series of distinct services as the performance obligation is satisfied over time and the same time-based input method or usage-based output method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer. Our contracts may also provide our enterprise customers with the option to renew the agreement. This option is not considered to provide the customer with a material right that should be accounted for as a separate performance obligation because the customer would not receive a discount if it decided to renew and the option to renew is

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generally cancellable by either party subject to the notice of non-renewal requirements specified in the contract. Our contracts may also provide our wholesale Wi-Fi customers with the option to purchase additional future services. We do not consider this option to provide the customer with a material right that should be accounted for as a separate performance obligation since the cost of the additional future services are generally at market rates for such services and we are not automatically obligated to stand ready to deliver these additional goods or services because the customer may reject our proposal. Periodically, we install and sell Wi-Fi networks to customers where we do not have service contracts or remaining obligations beyond the installation of those networks and we recognize build-out fees for such projects as revenue when the installation work is completed, and the network has been accepted by the customer.

Our contract fee structure may include varying components of a minimum fee and usage-based fees. Minimum fees represent fixed price consideration while usage-based fees represent variable consideration. With respect to variable consideration, our commitment to our wholesale Wi-Fi customers consists of providing continuous access to the network. It is therefore a single performance obligation to stand ready to perform and we allocate the variable fees charged for usage when we have the contractual right to bill. The variable component of revenue is recognized based on the actual usage during the period.

Wholesale Wi-Fi revenue is recognized as it is earned over the relevant contract term with variable consideration recognized when we have the contractual right to bill.

Advertising

We generally enter into short-term cancellable insertion orders with our advertising customers for advertising campaigns that are served at our managed and operated locations and other locations where we solely provide authorized access to a partner's Wi-Fi network through sponsored and promotional programs. Our sponsorship advertising arrangements are generally priced under a cost per engagement structure, which is a set price per click or engagement, or a cost per install structure for third party application downloads. Our display advertising arrangements are priced based on cost per thousand impressions. Insertion orders may also include bonus items. Our advertising customer contracts may contain multiple performance obligations with each distinct service. These distinct services may include an advertisement video or banner impressions in the contract bundled with the requirement to provide network, space on the website, and integration of customer advertisement onto the website, and each is generally considered to be its own performance obligation. The performance obligations are considered a series of distinct services as the performance obligations are satisfied over time and the same action-based output method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer.

The contract transaction price is comprised of variable consideration based on the stated rates applied against the number of units delivered inclusive of the bonus units subject to the maximums provided for in the insertion order. It is customary for us to provide additional units over and above the amounts contractually required; however, there are a number of factors that can also negatively impact our ability to deliver the units required by the customer such as service outages at the venue resulting from power or circuit failures and customer cancellation of the remaining undelivered units under the insertion order due to campaign performance or budgetary constraints. Typically, the advertising campaign periods are short in duration. We therefore use the contractual rates per the insertion orders and actual units delivered to determine the transaction price each period end. The transaction price is allocated to each performance obligation based on the standalone selling price of each performance obligation.

Advertising revenue is recognized ratably over the service period based on actual units delivered subject to the maximums provided for in the insertion order.

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Pre-ASC 606 Adoption

We recognize revenue when an arrangement exists, services have been rendered, fees are fixed or determinable, no significant obligations remain related to the earned fees and collection of the related receivable is reasonably assured. Revenue is presented net of any sales and value added taxes.

Revenue generated from access to our DAS networks consists of build-out fees and recurring access fees under certain long-term contracts with telecom operators. Build-out fees paid upfront are generally deferred and recognized ratably over the term of the estimated customer relationship period, once the build-out is complete. Periodically, we install and sell Wi-Fi and DAS networks to customers where we do not have service contracts or remaining obligations beyond the installation of those networks and we recognize build-out fees for such projects as revenue when the installation work is completed, and the network has been accepted by the customer. Minimum monthly access fees for usage of the DAS networks are non-cancellable and generally escalate on an annual basis. These minimum monthly access fees are recognized ratably over the term of the telecom operator agreement. The initial term of our contracts with telecom operators generally range from five to twenty years and the agreements generally contain renewal clauses. Revenue from DAS network access fees in excess of the monthly minimums is recognized when earned.

Subscription fees from military and retail customers are paid monthly in advance and revenue is deferred for the portions of monthly recurring subscription fees collected in advance. We provide refunds for our military and retail services on a case-by-case basis. These amounts are not significant and are recorded as contra-revenue in the period the refunds are made. Subscription fee revenue is recognized ratably over the subscription period. Revenue generated from military and retail single-use access is recognized when access is provided.

Services provided to wholesale Wi-Fi partners generally contain several elements including: (i) a term license to use our software to access our Wi-Fi network, (ii) access fees for Wi-Fi network usage, and/or (iii) professional services for software integration and customization and to maintain the Wi-Fi service. The term license, monthly minimum network access fees and professional services are billed monthly based upon predetermined fixed rates. Once the term license for integration and customization are delivered, the fees from the arrangement are recognized ratably over the remaining term of the service arrangement. The initial term of the license agreements is generally between one to three years and the agreements generally contain renewal clauses. Revenue for Wi-Fi network access fees in excess of the monthly minimum amounts is recognized when earned. All elements within existing service arrangements are generally delivered and earned concurrently throughout the term of the respective service arrangement.

In instances where the minimum monthly Wi-Fi and DAS network access fees escalate over the term of the wholesale service arrangement, an unbilled receivable is recognized when performance is within our control and when we have reasonable assurance that the unbilled receivable balance will be collected.

We adopted the provisions of ASU 2009-13, *Revenue Recognition (Topic 605) Multiple-Deliverable Revenue Arrangements*, on a prospective basis on January 1, 2011. For multiple-deliverable arrangements entered into prior to January 1, 2011 that are accounted for under ASC 605-25, *Revenue Recognition Multiple-Deliverable Revenue Arrangements*, we defer recognition of revenue for the full arrangement and recognize all revenue ratably over the term of the estimated customer relationship period for DAS arrangements and the wholesale service period for Wi-Fi platform service arrangements, as we do not have evidence of fair value for the undelivered elements in the arrangement. For multiple-deliverable arrangements entered into or materially modified after January 1, 2011 that are accounted for under ASC 605-25, we evaluate whether separate units of accounting exist and then allocate the arrangement consideration to all units of accounting based on the relative selling price method using estimated selling prices if vendor specific objective evidence and third-party evidence is not available. We

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recognize the revenue associated with the separate units of accounting upon completion of such services or ratably over the term of the estimated customer relationship period for DAS arrangements and the wholesale service period for Wi-Fi platform service arrangements.

Advertising revenue is generated from advertisements on our managed and operated or partner networks. In determining whether an arrangement exists, we ensure that a binding arrangement is in place, such as a standard insertion order or a fully executed customer-specific agreement. Obligations pursuant to our advertising revenue arrangements typically include a minimum number of units or the satisfaction of certain performance criteria. Advertising and other revenue is recognized when the services are performed.

Goodwill

Goodwill represents the excess of purchase price over fair value of net assets acquired. Goodwill is not amortized but instead is tested annually for impairment, or more frequently when events or changes in circumstances indicate that fair value of the reporting unit has been reduced to less than its carrying value. We perform our impairment test annually as of December 31st. Entities have the option to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the goodwill impairment test described in ASC 350, *Intangibles Goodwill and Other*. If, after assessing qualitative factors, an entity determines it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then performing the impairment test is unnecessary. The impairment loss, if any, is measured by comparing the implied fair value of the reporting unit goodwill with the carrying amount of goodwill.

At December 31, 2018 and 2017, we tested our goodwill for impairment using a market-based approach and no impairment was identified as the fair value of our sole reporting unit was substantially in excess of its carrying amount. To date, we have not recorded any goodwill impairment charges.

Measuring Recoverability of Long-Lived Assets

Our long-lived assets are depreciated and amortized over the estimated useful lives of the related asset type using the straight-line method. The estimated useful lives for property and equipment are as follows:

Software	2 to 5 years
Computer equipment	3 to 5 years
Furniture, fixtures and office equipment	3 to 5 years
Leasehold improvements	The shorter of the estimated useful life or the remaining term of the agreements, generally ranging from 2 to 18 years

We perform an impairment review of long-lived assets held and used whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important that could trigger an impairment review include, but are not limited to, significant under-performance relative to projected future operating results, significant changes in the manner of our use of the acquired assets or our overall business and/or product strategies and significant industry or economic trends. When we determine that the carrying value of a long-lived asset may not be recoverable based upon the existence of one or more of these indicators, we determine the recoverability by comparing the carrying amount of the asset to net future undiscounted cash flows that the asset is expected to generate or other indices of fair value. We would then recognize an impairment charge equal to the amount by which the carrying amount exceeds the fair market value of the asset.

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Stock-based Compensation

Stock-based compensation consists of stock options and restricted stock units ("RSUs"), which are granted to employees and non-employees. We recognize compensation expense equal to the grant date fair value on a straight-line basis, net of forfeitures, over the employee requisite service period. We recognize stock-based compensation expense for performance-based RSUs when we believe that it is probable that the performance objectives will be met. The grant date fair value of our stock option awards is determined using the Black-Scholes option pricing model.

Income Taxes

Income taxes are provided based on the liability method, which results in income tax assets and liabilities arising from temporary differences. Temporary differences are differences between the tax basis of assets and liabilities and their reported amounts in the financial statements that will result in taxable or deductible amounts in future years. The liability method requires the effect of tax rate changes on current and accumulated deferred income taxes to be reflected in the period in which the rate change was enacted. The liability method also requires that deferred tax assets be reduced by a valuation allowance unless it is more likely than not that the assets will be realized.

We may recognize the tax benefit from uncertain tax positions only if it is at least more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position should be measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement with the taxing authorities.

We establish valuation allowances when necessary to reduce deferred tax assets to the amounts expected to be realized. We evaluate the need for, and the adequacy of, valuation allowances based on the expected realization of our deferred tax assets. The factors used to assess the likelihood of realization include historical earnings, our latest forecast of taxable income and available tax planning strategies that could be implemented to realize the net deferred tax assets.

Our effective tax rates are primarily affected by changes in our valuation allowances, the amount of our taxable income or losses in the various taxing jurisdictions in which we operate, the amount of federal and state net operating losses and tax credits, the extent to which we can utilize these net operating loss carryforwards and tax credits and certain benefits related to stock option activity.

Recent Accounting Pronouncements

Information regarding recent accounting pronouncements is contained in Note 2 "Significant Accounting Policies" to the accompanying consolidated financial statements included in Part II, Item 8, which is incorporated herein by this reference.

Key Business Metrics

In addition to monitoring traditional financial measures, we also monitor our operating performance using key performance indicators. Our key performance indicators follow:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
DAS nodes	29.9	23.5	19.2
Subscribers military	138	130	107
Subscribers retail	122	188	195
Connects	277,744	223,960	142,802

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DAS nodes. This metric represents the number of active DAS nodes as of the end of the period. A DAS node is a single communications endpoint, typically an antenna, which transmits or receives radio frequency signals wirelessly. This measure is an indicator of the reach of our DAS network. We are experiencing strong customer demand from telecom operators to gain access to our DAS networks; accordingly, we expect to continue to invest in securing, building out and upgrading our DAS networks to meet this demand.

Subscribers military and Subscribers retail. These metrics represent the number of paying customers who are on a month-to-month subscription plan at a given period end. Military subscribers have increased as we deploy our service on new military bases. We also expect to see modest increases in military subscribers as we increase signups for new customers on existing military bases through targeted marketing and by continuing to build the Boingo brand in the military vertical. Retail subscribers have continued to decline as we have expanded our product offerings and enhanced our focus on our wholesale and advertising service offerings.

Connects. This metric shows how often individuals connect to our global Wi-Fi network in a given period. The connects include wholesale and retail customers in both customer pay locations and customer free locations where we are a paid service provider or receive sponsorship or promotion fees. We count each connect as a single connect regardless of how many times that individual accesses the network at a given venue during their 24-hour period. This measure is an indicator of paid activity throughout our network.

Key Components of our Results of Operations

Revenue

Our revenue consists of DAS revenue, military/multifamily revenue, retail revenue, wholesale Wi-Fi revenue, and advertising and other revenue.

DAS. We generate revenue from telecom operator partners that pay us network build-out fees, inclusive of network upgrades, and access fees for our DAS and small cell networks.

Military/multifamily and retail. We generate revenue from sales to military and retail individuals of month-to-month network access subscriptions that automatically renew and hourly, daily or other single-use access, primarily through charge card transactions. We also generate multifamily revenue from property owners who pay us a recurring monthly fee for Wi-Fi services including building and maintaining the network that supports these services and providing support for residents and employees of the properties.

Wholesale Wi-Fi. We generate revenue from wholesale Wi-Fi partners that license our software and pay usage-based monthly network access fees to allow their customers to access our global Wi-Fi network. Usage-based network access fees may be measured in minutes, connects, megabytes or gigabytes, and in most cases are subject to minimum volume commitments. Other wholesale Wi-Fi partners pay us monthly fees to provide a Wi-Fi infrastructure that we install, manage and operate at their venues for their customers under a service provider arrangement.

Advertising and other. We generate revenue from advertisers that seek to reach visitors to our landing pages at our managed and operated network locations with online advertising, promotional and sponsored programs and at locations where we solely provide authorized access to a partner's Wi-Fi network through sponsored access and promotional programs. In addition, we receive revenue from partners in certain venues where we manage and operate the Wi-Fi network.

For the years ended December 31, 2018, 2017 and 2016, entities affiliated with Sprint Corporation accounted for 14%, 11% and 11%, respectively, of total revenue. For the years ended December 31,

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2018 and 2017, entities affiliated with T-Mobile USA, Inc. accounted for 12% and 11%, respectively, of total revenue. For the years ended December 31, 2018 and 2017, entities affiliated with Verizon Communications Inc. accounted for 11% and 11%, respectively, of total revenue. For the years ended December 31, 2017 and 2016, entities affiliated with AT&T Inc. accounted for 11% and 12%, respectively, of total revenue. The loss of these groups and the customers could have a material adverse impact on our consolidated statements of operations.

Costs and Operating Expenses

We classify our costs and operating expenses as network access, network operations, development and technology, selling and marketing, general and administrative, and amortization of intangible assets. Network access costs consist primarily of payments to venues and network partners in our network. Other costs and operating expenses primarily consist of personnel costs, costs for contracted labor and development, marketing, legal, accounting and consulting services, and other professional service fees. Personnel costs include salaries, bonuses, stock-based compensation and employee benefits. Facilities costs are generally allocated based on headcount. Depreciation and amortization expenses associated with specifically identifiable property and equipment are allocated to the appropriate expense categories.

Network access. Network access costs consist of revenue share payments to venue owners where our managed and operated hotspots are located, usage-based fees to our roaming network partners for access to their networks, depreciation of equipment related to network build-out projects in our managed and operated locations, sale of equipment, and bandwidth and other Internet connectivity expenses in our managed and operated locations.

Network operations. Network operations expenses consist of costs for our customer service department and for our operations staff who design, build, monitor and maintain our networks. Also included are expenses for our customer service provider that handles customer care inquiries and expenses for network operations contractors, equipment depreciation, and software and hardware maintenance fees.

Development and technology. Development and technology expenses consist of costs for our product development and engineering departments, developers and our information systems services staff, depreciation of our equipment and internal-use software, cloud computing, and hardware and software maintenance fees.

Selling and marketing. Selling and marketing expenses consist of costs for our business development and marketing employees and executives, travel and entertainment, and marketing programs.

General and administrative. General and administrative expenses consist of costs for our executive, finance and accounting, legal and human resources personnel, as well as legal, accounting, tax and other professional service fees. Also included are other corporate expenses such as charge card processing fees and bad debt expense.

Amortization of intangible assets. Amortization of intangible assets consists primarily of acquired backlog, customer and partnership relationships, technology, patents, trademarks, and non-compete agreements.

Interest and Other Expense, Net

Interest and other expense, net, primarily consists of interest expense, net of amounts capitalized, offset by interest income.

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Income Tax (Benefit) Expense

We established a full valuation allowance as a result of our assessment that it was more likely than not that certain federal and state deferred tax assets would not be realized, and we have continued to maintain the full valuation allowance as of December 31, 2018 and 2017.

Non-controlling Interests

Non-controlling interests are comprised of minority holdings by third parties in our subsidiaries Chicago Concourse Development Group, LLC ("CCDG") and Boingo Holding Participacoes Ltda. ("BHPL").

We are generally required to pay a portion of allocated net profits less capital expenditures of the preceding year to the non-controlling interest holders of CCDG. The limited liability company agreement for CCDG does not have a term. CCDG can be dissolved upon the unanimous agreement of the members, upon the sale of CCDG, upon declaration of bankruptcy, or upon the termination of the license agreement between CCDG and the City of Chicago.

We attributed profits and losses to the non-controlling interest in BHPL under the terms of the limited liability company agreement in proportion to their holdings. The limited liability company agreement with BHPL does not have a term. We, by resolution of the members, may distribute profits against retained earnings or profit reserves existing on the most recent annual balance sheet or may draw up financial statements and distribute profits in shorter periods. BHPL can be dissolved by resolution of the members and as otherwise provided for by law.

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The following tables set forth our results of operations for the specified periods.

	Year Ended December 31,		
	2018	2017(1)	2016(1)
	(in thousands)		
Consolidated Statements of Operations Data:			
Revenue	\$ 250,821	\$ 204,369	\$ 159,344
Costs and operating expenses:			
Network access	113,572	90,702	69,112
Network operations	52,215	47,615	42,307
Development and technology	31,372	26,754	22,126
Selling and marketing	22,647	20,933	18,729
General and administrative	30,302	35,568	29,719
Amortization of intangible assets	3,710	3,498	3,448
Total costs and operating expenses	253,818	225,070	185,441
Loss from operations	(2,997)	(20,701)	(26,097)
Interest and other expense, net	(1,887)	(153)	(459)
Loss before income taxes	(4,884)	(20,854)	(26,556)
Income tax (benefit) expense	(5,153)	(2,078)	427
Net income (loss)	269	(18,776)	(26,983)
Net income attributable to non-controlling interests	1,489	590	348
Net loss attributable to common stockholders	\$ (1,220)	\$ (19,366)	\$ (27,331)
Depreciation and amortization expense included in the above line items:			
Network access	\$ 49,766	\$ 42,435	\$ 27,013
Network operations	17,590	16,382	13,966
Development and technology	10,443	9,247	7,207
General and administrative	1,038	1,033	1,016
Total	\$ 78,837	\$ 69,097	\$ 49,202
Stock-based compensation expense included in the above line items:			
Network operations	\$ 2,070	\$ 2,174	\$ 2,144
Development and technology	1,242	1,068	1,070
Selling and marketing	1,868	2,060	1,842
General and administrative	7,088	8,913	7,749
Total	\$ 12,268	\$ 14,215	\$ 12,805

(1)

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As noted in Item 6, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

Depreciation and amortization expense

Depreciation expense increased \$9.7 million, or 14.1%, in 2018, as compared to 2017, and depreciation expense increased \$19.9 million, or 40.4%, in 2017, as compared to 2016, primarily due to increased depreciation and amortization expense from our increased fixed assets for our DAS build-out projects, Wi-Fi networks, and software development in those periods.

Table of Contents***Stock-based compensation expense***

Stock-based compensation expense decreased \$1.9 million, or 13.7%, in 2018, as compared to 2017, and stock-based compensation expense increased \$1.4 million, or 11.0%, in 2017, as compared to 2016, and the changes are primarily due to stock-based compensation expense related to our performance-based RSUs.

We issue RSUs that vest over a specified service period. We also issue performance-based RSUs to executive personnel. We recognize stock-based compensation expense for performance-based RSUs when we believe that it is probable that the performance objectives will be met and based on the expected achievement levels. In 2018, 2017, and 2016, we capitalized \$0.8 million, \$0.7 million and \$0.7 million, respectively, of stock-based compensation expense.

At December 31, 2018, the total remaining stock-based compensation expense for unvested RSU awards is approximately \$9.3 million which is expected to be recognized over a weighted average period of 2.6 years.

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

	Year Ended December 31,		
	2018	2017(2)	2016(2)
	(as a percentage of revenue)		
Consolidated Statements of Operations Data:			
Revenue	100.0%	100.0%	100.0%
Costs and operating expenses:			
Network access	45.3	44.4	43.4
Network operations	20.8	23.3	26.6
Development and technology	12.5	13.1	13.9
Selling and marketing	9.0	10.2	11.8
General and administrative	12.1	17.4	18.7
Amortization of intangible assets	1.5	1.7	2.2
Total costs and operating expenses	101.2	110.1	116.4
Loss from operations	(1.2)	(10.1)	(16.4)
Interest and other expense, net	(0.8)	(0.1)	(0.3)
Loss before income taxes	(1.9)	(10.2)	(16.7)
Income tax (benefit) expense	(2.1)	(1.0)	0.3
Net income (loss)	0.1	(9.2)	(16.9)
Net income attributable to non-controlling interests	0.6	0.3	0.2
Net loss attributable to common stockholders	(0.5)%	(9.5)%	(17.2)%

(2)

As noted in Item 6, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

Table of Contents**Years ended December 31, 2018 and 2017****Revenue**

	Year Ended December 31,			
	2018	2017(3)	Change	% Change
(in thousands, except percentages)				
Revenue:				
DAS	\$ 95,216	\$ 80,552	\$ 14,664	18.2
Military/multifamily	77,721	55,129	22,592	41.0
Wholesale Wi-Fi	47,481	31,529	15,952	50.6
Retail	17,630	24,926	(7,296)	(29.3)
Advertising and other	12,773	12,233	540	4.4
Total revenue	\$ 250,821	\$ 204,369	\$ 46,452	22.7

Key business metrics:

DAS nodes	29.9	23.5	6.4	27.2
Subscribers military	138	130	8	6.2
Subscribers retail	122	188	(66)	(35.1)
Connects	277,744	223,960	53,784	24.0

(3)

As noted in Item 6, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

DAS. DAS revenue increased \$14.7 million, or 18.2%, in 2018, as compared to 2017, due to a \$12.5 million increase from new build-out projects in our managed and operated locations, which is inclusive of a \$6.4 million increase resulting from the adoption of ASC 606 as of January 1, 2018, and a \$2.2 million increase in access fees, net of certain credits granted, from our telecom operators.

Military/multifamily. Military/multifamily revenue increased \$22.6 million, or 41.0% in 2018, as compared to 2017, primarily due to a \$11.2 million increase in multifamily revenues resulting from our Elauwit acquisition in August 2018, and a \$11.4 million increase in military subscriber revenue, which was driven primarily by the increase in military subscribers and a 11.1% increase in the average monthly revenue per military subscriber in 2018 compared to 2017.

Wholesale Wi-Fi. Wholesale Wi-Fi revenue increased \$16.0 million, or 50.6% in 2018, as compared to 2017, due to a \$9.9 million increase in partner usage-based fees and a \$6.1 million increase in fees primarily earned from our venue partners who pay us to provide a Wi-Fi infrastructure that we install, manage and operate at their venues.

Retail. Retail revenue decreased \$7.3 million, or 29.3%, in 2018, as compared to 2017, due to a \$4.2 million decrease in retail subscriber revenue, which was driven primarily by the decrease in retail subscribers, and a \$3.1 million decrease in retail single-use revenue.

Advertising and other. Advertising and other revenue increased \$0.5 million, or 4.4% in 2018, as compared to 2017, primarily due to a \$0.4 million increase in advertising sales at our managed and operated locations resulting from an increase in the number of premium ad units sold.

Table of Contents**Costs and Operating Expenses**

	Year Ended December 31,			
	2018	2017	Change	% Change
(in thousands, except percentages)				
Costs and operating expenses:				
Network access	\$ 113,572	\$ 90,702	\$ 22,870	25.2
Network operations	52,215	47,615	4,600	9.7
Development and technology	31,372	26,754	4,618	17.3
Selling and marketing	22,647	20,933	1,714	8.2
General and administrative	30,302	35,568	(5,266)	(14.8)
Amortization of intangible assets	3,710	3,498	212	6.1
Total costs and operating expenses	\$ 253,818	\$ 225,070	\$ 28,748	12.8

Network access. Network access costs increased \$22.9 million, or 25.2%, in 2018, as compared to 2017. The increase is primarily due to a \$10.5 million increase in other direct cost of sales, a \$7.3 million increase in depreciation expense related to our increased fixed assets from our DAS build-out projects, and a \$5.4 million increase in revenue share paid to venues in our managed and operated locations. Network access includes \$9.4 million of expenses related to our multifamily operations, which we acquired in August 2018.

Network operations. Network operations expenses increased \$4.6 million, or 9.7%, in 2018, as compared to 2017, primarily due to a \$3.4 million increase in personnel related expenses, a \$1.3 million increase in hardware and software maintenance expenses, a \$1.2 million increase in depreciation expenses, and a \$0.6 million increase in network maintenance expenses. The increases were partially offset by a \$0.7 million decrease in impairment losses primarily related to construction in progress projects that were abandoned, a \$0.6 million decrease in consulting expenses and a \$0.4 million decrease in our third-party call center costs. Network operations includes \$1.1 million of expenses related to our multifamily operations, which we acquired in August 2018.

Development and technology. Development and technology expenses increased \$4.6 million, or 17.3%, in 2018, as compared to 2017, primarily due to a \$1.4 million increase in personnel related expenses, a \$1.2 million increase in depreciation expense related to our increased fixed assets, a \$0.6 million increase in hardware and software maintenance expenses, a \$0.5 million increase in consulting expenses, and a \$0.3 million increase in cloud computing expenses. Development and technology include \$0.5 million of expenses related to our multifamily operations, which we acquired in August 2018.

Selling and marketing. Selling and marketing expenses increased \$1.7 million, or 8.2%, in 2018, as compared to 2017, primarily due to a \$1.2 million increase in personnel related expenses and a \$0.3 million increase in professional fees and consulting expenses. Selling and marketing includes \$0.6 million of expenses related to our multifamily operations, which we acquired in August 2018.

General and administrative. General and administrative expenses decreased \$5.3 million, or 14.8%, in 2018, as compared to 2017, primarily due to a \$2.8 million settlement expense accrual recorded in 2017 that did not reoccur in 2018, a \$1.3 million decrease in professional fees and consulting expenses, a \$1.3 million decrease in personnel related expenses, which was primarily due to the decrease in stock-based compensation expense, and a \$0.4 decrease in bad debt expenses. General and administrative includes \$0.8 million of expenses related to our multifamily operations, which we acquired in August 2018.

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Amortization of intangible assets. Amortization of intangible assets expense increased \$0.2 million, or 6.1%, in 2018, as compared to 2017, primarily due to the \$1.0 million increase resulting from our Elauwit acquisition in August 2018, which was partially offset by certain intangible assets that became fully amortized during 2017 and 2018.

Interest and Other Expense, Net

Interest and other expense increased \$1.7 million, or 1,133.3%, in 2018, as compared to 2017, primarily due to interest expense incurred related to the Convertible Notes we issued in October 2018. We capitalized \$1.1 million and \$0.8 million of interest expense to capital projects in 2018 and 2017, respectively.

Income Tax (Benefit) Expense

In December 2017, the Tax Cuts and Jobs Act ("TCJA") was enacted in the U.S. TCJA amended the Internal Revenue Code of 1986 and included the following key provisions, which are generally effective for tax years beginning after December 31, 2017, that are determined to have a significant impact on our effective tax rate:

Reduction of the corporate federal tax rate to 21%;

Permanent repeal of the alternative minimum tax regime with refunds of excess carryforwards;

For any net operating losses ("NOLs") generated in tax years beginning after December 31, 2017, repeals carryback ability but permits indefinite carryforward subject to a limitation of utilization to 80% of taxable income;

For executive compensation in excess of \$1 million, changes covered employees to principal executive officer, principal financial officer, and three other highest paid officers; eliminates the "last day of the tax year" language for determination of a covered employee; removes exceptions for commissions and performance-based compensation; and employees that are covered persons remain covered persons for all future years;

Permits 100% bonus depreciation for eligible property placed in-service after September 27, 2017 and before January 1, 2023;

Disallows interest expense in excess of 30% of adjusted taxable income, which excludes deductions for depreciation, amortization, or depletion for taxable years beginning after December 31, 2017 and before January 1, 2022 only, but permits indefinite carryforward; and

Expands income exclusions and/or deduction limitations for certain fringe benefits that we may offer to our employees.

We completed our assessment of the impact of TCJA on our consolidated financial statements as of December 31, 2017 and recorded the impact of the enactment of TCJA in our consolidated financial statements for the year ended December 31, 2017.

In 2018, we recorded an income tax benefit of \$5.2 million, or an effective tax rate of 105.5%, which was inclusive of a \$5.7 million benefit related to the reversal of our valuation allowance for the tax effect on the equity component of our Convertible Notes. In 2017, we recorded an income tax benefit of \$2.1 million, or an effective tax rate of 10.0%, which was inclusive of a \$1.3 million income tax benefit resulting from the reduction of the corporate federal tax rate, as well as a \$1.7 million income tax benefit provided by the indefinite carryforward of NOLs, which were expected to be available to recover our deferred tax liabilities that have an indefinite reversal pattern. Our effective tax rate also differs from the statutory rate primarily due to our valuation allowance for the years ended December 31, 2018 and 2017, as well as minimum state taxes and foreign tax expense for the year

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ended December 31, 2018. Income tax benefit for the year ended December 31, 2018 included an increase of \$0.4 million resulting from the adoption of ASC 606 as of January 1, 2018.

Our future effective tax rate depends on various factors, such as our level of future taxable income, tax legislation and credits and the geographic compositions of our pre-tax income. We do not expect to incur any significant income taxes until such time that we reverse our valuation allowance against our federal and state deferred tax assets upon return to sustained profitability.

Non-controlling Interests

Non-controlling interests increased \$0.9 million, or 152.4% in 2018, as compared to 2017. Non-controlling interests for the year ended December 31, 2018 included an increase of \$1.7 million resulting from the adoption of ASC 606 as of January 1, 2018, which was partially offset by increased depreciation expense related to our increased fixed assets in 2018, as compared to 2017.

Net Loss Attributable to Common Stockholders

Our net loss attributable to common stockholders in 2018 decreased \$18.1 million as compared to 2017, primarily due to the \$46.5 million increase in revenues and the \$3.1 million increase in income tax benefit, which were partially offset by the \$28.7 million increase in costs and operating expenses, the \$1.7 million increase in interest and other expense, net, and the \$0.9 million increase in non-controlling interests. Our diluted net loss per share decreased primarily as a result of the decrease in our net loss.

Adjusted EBITDA

Adjusted EBITDA was \$91.8 million in 2018, an increase of 33.2% from \$68.9 million recorded in 2017. As a percent of revenue, Adjusted EBITDA was 36.6% in 2018, up from 33.7% in 2017. The Adjusted EBITDA increase was due primarily to the \$18.1 million decrease in our net loss attributable to common stockholders, an increase of \$10.0 million for the addback of depreciation and amortization expense, a \$1.7 million increase for the addback of interest and other expense, net and a \$0.9 million increase for the addback of non-controlling interests in 2018 compared to 2017. The changes were partially offset by the \$2.8 million decrease in settlement expense accrual recorded in 2017 that did not reoccur in 2018, a \$3.1 million increase for the deduction for income tax benefit, and the \$1.9 million decrease for the addback for stock-based compensation expense. We define Adjusted EBITDA as net loss attributable to common stockholders plus depreciation and amortization of property and equipment, stock-based compensation expense, amortization of intangible assets, income tax (benefit) expense, interest and other expense, net, non-controlling interests, and excludes charges or gains that are non-recurring, infrequent, or unusual. For a discussion of Adjusted EBITDA and a reconciliation of net loss attributable to common stockholders to Adjusted EBITDA, see footnote 1 to "Selected Financial Data" in Part II, Item 6.

Table of Contents**Years ended December 31, 2017 and 2016****Revenue**

	Year Ended December 31,			
	2017(4)	2016(4)	Change	% Change
(in thousands, except percentages)				
Revenue:				
DAS	\$ 80,552	\$ 58,182	\$ 22,370	38.4
Military	55,129	39,975	15,154	37.9
Wholesale Wi-Fi	31,529	22,221	9,308	41.9
Retail	24,926	26,636	(1,710)	(6.4)
Advertising and other	12,233	12,330	(97)	(0.8)
Total revenue	\$ 204,369	\$ 159,344	\$ 45,025	28.3

Key business metrics:

DAS nodes	23.5	19.2	4.3	22.4
Subscribers military	130	107	23	21.5
Subscribers retail	188	195	(7)	(3.6)
Connects	223,960	142,802	81,158	56.8

(4)

As noted in Item 6, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

DAS. DAS revenue increased \$22.4 million, or 38.4%, in 2017, as compared to 2016, due to a \$20.5 million increase from new build-out projects in our managed and operated locations and a \$1.9 million increase in access fees from our telecom operators. DAS build-out revenues in 2017 and 2016 include \$0.2 million and \$0.5 million, respectively, of short-term build projects that include sales of equipment that were completed during those periods.

Military. Military revenue increased \$15.2 million, or 37.9%, in 2017, as compared to 2016 due to a \$19.2 million increase in military subscriber revenue, which was driven primarily by the increase in military subscribers and a 1.7% increase in the average monthly revenue per military subscriber in 2017 compared to 2016. The increase was partially offset by a \$4.0 million decrease in military single-use revenue.

Wholesale Wi-Fi. Wholesale Wi-Fi revenue increased \$9.3 million, or 41.9%, in 2017, as compared to 2016, due to a \$7.3 million increase in partner usage-based fees and a \$2.0 million increase in fees primarily earned from our venue partners who pay us to provide a Wi-Fi infrastructure that we install, manage and operate at their venues.

Retail. Retail revenue decreased \$1.7 million, or 6.4%, in 2017, as compared to 2016, primarily due to a \$1.6 million decrease in retail single-use revenue.

Advertising and other. Advertising and other revenue decreased \$0.1 million, or 0.8%, in 2017, as compared to 2016, due to a \$0.7 million decrease in advertising sales at our managed and operated locations, which was partially offset by a \$0.6 million increase in revenues from other service agreements.

Table of Contents**Costs and Operating Expenses**

	Year Ended December 31,			
	2017	2016	Change	% Change
(in thousands, except percentages)				
Costs and operating expenses:				
Network access	\$ 90,702	\$ 69,112	\$ 21,590	31.2
Network operations	47,615	42,307	5,308	12.5
Development and technology	26,754	22,126	4,628	20.9
Selling and marketing	20,933	18,729	2,204	11.8
General and administrative	35,568	29,719	5,849	19.7
Amortization of intangible assets	3,498	3,448	50	1.5
Total costs and operating expenses	\$ 225,070	\$ 185,441	\$ 39,629	21.4

Network access. Network access costs increased \$21.6 million, or 31.2%, in 2017, as compared to 2016. The increase is primarily due to a \$15.4 million increase in depreciation expense related to our increased fixed assets from our DAS build-out projects, a \$5.2 million increase in revenue share paid to venues in our managed and operated locations, and a \$0.8 million increase from customer usage at partner venues.

Network operations. Network operations expenses increased \$5.3 million, or 12.5%, in 2017, as compared to 2016, due to a \$2.4 million increase in depreciation expense related to our increased fixed assets, a \$1.5 million increase in personnel related expenses, and a \$1.3 million increase in other expenses. Other expenses for 2017 and 2016 include \$0.9 million and \$0.1 million, respectively, of impairment losses primarily related to construction in progress projects that were abandoned.

Development and technology. Development and technology expenses increased \$4.6 million, or 20.9%, in 2017, as compared to 2016, due to a \$2.0 million increase in depreciation expense related to our increased fixed assets, a \$1.8 million increase in personnel related expenses, and a \$0.8 million increase in cloud computing expenses.

Selling and marketing. Selling and marketing expenses increased \$2.2 million, or 11.8%, in 2017, as compared to 2016, primarily due to a \$1.6 million increase in personnel related expenses, a \$0.3 million increase in marketing and advertising expenses, and a \$0.2 million increase in other consulting expenses.

General and administrative. General and administrative expenses increased \$5.8 million, or 19.7%, in 2017, as compared to 2016, due to a \$2.8 million settlement expense accrual related to a claim from one of our venue partners recorded in 2017, a \$2.6 million increase in personnel related expenses, which was inclusive of a \$1.2 million increase in stock-based compensation, a \$1.5 million increase in professional fees and consulting expenses, and a \$0.7 million increase in bad debt expenses. The increases were partially offset by \$1.4 million of costs we incurred in 2016 on our contested proxy election for the 2016 annual meeting of stockholders and a \$0.4 million decrease in other expenses.

Amortization of intangible assets. Amortization of intangible assets expense remained relatively consistent in 2017, as compared to 2016.

Interest and Other Expense, Net

There were no significant changes in interest and other expense, net, in 2017, as compared to 2016. We capitalized \$0.8 million of interest expense to capital projects in each of the years ended December 31, 2017 and 2016.

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Income Tax (Benefit) Expense

In 2017, we recorded an income tax benefit of \$2.1 million, or an effective tax rate of 10.0%, which is inclusive of a \$1.3 million income tax benefit resulting from the reduction of the corporate federal tax rate as well as a \$1.7 million income tax benefit provided by the indefinite carryforward of NOLs, which are expected to be available to recover our deferred tax liabilities that have an indefinite reversal pattern. In 2016, we recorded an income tax expense of \$0.4 million, or an effective tax rate of 1.6%.

Non-controlling Interests

There were no significant changes in non-controlling interests in 2017, as compared to 2016.

Net Loss Attributable to Common Stockholders

Our net loss in 2017 decreased as compared to 2016, primarily as a result of the \$45.0 million increase in revenues and the \$2.5 million change in our income taxes, which were partially offset by the \$39.6 million increase in costs and operating expenses. Our diluted net loss per share decreased primarily as a result of the decrease in our net loss.

Adjusted EBITDA

Adjusted EBITDA was \$68.9 million in 2017, an increase of 68.9% from \$40.8 million recorded in 2016. As a percent of revenue, Adjusted EBITDA was 33.7% in 2017, up from 25.6% of revenue in 2016. The Adjusted EBITDA increase was due primarily to the \$19.9 million increase in depreciation and amortization expense, the \$8.0 million decrease in our net loss attributable to common stockholders, and the \$1.4 million increase in stock-based compensation expenses in 2017 compared to 2016. The changes were partially offset by the \$2.5 million change in our income taxes in 2017 compared to 2016. Adjusted EBITDA in 2017 excludes \$2.8 million of settlement expense accrual related to a claim from one of our venue partners. Adjusted EBITDA in 2016 excludes \$1.4 million of expenses that we incurred on our contested proxy election for the 2016 annual meeting of stockholders. We define Adjusted EBITDA as net loss attributable to common stockholders plus depreciation and amortization of property and equipment, stock-based compensation expense, amortization of intangible assets, income tax (benefit) expense, interest and other expense, non-controlling interests, and excludes charges or gains that are non-recurring, infrequent, or unusual. For a discussion of Adjusted EBITDA and a reconciliation of net loss attributable to common stockholders to Adjusted EBITDA, see footnote 1 to "Selected Financial Data" in Part II, Item 6.

Liquidity and Capital Resources

We have financed our operations primarily through cash provided by operating activities and borrowings under our credit facility. Our primary sources of liquidity as of December 31, 2018 consisted of \$149.4 million of cash and cash equivalents. At December 31, 2018, we had \$8.2 million of outstanding Letter of Credit Authorization agreements.

Our principal uses of liquidity have been to fund our operations, working capital requirements, capital expenditures and acquisitions. We expect that these requirements will be our principal needs for liquidity over the near term. Our capital expenditures in 2018 were \$108.7 million, of which \$82.7 million was reimbursed through revenue for DAS build-out projects from our telecom operators.

In February 2019, we entered into a new Credit Agreement (the "New Credit Agreement") and related agreements with Bank of America, N.A. acting as agent for lenders named therein, including Bank of America, N.A., Silicon Valley Bank, Bank of the West, Zions Bancorporation, N.A. dba California Bank & Trust, and Barclays Bank PLC (the "Lenders"), for a secured credit facility in the

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form of a revolving line of credit up to \$150.0 million (the "Revolving Line of Credit") and a term loan of \$3.5 million (the "Term Loan" and together with the Revolving Line of Credit, the "New Credit Facility"). The New Credit Facility replaced the November 2014 Credit Facility with Bank of America, N.A. acting as agent for lenders named therein, which expired on November 21, 2018. Our New Credit Facility will mature on April 3, 2023. Amounts borrowed under the Revolving Line of Credit and Term Loan will bear variable interest at the greater of LIBOR plus 1.75% - 2.75% or Lender's Prime Rate plus 0.75% - 1.75% per year and we will pay a fee of 0.25% - 0.5% per year on any unused portion of the Revolving Line of Credit.

Repayment of amounts borrowed under the New Credit Facility may be accelerated in the event that we are in violation of the representation, warranties and covenants made in the Credit Agreement, including certain financial covenants set forth therein, and under other specific default events including, but not limited to, non-payment or inability to pay debt, breach of cross default provisions, insolvency provisions, and change in control. We are subject to customary covenants, including a minimum quarterly consolidated senior secured leverage ratio, a minimum quarterly consolidated total leverage ratio, a maximum quarterly consolidated fixed charge coverage ratio, and cash on hand minimums. We were in compliance with all such financial and non-financial covenants through the date of this report. The New Credit Facility provides us with significant additional flexibility and liquidity to pursue our strategic objectives for capital expenditures and acquisitions that we may pursue from time to time.

In October 2018, we sold, through the initial purchasers, convertible senior notes ("Convertible Notes") to qualified institutional buyers pursuant to Rule 144A of the Securities Act of 1933, as amended, for gross proceeds of \$201.25 million. The Convertible Notes are senior, unsecured obligations with interest payable semi-annually in cash at a rate of 1.00% per annum on April 1st and October 1st of each year, beginning on April 1, 2019. The Convertible Notes will mature on October 1, 2023 unless they are redeemed, repurchased or converted prior to such date. Prior to April 1, 2023, the Convertible Notes are convertible at the option of holders only during certain periods and upon satisfaction of certain conditions. Thereafter, the Convertible Notes will be convertible at any time until the close of business on the second scheduled trading day immediately preceding the maturity date. Upon conversion, the Convertible Notes may be settled in shares of our common stock, cash or a combination of cash and shares of our common stock, at our election.

The Convertible Notes have an initial conversion rate of 23.6323 shares of common stock per \$1,000 principal amount of the Convertible Notes, which will be subject to customary anti-dilution adjustments in certain circumstances. This represents an initial effective conversion price of approximately \$42.31 per share, which represents a premium of approximately 30% to the \$32.55 per share closing price of our common stock on October 2, 2018, the day we priced the offering.

We may redeem all or any portion of the Convertible Notes, at our option, on or after October 5, 2021, at a redemption price equal to 100% of the principal amount of the Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date, if the last reported sale price of our stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which we provide written notice of redemption.

Holders of Convertible Notes may require us to repurchase their Convertible Notes upon the occurrence of certain events that constitute a fundamental change under the indenture governing the Convertible Notes at a fundamental change repurchase price equal to 100% of the principal amount thereof, plus accrued and unpaid interest to, but excluding, the date of repurchase. In connection with certain corporate events or if we issue a notice of redemption prior to the maturity date, it will, under certain circumstances, increase the conversion rate for holders who elect to convert their Convertible Notes in connection with such corporate event or notice of redemption.

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In connection with the pricing of the Convertible Notes, we entered into privately negotiated capped call transactions with a financial institution. The capped call transactions initially cover, subject to customary anti-dilution adjustments, the number of shares of our common stock that initially underlie the Convertible Notes. The cap price of the capped call transactions is initially \$65.10 per share of our common stock, representing a premium of 100% above the closing price of \$32.55 per share of our common stock on October 2, 2018, and is subject to certain adjustments under the terms of the capped call transactions. The capped call transactions are expected generally to reduce potential dilution to our common stock upon conversion of the Convertible Notes and/or offset the potential cash payments that we could be required to make in excess of the principal amount of any converted Convertible Notes upon conversion thereof, with such reduction and/or offset subject to a cap based on the cap price. We paid approximately \$24.0 million for the capped call transactions using a portion of the gross proceeds from the sale of the Convertible Notes.

In connection with the offering of the Convertible Notes, we entered into an amendment to the November 2014 Credit Agreement that amended certain provisions of the November 2014 Credit Agreement to provide for the consummation of the offering and issuance of the Convertible Notes and the incurrence of the debt, and the execution of the capped call transactions

We believe that our existing cash and cash equivalents, cash flow from operations and availability under the New Credit Facility will be sufficient to fund our operations and planned capital expenditures for at least the next 12 months from the date of issuance of our financial statements. There can be no assurance, however, that future industry-specific or other developments, general economic trends, or other matters will not adversely affect our operations or our ability to meet our future cash requirements. Our future capital requirements will depend on many factors, including our rate of revenue growth and corresponding timing of cash collections, the timing and size of our managed and operated location expansion efforts, the timing and extent of spending to support product development efforts, the timing of introductions of new solutions and enhancements to existing solutions and the continuing market acceptance of our solutions. We expect our capital expenditures for 2019 will range from \$100.0 million to \$120.0 million, including \$75.0 million to \$90.0 million of capital expenditures for DAS build-out projects which are reimbursed through revenue from our telecom operator customers. We anticipate the majority of our 2019 capital expenditures will be used to build out and upgrade Wi-Fi and DAS networks at our managed and operated venues. We used \$15.0 million of the net proceeds from the offering of the Convertible Notes to repay the outstanding balance under our previous Credit Facility and we expect to use the remainder of the net proceeds from the offering of the Convertible Notes for general corporate purposes, potential acquisitions and strategic transactions, although we have no agreements or understandings with respect to any acquisitions or strategic transactions at this time and may not enter into any or consummate any transaction. We may also use a portion of the net proceeds for ongoing repurchases of common stock to satisfy withholding obligations related to vesting and settlement of RSUs.

We have contracts with the U.S. government. The U.S. government may modify, curtail or terminate its contracts with us, either at its convenience or for default based on performance. Any such modification, curtailment, or termination of one or more of our government contracts could have a material adverse effect on our earnings, cash flow and/or financial position. We may also enter into other acquisitions of complementary businesses, applications or technologies, which could require us to seek additional equity or debt financing. Additional funds may not be available on terms favorable to us, or at all.

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The following table sets forth cash flow data for the periods indicated therein:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net cash provided by operating activities	\$ 93,321	\$ 97,728	\$ 115,205
Net cash used in investing activities	(133,354)	(74,458)	(107,331)
Net cash provided by (used in) financing activities	162,825	(16,054)	(3,121)

Net Cash Provided by Operating Activities

In 2018, we generated \$93.3 million of net cash from operating activities, a decrease of \$4.4 million from 2017. The decrease is primarily due to a \$29.3 million change in our operating assets and liabilities, which is primarily driven by a lower rate of cash collections and invoicing for our DAS build-out projects, a \$3.0 million increase in the change in our deferred income taxes, a \$1.9 million change in stock-based compensation expenses, a \$0.9 million decrease in the addback for impairment loss and loss on disposal of fixed assets, net, and a \$0.4 million change in bad debt expense in 2018. The changes were partially offset by a \$19.0 million reduction of our net loss, a \$10.0 million change in depreciation and amortization expenses primarily related to our recent increased fixed assets from our DAS build-out projects, Wi-Fi networks, and software development, a \$2.2 million increase in the addback for amortization of deferred financing costs and debt discounts.

In 2017, we generated \$97.7 million of net cash from operating activities, a decrease of \$17.5 million from 2016. The decrease is primarily due to a \$46.0 million non-cash change in our operating assets and liabilities and a \$2.9 million change in our deferred income taxes. The change was partially offset by a \$19.9 million increase in depreciation and amortization expenses related to our recent increased fixed assets from our DAS build-out projects, Wi-Fi networks, and software development, an \$8.2 million decrease in our net loss, a \$1.4 million increase in stock-based compensation expenses, a \$0.7 million increase in bad debt expenses, and a \$1.1 million increase in impairment losses and losses on disposal of fixed assets, net.

In 2016, we generated \$115.2 million of net cash from operating activities, an increase of \$16.6 million from 2015. The increase is primarily due to a \$7.4 million change in our operating assets and liabilities, a \$10.8 million increase in depreciation and amortization expenses related to our recent increased fixed assets from our DAS build-out projects, Wi-Fi networks, and software development, and a \$3.4 million increase in stock-based compensation expenses. The increases were partially offset by the \$4.8 million increase in our net loss.

Net Cash Used in Investing Activities

In 2018, we used \$133.4 million in investing activities, an increase of \$58.9 million from 2017. The increase is due to a \$35.4 million increase in purchases of property and equipment and a \$23.5 million increase in cash paid for asset and business acquisitions.

In 2017, we used \$74.5 million in investing activities, a decrease of \$32.9 million from 2016. The decrease is primarily due to a \$34.0 million decrease in purchases of property and equipment, which was partially offset by \$1.2 million of cash paid for a caching technology intangible asset, which we acquired in November 2016.

In 2016, we used \$107.3 million in investing activities, an increase of \$5.8 million from 2015. This increase is due to a \$4.2 million increase in purchases of property and equipment related to our recent increased fixed assets from our DAS build-out projects, Wi-Fi networks, and software development, and a \$1.6 million decrease in cash provided by net proceeds from sales of marketable securities.

Table of Contents**Net Cash Provided by (Used in) Financing Activities**

In 2018, we received \$162.8 million of cash provided by financing activities, an increase of \$178.9 million from 2017. This increase is due to a \$195.7 million increase in net proceeds from our Convertible Notes offering, a \$15.0 million increase in proceeds from our Credit Facility, and a \$0.7 million increase in proceeds from exercise of stock options. The increases were partially offset by a \$24.0 million payment for capped call options in connection with the Convertible Notes offering, a \$5.7 million increase in payments for federal, state, and local employment payroll taxes related to our RSUs that vested during the period, a \$2.0 million increase in principal payments for our capital leases and notes payable, a \$0.7 million increase in cash paid for debt issuance costs, and a \$0.5 million increase in cash payments to our non-controlling interests.

In 2017, we used \$16.1 million of cash in financing activities, an increase of \$12.9 million from 2016. This change is primarily due to a \$10.4 million increase in payments on our Credit Facility, a \$5.0 million decrease in proceeds from our Credit Facility, a \$2.0 million increase in cash used to pay federal, state, and local employment payroll taxes related to our RSUs that vested during the period, and a \$2.0 million increase in cash paid for our capital leases and notes payable. The changes were partially offset by a \$6.3 million increase in proceeds from exercise of stock options.

In 2016, we used \$3.1 million of cash for financing activities compared to \$8.8 million in cash provided by financing activities in 2015. This change is primarily due to a \$14.8 million decrease in net proceeds from our Credit Facility, a \$1.4 million increase in cash paid for capital leases and notes payable, and a \$0.3 million decrease in cash used to pay federal, state, and local employment payroll taxes related to our RSUs that vested during the period. These changes were partially offset by a \$1.6 million increase in proceeds from exercise of stock options, \$2.8 million of non-recurring payments made in 2015 related to business combinations, and a \$0.2 million decrease in payments to our non-controlling interests.

Contractual Obligations and Commitments

The following table sets forth our contractual obligations and commitments as of December 31, 2018:

	Total	Payments Due by Period			
		Less than 1 Year	2 - 3 Years	4 - 5 Years	More than 5 Years
		(in thousands)			
Venue revenue share minimums(1)	\$ 49,625	\$ 14,638	\$ 15,788	\$ 10,312	\$ 8,887
Operating leases for office and other spaces(2)	26,158	3,573	6,841	6,909	8,835
Open purchase commitments(3)	32,769	32,168	601		
Convertible Notes(4)	201,250			201,250	
Capital leases and notes payable for equipment and software(5)	11,523	6,612	4,911		
Total	\$ 321,325	\$ 56,991	\$ 28,141	\$ 218,471	\$ 17,722

-
- (1) Payments under exclusive long-term, non-cancellable contracts to provide wireless communications network access to venues such as airports. Expense is recorded on a straight-line basis over the term of the lease.
- (2) Office and other spaces under non-cancellable operating leases.
- (3) Open purchase commitments are for the purchase of property and equipment, supplies and services. They are not recorded as liabilities on our consolidated balance sheet as of December 31, 2018 as we have not received the related goods or services.

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- (4) Long-term debt associated with our Convertible Notes are based on contractual terms and intended timing of repayments of long-term debt.
- (5) Payments under non-cancellable capital leases and loans payable related to equipment, primarily for data communication and database software, and prepaid maintenance service purchases.

Off-Balance Sheet Arrangements

We do not have any off-balance sheet financing arrangements and we do not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Transactions with Related Parties

Under our Audit Committee charter, our Audit Committee is responsible for reviewing and approving all related party transactions on a quarterly basis. In addition, our Board of Directors determines annually whether any related party relationships exist among the directors which would interfere with the judgment of individual directors in carrying out his responsibilities as director.

Inflation

Inflationary factors have not had a significant effect on our performance over the past several years. A significant increase in inflation may affect our future performance since we may not be able to recover the increases in our costs with similar increases in our prices.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the potential loss arising from adverse changes in the value of financial instruments. The risk of loss is assessed based on the likelihood of adverse changes in fair values, cash flows or future earnings.

We have established guidelines relative to the diversification and maturities of investments to maintain safety and liquidity. These guidelines are reviewed periodically and may be modified depending on market conditions. Although investments may be subject to credit risk, our investment policy specifies credit quality standards for our investments and limits the amount of credit exposure from any single issue, issuer, or type of investment. At December 31, 2018, we did not have any investments in marketable securities. In January 2019, we began investing in marketable available-for-sale securities comprised primarily of short-term commercial paper, corporate debt instruments and US treasury and agencies obligations.

Our marketable available-for-sale securities are carried at fair value and are intended for use in meeting our ongoing liquidity needs. Unrealized gains and losses on available-for-sale securities, which are deemed temporary, are reported as a separate component of stockholders' equity, net of tax. The cost of debt securities is adjusted for amortization of premiums and accretion of discounts to maturity. The amortization, along with realized gains and losses, would be included in interest and other expense, net.

We are exposed to various market risks including: (i) interest rate risk and (ii) foreign currency exchange rate risk.

Interest rate risk. Our Convertible Notes bear a coupon rate of 1.00% per annum. Our New Credit Facility bears interest at a variable rate equal to the greater of LIBOR plus 1.75% - 2.75% or the Lender's Prime Rate plus 0.75% - 1.75% per year. Our use of variable rate debt exposes us to interest rate risk. A 100-basis point increase in the LIBOR or Lender's Prime Rate as of December 31,

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2018 would not have any impact on net loss and cash flow as we had no amounts outstanding under the New Credit Facility as of December 31, 2018.

Foreign currency exchange rate risk. We are exposed to foreign currency exchange rate risk inherent in conducting business globally in numerous currencies, of which the most significant to our operations for the year ended December 31, 2018 was the Brazilian Real. We are primarily exposed to foreign currency fluctuations related to the operations of our subsidiary in Brazil whose financial statements are not denominated in the U.S. dollar. Our foreign operations are not material to our operations as a whole. As such, we currently do not enter into currency forward exchange or option contracts to hedge foreign currency exposures.

Item 8. Financial Statements and Supplementary Data

The information required by this Item is included in Part IV, Items 15(a)(1) and (2) of this Annual Report on Form 10-K.

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

None.

Item 9A. Controls and Procedures

Disclosure Controls and Procedures

The Company maintains a system of disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in the reports that the Company files or submits under the Securities Exchange Act of 1934, as amended, or the Exchange Act, is processed, recorded, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms. These disclosure controls and procedures include, among other processes, controls and procedures designed to ensure that information required to be disclosed in the reports that the Company files or submits under the Exchange Act is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), as appropriate, to allow for timely decisions regarding required disclosure.

The Company carried out an evaluation, under the supervision and with the participation of management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2018 pursuant to Exchange Act Rule 13a-15. Based upon that evaluation, the Company's Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures, as defined in Exchange Act Rule 13a-15(e) and 15d-15(e), were effective as of the end of the period covered by this Annual Report.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting at the Company. Our internal control over financial reporting is a process designed under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's financial statements for external reporting purposes in accordance with GAAP. A company's internal control over financial reporting includes those policies and procedures that:

pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company;

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provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and the directors of the Company; and

provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

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

Under the supervision and with the participation of management, including the certifying officers, the Company conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2018 based on the framework in *Internal Control Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Management's assessment included an evaluation of the design of the Company's internal control over financial reporting and testing of the operational effectiveness of its internal control over financial reporting.

Management has excluded Boingo MDU, LLC, a wholly owned subsidiary of the Company formed in 2018, from its assessment of internal control over financial reporting as of December 31, 2018 because Boingo MDU, LLC acquired the assets of Elauwit Networks, LLC in August 2018 and such assets comprise substantially all of the assets of Boingo MDU, LLC. Boingo MDU, LLC's total assets and total revenues represent 5.3% and 4.5%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Based on this assessment, management determined that, as of December 31, 2018, the Company maintained effective internal control over financial reporting. The effectiveness of the Company's internal control over financial reporting has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm. The registered public accounting firm's audit of internal control over financial reporting also excluded Boingo MDU, LLC. The Report of Independent Registered Public Accounting Firm is filed with this Annual Report on Form 10-K in a separate section following Part IV, as shown on the index under Item 15 of this Annual Report.

Changes in Internal Control over Financial Reporting

Throughout 2018, in order to facilitate the adoption of the new lease accounting standard on January 1, 2019, we implemented internal controls to help ensure we properly evaluated our lease contracts and assessed the impact to our consolidated financial statements. We expect to continue to implement additional internal controls related to the adoption of this standard in the first quarter of 2019.

There have been no other changes in the Company's internal control over financial reporting (as defined by Exchange Act Rule 13a-15(f) and 15d-15(f)) that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting during the quarter ended December 31, 2018.

Item 9B. Other Information

On February 26, 2019, we entered into a new Credit Agreement (the "New Credit Agreement") and related agreements with Bank of America, N.A. acting as agent for lenders named therein, including Bank of America, N.A., Silicon Valley Bank, Bank of the West, Zions Bancorporation, N.A.

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dba California Bank & Trust, and Barclays Bank PLC (the "Lenders"), for a secured credit facility in the form of a revolving line of credit up to \$150.0 million (the "Revolving Line of Credit") and a term loan of \$3.5 million (the "Term Loan" and together with the Revolving Line of Credit, the "New Credit Facility"). Our New Credit Facility will mature on April 3, 2023. Amounts borrowed under the Revolving Line of Credit and Term Loan will generally bear variable interest at the greater of LIBOR plus 1.75% - 2.75% or Lender's Prime Rate plus 0.75% - 1.75% per year and we will pay a fee of 0.25% - 0.5% per year on any unused portion of the Revolving Line of Credit. We may use borrowings under the New Credit Facility for general working capital and corporate purposes. In general, amounts borrowed under the New Credit Facility are secured by a lien against all of our assets, with certain exclusions.

The Term Loan requires quarterly payments of interest and principal, amortizing fully over the term such that it is repaid in full on the maturity date of April 3, 2023, but may be prepaid in whole or part at any time. Repayment of amounts borrowed under the New Credit Facility may be accelerated in the event that we are in violation of the representation, warranties and covenants made in the Credit Agreement, including certain financial covenants set forth therein, and under other specific default events including, but not limited to, non-payment or inability to pay debt, breach of cross default provisions, insolvency provisions, and change in control. We are subject to customary covenants, including a minimum quarterly consolidated senior secured leverage ratio, a minimum quarterly consolidated total leverage ratio, a maximum quarterly consolidated fixed charge coverage ratio, and cash on hand minimums.

Bank of America N.A., Silicon Valley Bank and the other lender parties to the New Credit Agreement, and certain of their respective affiliates, have provided, and in the future may provide, financial, banking and related services to us. These parties have received, and in the future may receive, compensation from us for these services.

The foregoing description of the New Credit Facility does not purport to be complete and is qualified in its entirety by reference to the New Credit Agreement and related agreements, copies of which are filed as Exhibit 10.32 with this Annual Report on Form 10-K.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by Item 10 will be included in the Company's definitive Proxy Statement under the caption "Directors, Executive Officers and Corporate Governance" and "Section 16(a) Beneficial Ownership Reporting Compliance," to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A, which information is incorporated herein by this reference.

Item 11. Executive Compensation

The Company maintains employee benefit plans and programs in which its executive officers are participants. Copies of certain of these plans and programs are set forth or incorporated by reference as Exhibits to this report. Information required by Item 11 will be included in the Company's definitive Proxy Statement under the captions "Director Compensation," "Executive Compensation," "Compensation Discussion and Analysis," and "Directors, Executive Officers and Corporate Governance," to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A, which information is incorporated herein by this reference.

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

The information required by Item 12 will be included in the Company's definitive Proxy Statement under the caption "Security Ownership of Certain Beneficial Owners and Management," to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A, which information is incorporated herein by this reference. The information required to be disclosed by Item 201(d) of Regulation S-K regarding our equity securities authorized for issuance under our equity incentive plans is incorporated herein by reference to the section entitled "Securities Authorized for Issuance under Equity Compensation Plans" in our definitive Proxy Statement for our Annual Meeting of Stockholders to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by Item 13 of Form 10-K regarding transactions with related persons, promoters and certain control persons, if any, will be included in the Company's definitive Proxy Statement under the caption "Certain Relationships and Related Party Transactions" to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A, which information is incorporated herein by this reference. The information required by Item 13 of Form 10-K regarding director independence will be included in the Company's definitive Proxy Statement under the caption "Directors, Executive Officers and Corporate Governance Corporate Governance and Board Matters Independence of the Board of Directors," to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A, which information is incorporated herein by this reference.

Item 14. Principal Accounting Fees and Services

The information required by Item 14 will be included in the Company's definitive Proxy Statement under the caption "Independent Registered Public Accounting Firm" to be filed with the Commission within 120 days after the end of fiscal year 2018 pursuant to Regulation 14A, which information is incorporated herein by this reference.

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PART IV

Item 15. Exhibits

(a) The following documents are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

(1)(2) *Financial Statements.* The following consolidated financial statements of Boingo Wireless, Inc., and Report of Independent Registered Public Accounting Firm are included in a separate section of this Annual Report on Form 10-K beginning on page F-1.

Description	Page Number
<u>Report of Independent Registered Public Accounting Firm</u>	<u>F-2</u>
<u>Consolidated Balance Sheets as of December 31, 2018 and 2017</u>	<u>F-4</u>
<u>Consolidated Statements of Operations for the Years Ended December 31, 2018, 2017 and 2016</u>	<u>F-5</u>
<u>Consolidated Statements of Comprehensive Income (Loss) for the Years Ended December 31, 2018, 2017 and 2016</u>	<u>F-6</u>
<u>Consolidated Statements of Stockholder's Equity for the Years Ended December 31, 2018, 2017 and 2016</u>	<u>F-7</u>
<u>Consolidated Statements of Cash Flows for the Years Ended December 31, 2018, 2017 and 2016</u>	<u>F-8</u>
<u>Notes to Consolidated Financial Statements</u>	<u>F-9</u>

All financial statement schedules have been omitted because the required information is not applicable or not present in amounts sufficient to require submission of the schedule, or because the information required is included in our consolidated financial statements or the notes thereto.

(3) *Exhibits.* The exhibits listed under Item 15(b) hereof are filed with, or incorporated by reference into, this Annual Report on Form 10-K. Each management contract or compensatory plan or arrangement is identified separately in item 15(b) hereof.

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(b) The following exhibits are filed as part of, or incorporated by reference into, this Annual Report on Form 10-K:

Exhibit No.	Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
3.1	<u>Amended and Restated Certificate of Incorporation.</u>	S-1	03/21/2011	3.2	
3.2	<u>Certificate of Amendment to the Certificate of Incorporation.</u>	8-K	06/09/2017	3.1	
3.3	<u>Amended and Restated Bylaws.</u>	8-K	06/09/2017	3.2	
4.1	<u>Amendment No. 1 to Amended and Restated Investor Rights Agreement, dated April 12, 2011.</u>	S-1	04/13/2011	4.1	
4.2	<u>Amended and Restated Investor Rights Agreement among the Registrant and certain stockholders, dated June 27, 2006.</u>	S-1	01/14/2011	4.2	
4.3	<u>Indenture (including form of Note) with respect to the Company's 1.00% Convertible Senior Notes due 2023, dated as of October 5, 2018, between the Company and Wilmington Trust, National Association, as trustee.</u>	8-K	10/05/2018	4.1	
10.1	<u>Form of Indemnification Agreement to be entered into between the Registrant and each of its directors and officers.</u>	S-1	03/21/2011	10.1	
10.2	<u>Amended and Restated 2001 Stock Incentive Plan.</u>	S-1	01/14/2011	10.2	
10.3	<u>2001 Stock Incentive Plan Notice of Option Grant and Option Agreement.</u>	10-Q	08/04/2017	10.1	
10.4	<u>Form of Vesting Extension Agreement.</u>	8-K	02/03/2016	99.1	
10.5	<u>Amended and Restated 2011 Equity Incentive Plan.</u>	10-Q	08/10/2015	10.1	
10.6	<u>2011 Equity Incentive Plan Notice of Restricted Stock Unit Award and Restricted Stock Unit Agreement (Performance Stock Units).</u>	10-Q	08/04/2017	10.2	
10.7	<u>2011 Equity Incentive Plan Notice of Restricted Stock Unit Award and Restricted Stock Unit Agreement.</u>	10-Q	08/04/2017	10.3	
10.8	<u>Letter agreement between the Registrant and David Hagan, dated April 11, 2011.</u>	S-1	04/13/2011	10.5	
10.9	<u>2010 Management Incentive Compensation Plan.</u>	S-1	01/14/2011	10.7	
10.10	<u>Office Lease Agreement, dated April 2007, between CA-10960 Wilshire Limited Partnership and Registrant.</u>	S-1	01/14/2011	10.8	

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Exhibit No.	Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
10.11	<u>Lease Amendment dated August 19, 2014 between CA-10960 Wilshire Limited Partnership and Registrant.</u>	10-Q	11/10/2014	10.1	
10.12	<u>License Agreement for Wireless Communications Access System, dated November 17, 2005, between City of Chicago and Chicago Concourse Development Group, LLC.^</u>	S-1	04/29/2011	10.9	
10.13	<u>Consent to Change in Ownership and Amendment of Agreement, dated June 22, 2006, between City of Chicago and Chicago Concourse Development Group, LLC.</u>	S-1	2/25/2011	10.9A	
10.14	<u>Amendment Agreement, dated December 31, 2014 between the Registrant and the City of Chicago.^</u>	10-K	03/16/2015	10.11	
10.15	<u>2018 Amendment to License Agreement for Wireless Communications Access System between City of Chicago and Chicago Concourse Development Group, LLC, dated as of March 31, 2018</u>	10-Q/A	07/20/2018	10.1	
10.16	<u>Telecommunications Network Access Agreement, dated August 26, 1999, between The Port Authority of New York and New Jersey and New York Telecom Partners, LLC.^</u>	S-1	04/29/2011	10.10	
10.17	<u>Supplemental Agreement, dated March 28, 2001 between The Port Authority of New York and New Jersey and New York Telecom Partners, LLC.^</u>	S-1	04/29/2011	10.10A	
10.18	<u>Supplemental Agreement, dated June 30, 2002 between the Port Authority of New York and New Jersey and New York Telecom Partners, LLC.^</u>	10-Q	11/10/2014	10.2	
10.19	<u>Supplemental Agreement, dated November 30, 2006 between the Port Authority of New York and New Jersey and New York Telecom Partners, LLC.^</u>	10-Q	11/10/2014	10.3	
10.20	<u>Letter, dated August 19, 2013, from New York Telecom Partners, LLC to The Port Authority of New York and New Jersey.#</u>	10-Q	11/12/2013	10.17	
10.21	<u>Supplemental Agreement, dated July 21, 2014 between the Port Authority of New York and New Jersey and New York Telecom Partners, LLC.^</u>	10-Q	11/10/2014	10.4	
10.22	<u>Management Incentive Compensation Plan.</u>	S-1	03/21/2011	10.11	

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Exhibit No.	Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
10.23	<u>Letter agreement between the Registrant and Peter Hovenier, dated April 1, 2013.</u>	8-K	04/02/2013	10.1	
10.24	<u>Letter agreement between the Registrant and Dawn Callahan, dated January 1, 2013.</u>	10-K	03/17/2014	10.15	
10.25	<u>Letter agreement between the Registrant and Tom Tracey, dated September 23, 2011.</u>	10-K	03/17/2014	10.16	
10.26	<u>Letter agreement between the Registrant and Derek Peterson, dated January 30, 2013.</u>	10-K	03/17/2014	10.17	
10.27	<u>Notice of Restricted Stock Unit Award and Restricted Stock Unit Agreement (2016 Performance Stock Units) under 2011 Equity Incentive Plan.</u>	8-K	02/03/2016	99.2	
10.28	<u>Cooperation Agreement, dated June 1, 2016, by and among Boingo Wireless, Inc., each of Ides Capital Management LP, Ides Capital Opportunities Fund, LP, Ides Capital Advisors LLC, Ides Capital Partners LP, Ides Capital GP LLC, Dianne McKeever, Robert Longnecker, and each of Legion Partners, L.P. I, Legion Partners, L.P. II, Legion Partners, LLC, Legion Partners Asset Management, LLC, Legion Partners Holdings, LLC, Christopher S. Kiper, Bradley S. Vizi and Raymond White.</u>	8-K	06/01/2016	10.1	
10.29	<u>Asset Purchase Agreement, dated August 1, 2018, by and among Boingo Wireless, Inc., Boingo MDU, LLC, Elauwit Networks, LLC, Daniel McDonough, Jr., Barry Rubens and Taylor Jones and, solely with respect to Article VII, Elauwit, LLC and DragonRider Enterprises, LLC.</u>	8-K	08/02/2018	10.1	
10.30	<u>Form of Base Capped Call Confirmation.</u>	8-K	10/05/2018	99.1	
10.31	<u>Form of Additional Capped Call Confirmation.</u>	8-K	10/05/2018	99.2	
10.32	<u>Credit Agreement between the Registrant and Bank of America, N.A.#</u>				X
10.33	<u>Letter agreement between the Registrant and Mike Finley, dated February 21, 2019.</u>				X
14.1	<u>Code of Ethics and Business Conduct.</u>	8-K	11/02/2017	14.1	
21.1	<u>List of subsidiaries.</u>				X
23.1	<u>Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.</u>				X
24.1	<u>Power of Attorney (included in Signature Page)</u>				X

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Exhibit No.	Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
31.1	<u>Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act.</u>				X
31.2	<u>Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act.</u>				X
32.1	<u>Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act.*</u>				X
32.2	<u>Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act.*</u>				X
101.INS	XBRL Instance Document				X
101.SCH	XBRL Taxonomy Extension Schema Document				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				X

*
Furnished herewith.

^
Portions of this exhibit (indicated by asterisks) have been omitted pursuant to an order granting confidential treatment. These portions have been submitted separately to the Securities and Exchange Commission.

Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment. These portions have been submitted separately to the Securities and Exchange Commission.

Indicates a management contract or compensatory plan.

Item 16. Form 10-K Summary

Not applicable.

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INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

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<u>Report of Independent Registered Public Accounting Firm</u>	<u>F-2</u>
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All schedules are omitted because they are not applicable, or the required information is shown in the Company's consolidated financial statements or the related notes thereto.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Boingo Wireless, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Boingo Wireless, Inc. and its subsidiaries (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income (loss), stockholders' equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control Integrated Framework (2013)* issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for revenue from contracts with customers in 2018.

Basis for Opinions

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

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

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

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audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As described in Management's Report on Internal Control over Financial Reporting, management has excluded Boingo MDU, LLC from its assessment of internal control over financial reporting as of December 31, 2018 because it was acquired by the Company in a purchase business combination during 2018. We have also excluded Boingo MDU, LLC from our audit of internal control over financial reporting. Boingo MDU, LLC is a wholly-owned subsidiary whose total assets and total revenues excluded from management's assessment and our audit of internal control over financial reporting represent 5.3% and 4.5%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ PricewaterhouseCoopers LLP
Los Angeles, California
March 1, 2019

We have served as the Company's auditor since 2002, which includes periods before the Company became subject to SEC reporting requirements.

Table of Contents**Boingo Wireless, Inc.****Consolidated Balance Sheets****(In thousands, except per share amounts)**

	December 31,	
	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 149,412	\$ 26,685
Accounts receivable, net	42,766	26,148
Prepaid expenses and other current assets	7,815	6,369
Total current assets	199,993	59,202
Property and equipment, net	314,179	262,359
Goodwill	59,640	42,403
Intangible assets, net	19,152	10,263
Other assets	9,936	10,082
Total assets	\$ 602,900	\$ 384,309
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	\$ 21,543	\$ 11,589
Accrued expenses and other liabilities	62,653	42,405
Deferred revenue	80,383	61,708
Current portion of long-term debt		875
Current portion of capital leases and notes payable	6,612	5,771
Total current liabilities	171,191	122,348
Deferred revenue, net of current portion	137,205	149,168
Long-term debt	151,670	
Long-term portion of capital leases and notes payable	4,911	6,747
Deferred tax liabilities	1,073	1,004
Other liabilities	6,728	6,012
Total liabilities	472,778	285,279
Commitments and contingencies (Note 15)		
Stockholders' equity:		
Preferred stock, \$0.0001 par value; 5,000 shares authorized; no shares issued and outstanding		
Common stock, \$0.0001 par value; 100,000 shares authorized; 42,669 and 40,995 shares issued and outstanding for 2018 and 2017, respectively	4	4
Additional paid-in capital	259,132	230,679
Accumulated deficit	(129,930)	(131,967)
Accumulated other comprehensive loss	(1,295)	(898)
Total common stockholders' equity	127,911	97,818
Non-controlling interests	2,211	1,212
Total stockholders' equity	130,122	99,030
Total liabilities and stockholders' equity	\$ 602,900	\$ 384,309

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

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Table of Contents**Boingo Wireless, Inc.****Consolidated Statements of Operations****(In thousands, except per share amounts)**

	Year Ended December 31,		
	2018	2017	2016
Revenue	\$ 250,821	\$ 204,369	\$ 159,344
Costs and operating expenses:			
Network access	113,572	90,702	69,112
Network operations	52,215	47,615	42,307
Development and technology	31,372	26,754	22,126
Selling and marketing	22,647	20,933	18,729
General and administrative	30,302	35,568	29,719
Amortization of intangible assets	3,710	3,498	3,448
Total costs and operating expenses	253,818	225,070	185,441
Loss from operations	(2,997)	(20,701)	(26,097)
Interest and other expense, net	(1,887)	(153)	(459)
Loss before income taxes	(4,884)	(20,854)	(26,556)
Income tax (benefit) expense	(5,153)	(2,078)	427
Net income (loss)	269	(18,776)	(26,983)
Net income attributable to non-controlling interests	1,489	590	348
Net loss attributable to common stockholders	\$ (1,220)	\$ (19,366)	\$ (27,331)
Net loss per share attributable to common stockholders:			
Basic	\$ (0.03)	\$ (0.49)	\$ (0.72)
Diluted	\$ (0.03)	\$ (0.49)	\$ (0.72)
Weighted average shares used in computing net loss per share attributable to common stockholders:			
Basic	42,066	39,824	38,025
Diluted	42,066	39,824	38,025

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

Table of Contents**Boingo Wireless, Inc.****Consolidated Statements of Comprehensive Income (Loss)****(In thousands)**

	Year Ended December 31,		
	2018	2017	2016
Net income (loss)	\$ 269	\$ (18,776)	\$ (26,983)
Other comprehensive (loss) income, net of tax:			
Foreign currency translation adjustments	(342)	(19)	211
Comprehensive loss	(73)	(18,795)	(26,772)
Comprehensive income attributable to non-controlling interest	1,544	599	269
Comprehensive loss attributable to common stockholders	\$ (1,617)	\$ (19,394)	\$ (27,041)

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

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Boingo Wireless, Inc.

Consolidated Statements of Stockholders' Equity

(In thousands)

	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Non- controlling Interest	Total Stockholder's Equity
Balance at December 31, 2015	37,325	\$ 4	\$ 197,612	\$ (85,176)	\$ (1,160)	\$ 755	\$ 112,035
Issuance of common stock under stock incentive plans	1,237		2,984				2,984
Shares withheld for taxes			(2,827)				(2,827)
Stock-based compensation expense			13,412				13,412
Non-controlling interest distributions						(286)	(286)
Cumulative effect of a change in accounting principle			94	(94)			
Net loss				(27,331)		348	(26,983)
Other comprehensive loss					290	(79)	211
Balance at December 31, 2016	38,562	4	211,275	(112,601)	(870)	738	98,546
Issuance of common stock under stock incentive plans	2,433		9,244				9,244
Shares withheld for taxes			(4,872)				(4,872)
Stock-based compensation expense			15,032				15,032
Non-controlling interest distributions						(125)	(125)
Net loss				(19,366)		590	(18,776)
Other comprehensive income					(28)	9	(19)
Balance at December 31, 2017	40,995	4	230,679	(131,967)	(898)	1,212	99,030
Issuance of common stock under stock incentive plans	1,674		9,979				9,979
Shares withheld for taxes			(10,536)				(10,536)
Stock-based compensation expense			13,057				13,057
Equity component of Convertible Notes, net of offering costs and tax			39,922				39,922
Payment for capped call share options			(23,969)				(23,969)
Non-controlling interest distributions						(614)	(614)
Cumulative effect of a change in accounting principle				3,257		69	3,326
Net income				(1,220)		1,489	269
Other comprehensive loss					(397)	55	(342)
Balance at December 31, 2018	42,669	\$ 4	\$ 259,132	\$ (129,930)	\$ (1,295)	\$ 2,211	\$ 130,122

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

Table of Contents**Boingo Wireless, Inc.****Consolidated Statements of Cash Flows****(In thousands)**

	Year Ended December 31,		
	2018	2017	2016
Cash flows from operating activities			
Net income (loss)	\$ 269	\$ (18,776)	\$ (26,983)
Adjustments to reconcile net loss including non-controlling interests to net cash provided by operating activities:			
Depreciation and amortization of property and equipment	78,837	69,097	49,202
Amortization of intangible assets	3,710	3,498	3,448
Bad debt expense	363	773	116
Impairment loss and loss on disposal of fixed assets, net	238	1,158	66
Stock-based compensation	12,268	14,215	12,805
Amortization of deferred financing costs and debt discount, net of amounts capitalized	2,261	86	182
Change in deferred income taxes	(5,617)	(2,575)	303
Changes in operating assets and liabilities, net of effect of acquisition:			
Accounts receivable	(13,702)	16,046	526
Prepaid expenses and other assets	(800)	(841)	(835)
Accounts payable	(246)	(1,554)	(465)
Accrued expenses and other liabilities	6,477	9,313	5,835
Deferred revenue	9,263	7,288	71,005
Net cash provided by operating activities	93,321	97,728	115,205
Cash flows from investing activities			
Purchases of property and equipment	(108,730)	(73,308)	(107,271)
Payments for asset and business acquisitions	(24,624)	(1,150)	(60)
Net cash used in investing activities	(133,354)	(74,458)	(107,331)
Cash flows from financing activities			
Proceeds from Convertible Notes offering, net of issuance costs	195,716		
Payment for capped call options	(23,969)		
Proceeds from credit facility	15,000		5,000
Principal payments on credit facility	(15,875)	(16,094)	(5,656)
Proceeds from exercise of stock options	9,979	9,244	2,984
Payments of capital leases and notes payable	(6,181)	(4,207)	(2,212)
Payments of withholding tax on net issuance of restricted stock units	(10,536)	(4,872)	(2,827)
Debt issuance costs	(695)		(124)
Payments to non-controlling interest	(614)	(125)	(286)
Net cash provided by (used in) financing activities	162,825	(16,054)	(3,121)
Effect of exchange rates on cash.	(65)	(16)	14
Net increase in cash and cash equivalents	122,727	7,200	4,767
Cash and cash equivalents at beginning of year	26,685	19,485	14,718
Cash and cash equivalents at end of year	\$ 149,412	\$ 26,685	\$ 19,485

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Supplemental disclosure of cash flow information

Cash paid for interest, net of amounts capitalized	\$	\$	239	\$
Cash paid for taxes, net of refunds	\$	565	\$	304
			\$	163

Supplemental disclosure of non-cash investing and financing activities

Property and equipment costs included in accounts payable, accrued expenses and other liabilities	\$	37,275	\$	20,554	\$	16,976
Purchase of equipment and prepaid maintenance services under capital financing arrangements	\$	5,068	\$	7,944	\$	6,629
Capitalized stock-based compensation included in property and equipment costs	\$	789	\$	696	\$	727
Purchase price for asset and business acquisitions included in accrued expenses and other liabilities	\$	4,913	\$		\$	1,150
Debt issuance costs included in accrued expenses and other liabilities	\$	164	\$		\$	
Tax effect on equity component of Convertible Notes	\$	5,686	\$		\$	

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

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements

(In thousands, except shares and per share amounts)

1. The business

Boingo Wireless, Inc. and its subsidiaries (collectively "we", "us", "our" or "the Company") is a leading global provider of wireless connectivity solutions for smartphones, tablets, laptops, wearables and other wireless-enabled consumer devices. Boingo Wireless, Inc. was incorporated in April 16, 2001 in the State of Delaware. We have a diverse monetization model that enables us to generate revenues from wholesale partnerships, retail sales, and advertising across these wireless networks. Wholesale offerings include distributed antenna systems ("DAS") or small cells, which are cellular extension networks, multifamily, carrier offload, Wi-Fi roaming, value-added services, private label Wi-Fi, and location-based services. Retail products include Wi-Fi services for military personnel living in the barracks of U.S. Army, Air Force and Marines bases around the world, and Wi-Fi subscriptions and day passes that provide access to over 1.2 million commercial hotspots worldwide. Advertising revenue is driven by Wi-Fi sponsorships at airports, hotels, cafes and restaurants, and public spaces. Our customers include some of the world's largest carriers, telecommunications service providers, global consumer brands, and property owners, as well as troops stationed at military bases and Internet savvy consumers on the go.

2. Summary of significant accounting policies

Basis of presentation and consolidation

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP").

The accompanying consolidated financial statements include our accounts and the accounts of our majority owned subsidiaries. We consolidate our 70% ownership of Chicago Concourse Development Group, LLC and our 75% ownership of Boingo Holding Participacoes Ltda. in accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") 810, *Consolidation*. Other parties' interests in consolidated entities are reported as non-controlling interests. All intercompany balances and transactions have been eliminated in consolidation.

In May 2014, the FASB issued Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers*, which replaced the accounting standards for revenue recognition under FASB ASC 605, *Revenue Recognition*, with a single comprehensive five-step model, eliminating industry-specific accounting rules. The core principle is to recognize revenue upon the transfer of control of goods or services to a customer at an amount that reflects the consideration expected to be received. The FASB amended several aspects of the guidance after the issuance of ASU 2014-09, and the new revenue recognition accounting standard, as amended, was codified within ASC 606, *Revenue from Contracts with Customers*. On January 1, 2018, we adopted ASC 606 using the modified retrospective method applied to those contracts which were not completed as of January 1, 2018. Results for reporting periods beginning on January 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with ASC 605.

Adoption of ASC 606 using the modified retrospective method required us to record a cumulative effect adjustment, net of tax, to accumulated deficit and non-controlling interests of \$3,257 and \$69,

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****2. Summary of significant accounting policies (Continued)**

respectively, on January 1, 2018. In addition, adoption of the standard resulted in the following changes to the consolidated balance sheet as of January 1, 2018:

	January 1, 2018 (Per ASC 605)	Adjustment for Adoption	January 1, 2018 (Per ASC 606)
Accounts receivable, net	\$ 26,148	\$ (1,069)	\$ 25,079
Prepaid expenses and other current assets	\$ 6,369	\$ 170	\$ 6,539
Other assets	\$ 10,082	\$ (2,179)	\$ 7,903
Deferred revenue, current	\$ 61,708	\$ 14,176	\$ 75,884
Deferred revenue, net of current portion	\$ 149,168	\$ (20,580)	\$ 128,588

The below table summarizes the changes to our consolidated balance sheet as of December 31, 2018 as a result of the adoption of ASC 606:

	December 31, 2018 (Per ASC 605)	Adjustment for Adoption	December 31, 2018 (Per ASC 606)
	(in thousands)		
Accounts receivable, net	\$ 43,410	\$ (644)	\$ 42,766
Prepaid expenses and other current assets	\$ 7,603	\$ 212	\$ 7,815
Other assets	\$ 12,224	\$ (2,288)	\$ 9,936
Deferred revenue, current	\$ 82,731	\$ (2,348)	\$ 80,383
Deferred revenue, net of current portion	\$ 147,785	\$ (10,580)	\$ 137,205
Non-controlling interests	\$ 408	\$ 1,803	\$ 2,211

The below table summarizes the changes to our consolidated statement of operations for the year ended December 31, 2018 as a result of the adoption of ASC 606 with income taxes calculated excluding the tax effect on the equity component of the Convertible Notes:

	Year Ended December 31, 2018 (Per ASC 605)	Adjustment for Adoption	Year Ended December 31, 2018 (Per ASC 606)
	(in thousands)		
Revenue	\$ 244,307	\$ 6,514	\$ 250,821
Income tax benefit	\$ (4,785)	\$ (368)	\$ (5,153)
Non-controlling interests	\$ (245)	\$ 1,734	\$ 1,489

The changes to the consolidated balance sheets as of January 1, 2018 and December 31, 2018 and the consolidated statement of operations for the year ended December 31, 2018 were primarily due to the following factors: (i) reclassification of unbilled receivables (contract assets) to a contra-liability account under ASC 606; and (ii) recognition of revenue related to our single performance obligation for our DAS contracts monthly over the contract term once the customer has the ability to access the DAS network and we commence maintenance on the DAS network under ASC 606 as compared to recognition of build-out fees for our DAS contracts monthly over the term of the estimated customer relationship period once the build-out is complete and minimum monthly access fees for our DAS contracts monthly over the term of the telecom operator agreement under ASC 605. The changes to

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

2. Summary of significant accounting policies (Continued)

the consolidated balance sheet as of January 1, 2018 are reflected as non-cash changes within cash provided by operating activities in our consolidated statement of cash flows for the year ended December 31, 2018.

In May 2017, the FASB issued ASU 2017-09, *Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting*, which provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity applies modification accounting under ASC 718. According to the new standard, an entity would not apply modification accounting if the fair value, vesting conditions and classification of the modified award is the same as the original award immediately before the original award is modified. The standard will be applied prospectively to modifications that occur on or after the adoption date. We adopted ASU 2017-09 on January 1, 2018 and the adoption of this standard did not have a material impact on our consolidated financial statements.

In January 2017, the FASB issued Accounting Standards Update ("ASU") 2017-04, *Intangibles - Goodwill and Other (Topic 350)*, which simplifies how an entity is required to test goodwill for impairment. An entity will no longer perform a hypothetical purchase price allocation to measure goodwill impairment. Instead, impairment will be measured using the difference between the carrying amount and the fair value of the reporting unit. The standard is effective for interim and annual periods beginning after December 15, 2019 with early adoption permitted for goodwill impairment tests with measurement dates after January 1, 2017. We elected to early adopt ASU 2017-04 as of January 1, 2017 and the adoption of this standard did not have a material impact on our consolidated financial statements.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*, which requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Therefore, amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. We adopted ASU 2016-18 on January 1, 2018 under the retrospective transition method for each period presented in our consolidated statements of cash flows.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230)*, which adds or clarifies guidance to reduce diversity in how certain transactions are classified in the statement of cash flows. The standard is effective for interim and annual periods beginning after December 15, 2017 with early adoption permitted. The standard requires application using a retrospective transition method. We elected to early adopt ASU 2016-15 as of January 1, 2017 and the adoption of this standard did not have a material impact on our consolidated financial statements.

Use of estimates

The preparation of accompanying consolidated financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the dates of the accompanying consolidated financial statements, and the reported amounts of revenue and expenses during the reporting period.

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

2. Summary of significant accounting policies (Continued)

Actual results could differ from those estimates. Assets and liabilities which are subject to significant judgment and the use of estimates include the allowance for doubtful accounts, recoverability of goodwill and long-lived assets, valuation allowances with respect to deferred tax assets, uncertain tax positions, useful lives associated with property and equipment, valuation and useful lives of intangible assets, valuation of contingent consideration, contract assets and contract liabilities including estimates of variable consideration, and the valuation and assumptions underlying stock-based compensation and other equity instruments. On an ongoing basis, we evaluate our estimates compared to historical experience and trends, which form the basis for making judgments about the carrying value of assets and liabilities.

Concentrations of credit risk

Financial instruments that potentially subject us to significant concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. We extend credit based upon the evaluation of the customer's financial condition and generally collateral is not required. We maintain an allowance for doubtful accounts based upon expected collectability of accounts receivable. We primarily estimate our allowance for doubtful accounts based on a specific review of significant outstanding accounts receivable. For the year ended December 31, 2018, three customers accounted for 37% of total revenue. For the year ended December 31, 2017, four customers accounted for 44% of total revenue. For the year ended December 31, 2016, two customers accounted for 23% of total revenue. At December 31, 2018, four customers accounted for 20%, 19%, 17% and 13% of the total accounts receivable, respectively. At December 31, 2017, three customers accounted for 19%, 17% and 13% of the total accounts receivable, respectively.

Cash and cash equivalents

Cash and cash equivalents include highly liquid investments that are readily convertible into known amounts of cash with original maturities of three months or less when acquired. At December 31, 2018 and 2017, cash equivalents consisted of money market funds.

Fair value of financial instruments

Fair value is defined as the price that would be received from selling an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, we consider the principal or most advantageous market in which it would transact, and we consider assumptions that market participants would use when pricing the asset or liability.

The accounting guidance for fair value measurement also requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The standard establishes a fair value hierarchy based on the level of independent, objective evidence surrounding the inputs used to measure fair value. A financial instrument's categorization within the

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****2. Summary of significant accounting policies (Continued)**

fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The fair value hierarchy is as follows:

Level 1 Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities.

Level 2 Quoted prices for identical assets and liabilities in markets that are not active, quoted prices for similar assets and liabilities in active markets or financial instruments for which significant inputs are observable, either directly or indirectly.

Level 3 Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The carrying amount reflected in the accompanying consolidated balance sheets for cash and cash equivalents, accounts receivable, prepaid expenses and other current assets, other assets, accounts payable, accrued expenses and other liabilities, and deferred revenue approximates fair value due to the short duration and nature of these financial instruments.

Property and equipment

Property and equipment are generally stated at historical cost, less accumulated depreciation and amortization. Our cost basis includes property and equipment acquired in business combinations that were initially recorded at fair value as of the date of acquisition. Maintenance and repairs are charged to expense as incurred and the cost of additions and betterments that increase the useful lives of the assets are capitalized. Depreciation and amortization is computed over the estimated useful lives of the related asset type using the straight-line method.

The estimated useful lives for property and equipment are as follows:

Software	2 to 5 years
Computer equipment	3 to 5 years
Furniture, fixtures and office equipment	3 to 5 years
Leasehold improvements	The shorter of the estimated useful life or the remaining term of the agreements, generally ranging from 2 to 18 years

Leasehold improvements are principally comprised of network equipment located at various managed and operated locations, primarily airports, under exclusive, long-term, non-cancelable contracts to provide wireless communication network access. We capitalize certain costs for our network equipment during the pre-construction period, which is the period during which costs are incurred to evaluate the site and continue to capitalize costs until the network equipment is substantially completed and ready for use. Cost for network equipment includes capitalized interest.

Equipment and software under capital lease

We lease certain data communications equipment, other equipment and software under capital lease agreements. The assets and liabilities under capital lease are recorded at the lesser of the present value of aggregate future minimum lease payments, including estimated bargain purchase options, or

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

2. Summary of significant accounting policies (Continued)

the fair value of the asset under lease. Assets under capital lease are depreciated using the straight-line method over the estimated useful lives of the assets or the term of the lease agreements.

Software development costs

We capitalize costs associated with software developed or obtained for internal use when the preliminary project stage is completed, and it is determined that the software will provide significantly enhanced capabilities and modifications. These capitalized costs are included in property and equipment and include external direct cost of services procured in developing or obtaining internal-use software and personnel and related expenses for employees who are directly associated with, and who devote time to internal-use software projects. Capitalization of these costs ceases once the project is substantially complete and the software is ready for its intended use. Once the software is ready for its intended use, the costs are amortized over the useful life of the software. Post-configuration training and maintenance costs are expensed as incurred.

Long-lived assets

Intangible assets consist of acquired venue contracts, technology, advertiser relationships, non-compete agreements and patents and trademarks. We record intangible assets at fair value as of the date of acquisition and amortize these finite-lived assets over the shorter of the contractual life or the estimated useful life on a straight-line basis. We estimate the useful lives of acquired intangible assets based on factors that include the planned use of each acquired intangible asset, the expected pattern of future cash flows to be derived from each acquired intangible asset and contractual periods specified in the related agreements. We include amortization of acquired intangibles in amortization of intangible assets in the accompanying consolidated statements of operations.

We perform an impairment review of long-lived assets held and used whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors we consider important that could trigger an impairment review include but are not limited to: significant under-performance relative to projected future operating results, significant changes in the manner of our use of the acquired assets or our overall business and product strategies and significant industry or economic trends. When we determine that the carrying value of a long-lived asset may not be recoverable based upon the existence of one or more of these indicators, we determine the recoverability by comparing the carrying amount of the asset to net future undiscounted cash flows that the asset is expected to generate or other indices of fair value. We would then recognize an impairment charge equal to the amount by which the carrying amount exceeds the fair market value of the asset.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net assets acquired in connection with the acquisition of Concourse Communication Group, LLC in June 2006, Cloud 9 Wireless, Inc. in August 2012, Endeka Group, Inc. in February 2013, Electronic Media Systems, Inc. and Advanced Wireless Group, LLC in October 2013, and Elauwit Networks, LLC in August 2018.

We test goodwill for impairment in accordance with guidance provided by FASB ASC 350, *Intangibles - Goodwill and Other*. Goodwill is tested for impairment at least annually at the reporting

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2. Summary of significant accounting policies (Continued)

unit level or whenever events or changes in circumstances indicate that goodwill might be impaired. Events or changes in circumstances which could trigger an impairment review include a significant adverse change in legal factors or in the business climate, an adverse action or assessment by a regulator, unanticipated competition, a loss of key personnel, significant changes in the manner of our use of the acquired assets or the strategy for our overall business, significant negative industry or economic trends, or significant underperformance relative to expected historical or projected future results of operations. We perform our impairment test annually as of December 31st.

Entities have the option to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the goodwill impairment test described in FASB ASC 350. If, after assessing qualitative factors, an entity determines it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then performing the impairment test is unnecessary. The impairment loss, if any, is measured by comparing the implied fair value of the reporting unit goodwill with the carrying amount of goodwill.

Currently, we have one reporting unit, one operating segment and one reportable segment. At December 31, 2018 and 2017, all of the goodwill was attributed to our reporting unit. We tested our goodwill for impairment using a market-based approach and no impairment was identified as the fair value of our reporting unit was substantially in excess of its carrying amount. To date, we have not recorded any goodwill impairment charges.

Convertible debt transactions

We separately account for the liability and equity components of convertible debt instruments that can be settled in cash by allocating the proceeds from issuance between the liability component and the embedded conversion option in accordance with accounting for convertible debt instruments that may be settled in cash (including partial cash settlement) upon conversion. The value of the equity component is calculated by first measuring the fair value of the liability component, using the interest rate of a similar liability that does not have a conversion feature, as of the issuance date. The difference between the proceeds from the convertible debt issuance and the amount measured as the liability component is recorded as the equity component with a corresponding discount recorded on the debt. We recognize amortization of the resulting discount using the effective interest method as interest expense on our consolidated statements of operations. The equity component is not remeasured as long as it continues to meet the conditions for equity classification. We have allocated issuance costs incurred to the liability and equity components. Issuance costs attributable to the liability component are being amortized to expense over the respective term of the Convertible Notes, and issuance costs attributable to the equity components were netted with the respective equity component in additional paid-in capital. Simultaneously, we bought capped call options from a financial institution to minimize the impact of potential dilution of our common stock upon conversion. The premium for the capped call options was recorded as additional paid-in capital on our consolidated balance sheets as the options are settleable in our common stock.

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2. Summary of significant accounting policies (Continued)

Revenue recognition

We generate revenue from several sources including: (i) DAS customers that are telecom operators under long-term contracts for access to our DAS at our managed and operated locations, (ii) military and retail customers under subscription plans for month-to-month network access that automatically renew, and military and retail single-use access from sales of hourly, daily or other single-use access plans, (iii) arrangements with property owners for multifamily properties that provide for network installation and monthly Wi-Fi services and support to the residents and employees, (iv) arrangements with wholesale Wi-Fi customers that provide software licensing, network access, and/or professional services fees, and (v) display advertisements and sponsorships on our walled garden sign-in pages. Software licensed by our wholesale platform services customers can only be used during the term of the service arrangements and has no utility to them upon termination of the service arrangement.

Post-ASC 606 adoption

Revenues are recognized when a contract with a customer exists and control of the promised goods or services is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods or services and the identified performance obligation has been satisfied. Contracts entered into at or near the same time with the same customer are combined and accounted for as a single contract if the contracts have a single commercial objective, the amount of consideration is dependent on the price or performance of the other contract, or the services promised in the contracts are a single performance obligation. Contract amendments are routine in the performance of our DAS, wholesale Wi-Fi, and advertising contracts. Contracts are often amended to account for changes in contract specifications or requirements to expand network access services. In most instances, our DAS and wholesale Wi-Fi contract amendments are for additional goods or services that are distinct, and the contract price increases by an amount that reflects the standalone selling price of the additional goods or services; therefore, such contract amendments are accounted for as separate contracts. Contract amendments for our advertising contracts are also generally for additional goods or services that are distinct; however, the contract price does not increase by an amount that reflects the standalone selling price of the additional goods or services. Advertising contract amendments are therefore generally accounted for as contract modifications under the prospective method. Contract amendments to transaction prices with no change in remaining services are accounted for as contract modifications under the cumulative catch-up method.

A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account in ASC 606. A contract's transaction price is allocated to each distinct performance obligation and is recognized as revenue when, or as, the performance obligation is satisfied, which typically occurs when the services are rendered. Determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment. Our contracts with customers may include multiple performance obligations. For such arrangements, we allocate revenue to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers. Judgment may be used to determine the standalone selling prices for items that are not sold separately, including services provided at no additional charge. Most of our performance obligations are satisfied over time as services are provided. We generally recognize

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(In thousands, except shares and per share amounts)

2. Summary of significant accounting policies (Continued)

revenue on a gross basis as we are primarily responsible for fulfilling the promises to provide the specified goods or services, we are responsible for paying all costs related to the goods or services before they have been transferred to the customer, and we have discretion in establishing prices for the specified goods or services. Revenue is presented net of any sales and value added taxes.

Payment terms vary on a contract-by-contract basis, although terms generally include a requirement of payment within 30 to 60 days for non-recurring payments, the first day of the monthly or quarterly billing cycle for recurring payments for DAS and wholesale Wi-Fi contracts, and the first day of the month prior to the month that services are provided for multifamily contracts. We apply a practical expedient for purposes of determining whether a significant financing component may exist for our contracts if, at contract inception, we expect that the period between when we transfer the promised good or service to the customer and when the customer pays for that good or service will be one year or less. In instances where the customer pays for a good or service one year or more in advance of the period when we transfer the promised good or service to the customer, we have determined our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is not to receive financing from our customers or to provide customers with financing but rather to maximize our profitability on the customer contract. Specifically, inclusion of non-refundable upfront fees in our long-term customer contracts increases the likelihood that the customer will be committed through the end of the contractual term and ensures recoverability of the capital outlay that we incur in expectation of the customer fulfilling its contractual obligations. We may also provide service credits to our customers if we fail to meet contractual monthly system uptime requirements and we account for the variable consideration related to these service credits using the most likely amount method.

For contracts that include variable consideration, we estimate the amount of consideration at contract inception under the expected value method or the most likely amount method and include the amount of variable consideration that is not considered to be constrained. Significant judgment is used in constraining estimates of variable consideration. We update our estimates at the end of each reporting period as additional information becomes available.

Timing of revenue recognition may differ from the timing of invoicing to customers. We record unbilled receivables (contract assets) when revenue is recognized prior to invoicing, deferred revenue (contract liabilities) when revenue is recognized after invoicing, and receivables when we have an unconditional right to consideration to invoice and receive payment in the future. We present our DAS, multifamily, and wholesale Wi-Fi contracts in our consolidated balance sheet as either a contract asset or a contract liability with any unconditional rights to consideration presented separately as a receivable. Our other customer contracts generally do not have any significant contract asset or contract liability balances. Generally, a significant portion of the billing for our DAS contracts occurs prior to revenue recognition, resulting in our DAS contracts being presented as contract liabilities. In contrast, our wholesale Wi-Fi contracts that contain recurring fees with annual escalations are generally presented as contract assets as revenue is recognized prior to invoicing. Our multifamily contracts can be presented as either contract liabilities or contract assets primarily as a result of timing of invoicing for the network installations.

We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales

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2. Summary of significant accounting policies (Continued)

incentive programs meet the requirements to be capitalized. Total capitalized costs to obtain a contract were immaterial during the year ended December 31, 2018 and are included in prepaid expenses and other current assets and non-current other assets on our consolidated balance sheets. We apply a practical expedient to expense costs as incurred for costs to obtain a contract with a customer when the amortization period would have been one year or less, the most significant of which relates to sales commissions related to obtaining our advertising customer contracts. Contract costs are evaluated for impairment in accordance with ASC 310, *Receivables*.

DAS

We enter into long-term contracts with telecom operators at our managed and operated locations. The initial term of our contracts with telecom operators generally range from five to twenty years and the agreements generally contain renewal options. Some of our contracts provide termination for convenience clauses that may or may not include substantive termination penalties. We apply judgment in determining the contract term, the period during which we have present and enforceable rights and obligations. Our DAS customer contracts generally contain a single performance obligation provide non-exclusive access to our DAS or small cell networks to provide telecom operators' customers with access to the licensed wireless spectrum, together with providing telecom operators with construction, installation, optimization/engineering, maintenance services and agreed-upon storage space for the telecom operators' transmission equipment, each related to providing such licensed wireless spectrum to the telecom operators. The performance obligation is considered a series of distinct services as the performance obligation is satisfied over time and the same time-based input method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer. Our contract fee structure generally includes a non-refundable upfront fee and we evaluated whether customer options to renew services give rise to a material right that should be accounted for as a separate performance obligation because of those non-refundable upfront fees. We believe that a material right generally does not exist for our DAS customer contracts that contain renewal options because the telecom operators' decision to renew is highly dependent upon our ability to maintain our exclusivity as the DAS service provider at the venue location and our limited operating history with venue and customer renewals. The telecom operators will make the decision to incur the capital improvement costs at the venue location irrespective of our remaining exclusivity period with the venue as the telecom operators expect that the assets will continue to be serviced regardless of whether we will remain such exclusive DAS service provider. Our contracts also provide our DAS customers with the option to purchase additional future services such as upgrades or enhancements. This option is not considered to provide the customer with a material right that should be accounted for as a separate performance obligation since the cost of the additional future services depends entirely on the market rate of such services at the time such services are requested and we are not automatically obligated to stand ready to deliver these additional goods or services as the customer may reject our proposal. Periodically, we install and sell DAS networks to customers where we do not have service contracts or remaining obligations beyond the installation of those networks and we recognize build-out fees for such projects as revenue when the installation work is completed, and the network has been accepted by the customer.

Our contract fee structure may include varying components of an upfront build-out fee and recurring access, maintenance, and other fees. The upfront build-out fee is generally structured as a

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2. Summary of significant accounting policies (Continued)

firm-fixed price or cost-plus arrangement and becomes payable as certain contract and/or construction milestones are achieved. Our DAS and small cell networks are neutral-host networks that can accommodate multiple telecom operators. Some of our DAS customer contracts provide for credits that may be issued to existing telecom operators for additional telecom operators subsequently joining the DAS network. The credits are generally based upon a fixed dollar amount per additional telecom operator, a fixed percentage amount of the original build-out fee paid by the telecom operator per additional telecom operator, or a proportionate share based upon the split among the relevant number of telecom operators for the actual costs incurred by all telecom operators to construct the DAS network. In most cases, there is significant uncertainty on whether additional telecom operator contracts will be executed at inception of the contract with the existing telecom operator. We believe that the upfront build-out fee is fixed consideration once the build-out is complete and any subsequent credits that may be issued would be accounted for in a manner similar to a contract modification under the prospective method because (i) the execution of customer contracts with additional telecom carriers is at our sole election and (ii) we would not execute agreements with additional telecom carriers if it would not increase our revenues and gross profits at the venue level. Further, the credits issued to the existing telecom operator changes the transaction price on a go-forward basis, which corresponds with the decline in service levels for the existing telecom operator once the neutral-host DAS network can be accessed by the additional telecom operator. The recurring access, maintenance, and other fees generally escalate on an annual basis. The recurring fees are variable consideration until the contract term and annual escalation dates are fixed. We estimate the variable consideration for our recurring fees using the most likely amount method based on the expected commencement date for the services. We evaluate our estimates of variable consideration each period and record a cumulative catch-up adjustment in the period in which changes occur for the amount allocated to satisfied performance obligations.

We generally recognize revenue related to our single performance obligation for our DAS customer contract monthly over the contract term once the customer has the ability to access the DAS network and we commence maintenance on the DAS network.

Military and retail

Military and retail customers must review and agree to abide by our standard "Customer Agreement (With Acceptable Use Policy) and End User License Agreement" before they are able to sign-up for our subscription or single-use Wi-Fi network access services. Our military and retail customer contracts generally contain a single performance obligation provide non-exclusive access to Wi-Fi services, together with performance of standard maintenance, customer support, and the Wi-Finder app to facilitate seamless connection to the Company's Wi-Fi network. The performance obligation is considered a series of distinct services as the performance obligation is satisfied over time and the same time-based input method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer. Our contracts also provide our military and retail subscription customers with the option to renew the agreement when the subscription term is over. We do not consider this option to provide the customer with a material right that should be accounted for as a separate performance obligation because the customer would not receive a discount if it decided to renew and the option to renew is cancellable within 5 days' notice prior to the end of the then current term by either party.

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2. Summary of significant accounting policies (Continued)

The contract transaction price is determined based on the subscription or single-use plan selected by the customer. Our military and retail service plans are for fixed price services as described on our website. From time to time, we offer promotional discounts that result in an immediate reduction in the price paid by the customer. Subscription fees from military and retail customers are paid monthly in advance. We provide refunds for our military and retail services on a case-by-case basis. Refunds and credit card chargeback amounts are not significant and are recorded as contra-revenue in the period the refunds are made, or chargebacks are received.

Subscription fee revenue is recognized ratably over the subscription period. Revenue generated from military and retail single-use access is recognized when access is provided, and the performance obligation is satisfied.

Multifamily

We enter into long-term contracts with property owners. The initial term of our contracts with property owners generally range from three to five years and the contracts may contain renewal options. Some of our contracts provide termination for convenience clauses that may or may not include substantive termination penalties. We apply judgment in determining the contract term, which is the period during which we have present and enforceable rights and obligations. Our customer contracts generally contain two performance obligations: (i) install the network required to provide Wi-Fi services; and (ii) provide Wi-Fi services and technical support to the residents and employees. Our contracts may also provide our property owners with the option to renew the agreement. We do not consider this option to provide the property owner with a material right that should be accounted for as a separate performance obligation because the property owner would not receive a discount if it decided to renew and the option to renew is generally cancellable by either party subject to the notice of non-renewal requirements specified in the contract. Our contracts may also provide our customers with the option to purchase additional future services. We do not consider this option to provide the customer with a material right that should be accounted for as a separate performance obligation since the cost of the additional future services are generally at market rates for such services and we are not automatically obligated to stand ready to deliver these additional goods or services because the customer may reject our proposal.

Our contract fee structure includes a network installation fee and recurring Wi-Fi service and support fees. The network installation fee is generally structured as a firm-fixed price arrangement and becomes payable as certain contract and/or installation milestones are achieved. We generally estimate variable consideration for unpriced change orders using the most likely amount method based on the expected price for those services. If network installations are not completed by specified dates, we may be subject to network installation penalties. We estimate the variable consideration for our network installation fees using the most likely amount method based on the amount of network installation penalties we expect to incur. Title to the network generally transfers to the property owner once installation is completed and the network has been accepted. We generally recognize revenue related to our network installation performance obligation using a cost-to-cost method over the network installation period. We may provide latent defect warranties for materials and installation labor services related to our network installation services. Our warranty obligations are generally not accounted for as

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Boingo Wireless, Inc.

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2. Summary of significant accounting policies (Continued)

separate performance obligations as warranties cannot be separately purchased and warranties do not provide a service in addition to the assurance that the network will function as expected.

The recurring fees commence once the network is launched with recurring fees generally based upon a fixed or variable occupancy rate. The recurring Wi-Fi service fees may be adjusted prospectively for changes in circuit and/or video content costs, and Wi-Fi support fees may escalate on an annual basis. We estimate the variable consideration for our recurring fees using the expected value method with the exception of the variable consideration related to actual occupancy rates, which we record when we have the contractual right to bill. We evaluate our estimates of variable consideration each period and record a cumulative catch-up adjustment in the period in which changes occur for the amount allocated to satisfied performance obligations. We recognize revenue related to the recurring fees on a monthly basis over the contract term as the Wi-Fi services and support is rendered, and the performance obligation is satisfied.

Wholesale Wi-Fi

We enter into long-term contracts with enterprise customers such as telecom operators, cable companies, technology companies, and enterprise software/services companies, that pay us usage-based Wi-Fi network access and software licensing fees to allow their customers' access to our footprint worldwide. We also enter into long-term contracts with financial institutions and other enterprise customers who provide access to our Wi-Fi footprint as a value-added service for their customers. The initial term of our contracts with wholesale Wi-Fi customers generally range from one to three years and the agreements generally contain renewal options. Some of our contracts provide termination for convenience clauses that may or may not include substantive termination penalties. We apply judgment in determining the contract term, the period during which we have present and enforceable rights and obligations. Our wholesale Wi-Fi customer contracts generally contain a single performance obligation provide non-exclusive rights to access our Wi-Fi networks to provide wholesale Wi-Fi customers' end customers with access to the high-speed broadband network that may be bundled together with integration services, support services, and/or performance of standard maintenance. The performance obligation is considered a series of distinct services as the performance obligation is satisfied over time and the same time-based input method or usage-based output method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer. Our contracts may also provide our enterprise customers with the option to renew the agreement. This option is not considered to provide the customer with a material right that should be accounted for as a separate performance obligation because the customer would not receive a discount if it decided to renew and the option to renew is generally cancellable by either party subject to the notice of non-renewal requirements specified in the contract. Our contracts may also provide our wholesale Wi-Fi customers with the option to purchase additional future services. We do not consider this option to provide the customer with a material right that should be accounted for as a separate performance obligation since the cost of the additional future services are generally at market rates for such services and we are not automatically obligated to stand ready to deliver these additional goods or services because the customer may reject our proposal. Periodically, we install and sell Wi-Fi networks to customers where we do not have service contracts or remaining obligations beyond the installation of those networks and we recognize build-out fees for

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2. Summary of significant accounting policies (Continued)

such projects as revenue when the installation work is completed, and the network has been accepted by the customer.

Our contract fee structure may include varying components of a minimum fee and usage-based fees. Minimum fees represent fixed price consideration while usage-based fees represent variable consideration. With respect to variable consideration, our commitment to our wholesale Wi-Fi customers consists of providing continuous access to the network. It is therefore a single performance obligation to stand ready to perform and we allocate the variable fees charged for usage when we have the contractual right to bill. The variable component of revenue is recognized based on the actual usage during the period.

Wholesale Wi-Fi revenue is recognized as it is earned over the relevant contract term with variable consideration recognized when we have the contractual right to bill.

Advertising

We generally enter into short-term cancellable insertion orders with our advertising customers for advertising campaigns that are served at our managed and operated locations and other locations where we solely provide authorized access to a partner's Wi-Fi network through sponsored and promotional programs. Our sponsorship advertising arrangements are generally priced under a cost per engagement structure, which is a set price per click or engagement, or a cost per install structure for third party application downloads. Our display advertising arrangements are priced based on cost per thousand impressions. Insertion orders may also include bonus items. Our advertising customer contracts may contain multiple performance obligations with each distinct service. These distinct services may include an advertisement video or banner impressions in the contract bundled with the requirement to provide network, space on the website, and integration of customer advertisement onto the website, and each is generally considered to be its own performance obligation. The performance obligations are considered a series of distinct services as the performance obligations are satisfied over time and the same action-based output method would be used to measure our progress toward complete satisfaction of the performance obligation to transfer each distinct service in the series to the customer.

The contract transaction price is comprised of variable consideration based on the stated rates applied against the number of units delivered inclusive of the bonus units subject to the maximums provided for in the insertion order. It is customary for us to provide additional units over and above the amounts contractually required; however, there are a number of factors that can also negatively impact our ability to deliver the units required by the customer such as service outages at the venue resulting from power or circuit failures and customer cancellation of the remaining undelivered units under the insertion order due to campaign performance or budgetary constraints. Typically, the advertising campaign periods are short in duration. We therefore use the contractual rates per the insertion orders and actual units delivered to determine the transaction price each period end. The transaction price is allocated to each performance obligation based on the standalone selling price of each performance obligation.

Advertising revenue is recognized ratably over the service period based on actual units delivered subject to the maximums provided for in the insertion order.

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2. Summary of significant accounting policies (Continued)

Pre-ASC 606 adoption

We recognize revenue when an arrangement exists, services have been rendered, fees are fixed or determinable, no significant obligations remain related to the earned fees and collection of the related receivable is reasonably assured. Revenue is presented net of any sales and value added taxes.

Revenue generated from access to our DAS networks consists of build-out fees and recurring access fees under certain long-term contracts with telecom operators. Build-out fees paid upfront are generally deferred and recognized ratably over the term of the estimated customer relationship period, once the build-out is complete. Periodically, we install and sell Wi-Fi and DAS networks to customers where we do not have service contracts or remaining obligations beyond the installation of those networks and we recognize build-out fees for such projects as revenue when the installation work is completed, and the network has been accepted by the customer. Minimum monthly access fees for usage of the DAS networks are non-cancellable and generally escalate on an annual basis. These minimum monthly access fees are recognized ratably over the term of the telecom operator agreement. The initial term of our contracts with telecom operators generally range from five to twenty years and the agreements generally contain renewal clauses. Revenue from DAS network access fees in excess of the monthly minimums is recognized when earned.

Subscription fees from military and retail customers are paid monthly in advance and revenue is deferred for the portions of monthly recurring subscription fees collected in advance. We provide refunds for our military and retail services on a case-by-case basis. These amounts are not significant and are recorded as contra-revenue in the period the refunds are made. Subscription fee revenue is recognized ratably over the subscription period. Revenue generated from military and retail single-use access is recognized when access is provided.

Services provided to wholesale Wi-Fi partners generally contain several elements including: (i) a term license to use our software to access our Wi-Fi network, (ii) access fees for Wi-Fi network usage, and/or (iii) professional services for software integration and customization and to maintain the Wi-Fi service. The term license, monthly minimum network access fees and professional services are billed monthly based upon predetermined fixed rates. Once the term license for integration and customization are delivered, the fees from the arrangement are recognized ratably over the remaining term of the service arrangement. The initial term of the license agreements is generally between one to three years and the agreements generally contain renewal clauses. Revenue for Wi-Fi network access fees in excess of the monthly minimum amounts is recognized when earned. All elements within existing service arrangements are generally delivered and earned concurrently throughout the term of the respective service arrangement.

In instances where the minimum monthly Wi-Fi and DAS network access fees escalate over the term of the wholesale service arrangement, an unbilled receivable is recognized when performance is within our control and when we have reasonable assurance that the unbilled receivable balance will be collected.

We adopted the provisions of ASU 2009-13, *Revenue Recognition (Topic 605) Multiple-Deliverable Revenue Arrangements*, on a prospective basis on January 1, 2011. For multiple-deliverable arrangements entered into prior to January 1, 2011 that are accounted for under ASC 605-25, *Revenue Recognition Multiple-Deliverable Revenue Arrangements*, we defer recognition of revenue for the full arrangement

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2. Summary of significant accounting policies (Continued)

and recognize all revenue ratably over the term of the estimated customer relationship period for DAS arrangements and the wholesale service period for Wi-Fi platform service arrangements, as we do not have evidence of fair value for the undelivered elements in the arrangement. For multiple-deliverable arrangements entered into or materially modified after January 1, 2011 that are accounted for under ASC 605-25, we evaluate whether separate units of accounting exist and then allocate the arrangement consideration to all units of accounting based on the relative selling price method using estimated selling prices if vendor specific objective evidence and third-party evidence is not available. We recognize the revenue associated with the separate units of accounting upon completion of such services or ratably over the term of the estimated customer relationship period for DAS arrangements and the wholesale service period for Wi-Fi platform service arrangements.

Advertising revenue is generated from advertisements on our managed and operated or partner networks. In determining whether an arrangement exists, we ensure that a binding arrangement is in place, such as a standard insertion order or a fully executed customer-specific agreement. Obligations pursuant to our advertising revenue arrangements typically include a minimum number of units or the satisfaction of certain performance criteria. Advertising and other revenue is recognized when the services are performed.

Foreign currency translation

Our Brazilian subsidiary uses the Brazilian Real as its functional currency. Assets and liabilities of our Brazilian subsidiary are translated to U.S. dollars at period-end rates of exchange, and revenues and expenses are translated at average exchange rates prevailing for each month. The resulting translation adjustments are made directly to a separate component of other comprehensive loss, which is reflected in stockholders' equity in our consolidated balance sheets. As of December 31, 2018 and December 31, 2017, the Company had \$(1,295) and \$(898), respectively, of cumulative foreign currency translation adjustments, net of tax, which was \$0 as of December 31, 2018 and December 31, 2017 due to the full valuation allowance established against our deferred tax assets, in accumulated other comprehensive loss.

The functional currency for all of our other foreign subsidiaries is the U.S. dollar. Gains and losses from the revaluation of foreign currency transactions and monetary assets and liabilities are included in the consolidated statements of operations.

Network access

Network access costs consist primarily of revenue share payments to venue owners where our managed and operated hotspots are located, usage-based fees to our roaming network partners for access to their networks, depreciation of equipment related to network build-out projects in our managed and operated locations, and bandwidth and other Internet connectivity expenses in our managed and operated locations.

Advertising, marketing and promotion costs

Advertising production costs are expensed the first time the advertisement is run. No advertising production costs were capitalized for the years ended December 31, 2018, 2017 and 2016. All other costs of advertising, marketing and promotion are expensed as incurred. Advertising expenses charged to operations totaled \$2,213, \$2,245 and \$1,925 for the years ended December 31, 2018, 2017 and 2016, respectively.

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2. Summary of significant accounting policies (Continued)

Stock-based compensation

Our stock-based compensation consists of stock options, and restricted stock units ("RSU") granted to employees and non-employees. We have shifted our stock-based compensation from stock options to RSUs and no stock options have been granted since 2014.

We recognize stock-based compensation expense in accordance with guidance provided by FASB ASC 718, *Compensation - Stock Compensation*. We measure employee stock-based compensation cost at grant date, based on the estimated fair value of the award and recognize the cost on a straight-line basis over the employee requisite service period. We recognize stock-based compensation expense for performance-based RSUs when we believe that it is probable that the performance objectives will be met. Forfeitures are accounted for when they occur.

Income taxes

We account for income taxes in accordance with FASB ASC 740, *Accounting for Income Taxes*, which requires the recognition of deferred tax assets and liabilities for the future consequences of events that have been recognized in our accompanying consolidated financial statements or tax returns. The measurement of the deferred items is based on enacted tax laws. In the event the future consequences of differences between financial reporting bases and the tax bases of our assets and liabilities result in a deferred tax asset, ASC 740 requires an evaluation of the probability of being able to realize the future benefits indicated by such asset. A valuation allowance related to a deferred tax asset is recorded when it is more likely than not that some portion or the entire deferred tax asset will not be realized. As part of the process of preparing our accompanying consolidated financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. We also assess temporary differences resulting from differing treatment of items, such as deferred revenue, for tax and accounting differences. We record a valuation allowance to reduce the deferred tax assets to the amount of future tax benefit that is more likely than not to be realized.

ASC 740 prescribes a recognition threshold and measurement methodology to recognize and measure an income tax position taken, or expected to be taken, in a tax return. The evaluation of a tax position is based on a two-step approach. The first step requires an entity to evaluate whether the tax position would "more likely than not" be sustained upon examination by the appropriate taxing authority. The second step requires the tax position be measured at the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate settlement. In addition, previously recognized benefits from tax positions that no longer meet the new criteria would no longer be recognized. Changes in recognition or measurement are reflected in the period in which the change occurs.

Non-controlling interests

Non-controlling interests are comprised of minority holdings in Chicago Concourse Development Group, LLC ("CCDG") and Boingo Holding Participacoes Ltda ("BHPL").

Under the terms of the LLC agreement for CCDG, we are generally required to distribute annually to the CCDG non-controlling interest holders 30% of allocated net profits less capital

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****2. Summary of significant accounting policies (Continued)**

expenditures of the preceding year. For the years ended December 31, 2018, 2017 and 2016, we made distributions of \$614, \$125 and \$286, respectively, to non-controlling interest holders of CCDG.

Under the terms of the LLC agreement for BHPL, we attributed profits and losses to the non-controlling interest in BHPL in proportion to their holdings. For the years ended December 31, 2018, 2017 and 2016, we made no distributions to the non-controlling interest holder of BHPL.

Net loss per share attributable to common stockholders

Basic net loss per share attributable to common stockholders is calculated by dividing loss attributable to common stockholders by the weighted average number of shares of common stock outstanding during the period. Diluted net loss per share attributable to common stockholders adjusts the basic weighted average number of shares of common stock outstanding for the potential dilution that could occur if stock options and RSUs were exercised or converted into common stock. Our common stockholders are not entitled to receive any dividends.

Segment and geographic information

We operate as one reportable segment; a service provider of wireless connectivity solutions across our managed and operated network and aggregated network for mobile devices such as laptops, smartphones, tablets and other wireless-enabled consumer devices. This single segment is consistent with the internal organization structure and the manner in which operations are reviewed and managed by our Chief Executive Officer, the chief operating decision maker.

All significant long-lived tangible assets are held in the United States of America. We do not disclose sales by geographic area because to do so would be impracticable.

The following is a summary of our revenue disaggregated by product offerings:

	Year Ended December 31,		
	2018	2017(1)	2016(1)
Revenue:			
DAS	\$ 95,216	\$ 80,552	\$ 58,182
Military/multifamily	77,721	55,129	39,975
Wholesale Wi-Fi	47,481	31,529	22,221
Retail	17,630	24,926	26,636
Advertising and other	12,773	12,233	12,330
Total revenue	\$ 250,821	\$ 204,369	\$ 159,344

(1)

As noted above, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

Recent accounting pronouncements

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In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud*

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

2. Summary of significant accounting policies (Continued)

Computing Arrangement That Is a Service Contract, which requires customers to apply the same criteria for capitalizing implementation costs incurred in a cloud computing arrangement that is hosted by the vendor as they would for an arrangement that has a software license. The standard is effective for interim and annual periods beginning after December 15, 2019 and early adoption is permitted. The standard can be adopted prospectively or retrospectively. We are currently evaluating the expected impact of this new standard.

In June 2018, the FASB issued ASU 2018-07, *Improvements to Nonemployee Share-Based Payment Accounting*, which eliminates the separate accounting model for nonemployee share-based payment awards and generally requires companies to account for share-based payment transactions with nonemployees in the same way as share-based payment transactions with employees. The accounting remains different for attribution, which represents how the equity-based payment cost is recognized over the vesting period, and a contractual term election for valuing nonemployee equity share options. The standard is effective for interim and annual periods beginning after December 15, 2018. Early adoption is permitted for all entities on a modified retrospective basis. We currently do not expect that this standard will have a material impact on our consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, which requires lessees to recognize assets and liabilities for all leases with lease terms of more than 12 months on the balance sheet. Under the new guidance, the recognition, measurement, and presentation of expenses and cash flows arising from a lease by a lessee will depend on its classification as a finance or operating lease. The standard is effective for interim and annual periods beginning after December 15, 2018 with early adoption permitted. We have selected January 1, 2019 as our effective date. ASU 2016-02 provided for the adoption of the new leases standard using a modified retrospective transition method. In July 2018, the FASB issued ASU 2018-11, *Leases (Topic 842): Targeted Improvements*, which provided an additional (and optional) transition method to adopt the new leases standard whereby an entity initially applies the new leases standard at the adoption date and recognizes a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We expect to adopt the provisions of ASU 842 under the optional transition method prescribed under ASU 2018-11. We are completing our evaluation of the impact of the new standard on our accounting policies, processes, and system requirements. We have assigned internal resources and engaged a third-party service provider to assist in the evaluation and implementation. Based on the lease portfolio as of December 31, 2018, we anticipate recording additional lease assets and lease liabilities on our consolidated balance sheets. As presented in Note 15, as of December 31, 2018, our total undiscounted minimum payments under our operating leases were \$26,158.

3. Acquisitions

Elauwit Networks, LLC

On August 1, 2018, we acquired the assets of Elauwit Networks, LLC ("Elauwit") for \$28,000 plus other contingent consideration. Elauwit provides data and video services to multi-unit dwelling properties including student housing, condominiums, apartments, senior living, and hospitality industries throughout the U.S. In addition, Elauwit builds and maintains the network that supports these services for property owners and managers and provides support for residents and employees.

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

3. Acquisitions (Continued)

The acquisition has been accounted for under the acquisition method of accounting in accordance with FASB ASC 805, *Business Combinations*. As such, the assets acquired and liabilities assumed are recorded at their acquisition-date fair values. The total purchase price was \$29,537, which includes contingent consideration fair valued at \$961. At the closing date, we paid cash of \$15,576. \$13,000 of the purchase price was held back for the following: (i) \$11,000 held back for third-party consents not obtained at closing for certain customer agreements, which will be released as Elauwit delivers third-party consents with respect to such customer agreements; and (ii) a \$2,000 indemnification holdback that is being retained for a period of 12 months following the closing of the acquisition. As of December 31, 2018, we paid \$9,048 of the amounts held back for third-party consents. We paid the remaining \$1,952 for amounts held back for third-party consents in January 2019. The contingent consideration could require payments in the aggregate amount of up to \$15,000 that would be due and payable subject to certain conditions and the successful achievement of annual revenue targets for the acquired business during the 2019 and 2020 fiscal years. We do not expect to make any payments related to the 2018 annual revenue targets as the targets were not met as of December 31, 2018. The contingent consideration is subject to acceleration under certain corporate events.

The fair value of the contingent consideration is based on Level 3 inputs. Further changes in the fair value of the contingent consideration will be recorded through operating income (loss). The contingent consideration was valued at the date of acquisition using the Monte Carlo method reflecting the average expected monthly revenue, an annual risk-free rate of 2.78%, and an annual revenue volatility rate of 40%.

The identifiable intangible assets were primarily valued using the excess earnings, relief from royalty, and loss-of-revenue methods using discount rates ranging from 8.0% to 21.0% and a 1.0% royalty rate, where applicable. The amortizable intangible assets are being amortized on a straight-line basis over their estimated useful lives. We allocated the excess of the purchase price over the fair value of assets acquired and liabilities assumed to goodwill, which is deductible for tax purposes. The goodwill arising from the Elauwit acquisition is attributable primarily to expected synergies and other benefits, including the acquired workforce, from combining Elauwit with us.

ASC 805 provides for a measurement period not to exceed one year from the acquisition date to adjust the provisional amounts recognized at the acquisition date to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the measurement of the amounts recognized as of that date. To date, we have not recorded any

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****3. Acquisitions (Continued)**

material measurement period adjustments. The following summarizes the preliminary purchase price allocation:

	Estimated Fair Value	Weighted Average Estimated Useful Life (years)
Consideration:		
Cash paid	\$ 15,576	
Holdback consideration	13,000	
Contingent consideration	961	
Total consideration	\$ 29,537	
Recognized amounts of identifiable assets acquired and liabilities assumed:		
Accounts receivable	\$ 4,494	
Prepaid expenses and other current assets	1,687	
Property and equipment	195	
Other non-current assets	177	
Accounts payable	(2,049)	
Accrued expenses and other liabilities	(683)	
Deferred revenue	(3,854)	
Other non-current liabilities	(307)	
Net tangible liabilities acquired	(340)	
Backlog	7,030	5.0
Customer relationships	2,490	10.0
Partner relationships	1,200	10.0
Transition services agreement	540	2.0
Non-compete agreement	1,380	3.0
Goodwill	17,237	
Total purchase price	\$ 29,537	

The following table presents the results of Elauwit included in the Company's revenue and net loss:

	Year Ended December 31,		
	2018	2017	2016
Revenue	\$ 11,228	\$	\$
Net loss	(2,349)		

Pro forma results (Unaudited)

The following table presents the unaudited pro forma results of the Company for the years ended December 31, 2018 and 2017 as if the acquisition of Elauwit had occurred on January 1, 2017 and therefore includes Elauwit's revenue and net income (loss), as adjusted, for those

periods. These results

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Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****3. Acquisitions (Continued)**

are not intended to reflect the actual operations of the Company had the acquisition occurred on January 1, 2017. Income taxes were calculated based on the effective tax rates for 2018 and 2017, excluding the tax effects on the equity component of Convertible Notes recorded in 2018. Acquisition transaction costs have been excluded from the pro forma net loss.

	Year Ended December 31,	
	2018	2017(2)
Revenue	\$ 268,693	\$ 229,503
Net loss	(739)	(20,827)
Net loss attributable to common stockholders	(2,224)	(21,417)
Net loss per share attributable to common stockholders		
Basic	\$ (0.05)	\$ (0.54)
Diluted	\$ (0.05)	\$ (0.54)

(2)

As noted above, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

4. Cash and cash equivalents

Cash and cash equivalents consisted of the following:

	December 31,	
	2018	2017
Cash and cash equivalents:		
Cash	\$ 11,689	\$ 24,430
Money market accounts	137,723	2,255
Total cash and cash equivalents	\$ 149,412	\$ 26,685

For the years ended December 31, 2018, 2017 and 2016, interest income was \$742, \$17 and \$8, respectively, which is included in interest and other expense, net in the accompanying consolidated statements of operations.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****5. Accounts receivables, net**

Included in accounts receivables, net for the periods indicated was the allowance for doubtful accounts, which consisted of the following:

	Allowance for Doubtful Accounts	
Balance, December 31, 2015	\$	605
Additions charged to operations		116
Deductions from reserves, net		(279)
 Balance, December 31, 2016		 442
Additions charged to operations		773
Deductions from reserves, net		(352)
 Balance, December 31, 2017		 863
Additions charged to operations		363
Deductions from reserves, net		(43)
 Balance, December 31, 2018	 \$	 1,183

6. Contract assets and contract liabilities

The opening and closing balances of our contract asset, net, contract liability, net, and receivables balances from contracts with customers for the year ended December 31, 2018 are as follows:

	Contract Assets, Net		Contract Liabilities, Net	
Balance at January 1, 2018	\$	798	\$	204,472
Balance at December 31, 2018		468		217,733
 Change	 \$	 (330)	 \$	 13,261

The current and non-current portions of our contract assets, net is included within prepaid expenses and other current assets and other assets, respectively, and current and non-current portions of our contract liabilities, net are included within deferred revenue and deferred revenue, net of current portion, respectively, in our consolidated balance sheets. Contract assets, net is generated from our multifamily and wholesale Wi-Fi contracts and the change in the contract assets, net balance includes activity related to amounts acquired from the Elauwit acquisition and amounts invoiced offset by revenue recognized from performance obligations satisfied in the current reporting period.

Contract liabilities are recorded when fees are collected, or we have an unconditional right to consideration (a receivable) in advance of delivery of goods or services. The change in contract liabilities, net balance is related to amounts acquired from the Elauwit acquisition and customer activity associated with each of our product offerings including the receipt of cash payments and the

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****6. Contract assets and contract liabilities (Continued)**

satisfaction of our performance obligations. Revenues for the year ended December 31, 2018 include the following:

	Year Ended December 31, 2018
Amounts included in the beginning of period contract liability balance	\$ 85,592
Amounts associated with performance obligations satisfied in previous periods	378

As of December 31, 2018, the aggregate amount of the transaction price allocated to remaining service performance obligations for our DAS contracts was \$202,113. We expect to recognize this revenue as service is provided over the remaining contract term. As of December 31, 2018, our DAS contracts have a remaining duration of less than one year to sixteen years.

Certain of our wholesale Wi-Fi contracts include variable consideration based on usage. This variable consideration has been excluded from the disclosure of remaining performance obligations. As of December 31, 2018, the aggregate amount of the transaction price allocated to remaining service performance obligations for certain of our wholesale Wi-Fi contracts with guaranteed minimum consideration was \$9,999. We expect to recognize this revenue as service is provided over the remaining contract term. As of December 31, 2018, our wholesale Wi-Fi contracts have a remaining duration of less than one year to sixteen years.

Information about remaining performance obligations that are part of a contract that has an original expected duration of one year or less have been excluded from the above, which primarily consists of network installations for our multifamily customers and monthly service contracts.

7. Property and equipment

The following is a summary of property and equipment, at cost less accumulated depreciation and amortization:

	December 31,	
	2018	2017
Leasehold improvements	\$ 474,808	\$ 418,023
Software	51,534	42,281
Construction in progress	40,369	27,291
Computer equipment	14,215	13,245
Furniture, fixtures and office equipment	2,141	1,806
Total property and equipment	583,067	502,646
Less: accumulated depreciation and amortization	(268,888)	(240,287)
Total property and equipment, net	\$ 314,179	\$ 262,359

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****7. Property and equipment (Continued)**

Included in property and equipment at December 31, 2018 and 2017 was equipment acquired under capital leases totaling \$16,284 and \$12,714, respectively, and related accumulated depreciation and amortization of \$6,245 and \$3,744, respectively.

Depreciation and amortization expense, which includes depreciation and amortization for property and equipment under capital leases, is allocated on a specific identification basis as follows on the accompanying consolidated statements of operations:

	Year Ended December 31,		
	2018	2017	2016
Network access	\$ 49,766	\$ 42,435	\$ 27,013
Network operations	17,590	16,382	13,966
Development and technology	10,443	9,247	7,207
General and administrative	1,038	1,033	1,016
Total depreciation and amortization of property and equipment	\$ 78,837	\$ 69,097	\$ 49,202

During the years ended December 31, 2018, 2017, and 2016 we recognized \$148, \$882, and \$54, respectively, of impairment losses primarily related to construction in progress projects that were abandoned. During the years ended December 31, 2018 and 2017, we also recognized \$90 and \$276, respectively, of losses on disposals of property and equipment.

8. Goodwill and intangible assets**Goodwill**

The following table sets forth the changes in our goodwill balance, for all periods presented:

	Goodwill
Balance, December 31, 2016 and December 31, 2017	\$ 42,403
Acquisition of Elauwit	17,237
Balance, December 31, 2018	\$ 59,640

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****8. Goodwill and intangible assets (Continued)****Intangible assets**

The following table sets forth the changes in our intangible assets balance, for all periods presented:

	Intangible Assets	
Balance, December 31, 2016	\$	13,783
Amortization expense		(3,520)
Balance, December 31, 2017		10,263
Additions		12,640
Amortization expense		(3,751)
Balance, December 31, 2018	\$	19,152

Intangible assets at December 31, 2018 consist of the following:

	Historical Cost	Accumulated Amortization	Net
Venue contracts	\$ 20,530	\$ (13,829)	\$ 6,701
Backlog	7,030	(586)	6,444
Customer and partner relationships	3,780	(206)	3,574
Non-compete agreements, technology and other	5,084	(2,651)	2,433
	\$ 36,424	\$ (17,272)	\$ 19,152

Intangible assets at December 31, 2017 consist of the following:

	Historical Cost	Accumulated Amortization	Net
Venue contracts	\$ 22,061	\$ (13,835)	\$ 8,226
Non-compete agreements, technology and other	6,844	(4,807)	2,037
	\$ 28,905	\$ (18,642)	\$ 10,263

The decrease in our intangible assets cost and accumulated amortization balances from 2017 to 2018 is primarily related to the write-off of venue contract intangible assets that have expired.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****8. Goodwill and intangible assets (Continued)**

Amortization expense for fiscal years 2019 through 2023 and thereafter is as follows:

Year	Amortization Expense
2019	\$ 4,435
2020	4,221
2021	3,494
2022	3,030
2023	1,863
Thereafter	2,109
	\$ 19,152

9. Accrued expenses and other liabilities

Accrued expenses and other liabilities consisted of the following:

	December 31,	
	2018	2017
Accrued construction in progress	\$ 20,930	\$ 12,661
Accrued customer liabilities	15,219	7,100
Revenue share	5,514	5,506
Salaries and wages	4,425	5,066
Accrued taxes	2,745	1,897
Holdback consideration	2,000	
Acquisition purchase consideration	1,952	
Accrued professional fees	1,434	1,979
Accrued partner network	1,228	1,799
Other	7,206	6,397
Total accrued expenses and other liabilities	\$ 62,653	\$ 42,405

10. Convertible Notes

In October 2018, the Company sold, through the initial purchasers, convertible senior notes ("Convertible Notes") to qualified institutional buyers pursuant to Rule 144A of the Securities Act of 1933, as amended, for gross proceeds of \$201,250. The Convertible Notes are senior, unsecured obligations with interest payable semi-annually in cash at a rate of 1.00% per annum on April 1st and October 1st of each year, beginning on April 1, 2019. The Convertible Notes will mature on October 1, 2023 unless they are redeemed, repurchased or converted prior to such date. Prior to April 1, 2023, the Convertible Notes are convertible at the option of holders only during certain periods and upon satisfaction of certain conditions. Thereafter, the Convertible Notes will be convertible at any time until the close of business on the second scheduled trading day immediately preceding the maturity date. Upon conversion, the Convertible Notes may be settled in shares of the Company's common stock, cash or a combination of cash and shares of the Company's common stock, at the Company's election. It is our current intent to settle the principal and interest amounts of the Convertible Notes with cash.

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

10. Convertible Notes (Continued)

The Convertible Notes have an initial conversion rate of 23.6323 shares of common stock per \$1,000 principal amount of the Convertible Notes, which will be subject to customary anti-dilution adjustments in certain circumstances. This represents an initial effective conversion price of approximately \$42.31 per share, which represents a premium of approximately 30% to the \$32.55 per share closing price of the Company's common stock on October 2, 2018, the date the Company priced the offering.

The Company may redeem all or any portion of the Convertible Notes, at its option, on or after October 5, 2021, at a redemption price equal to 100% of the principal amount of the Convertible Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date, if the last reported sale price of the Company's stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including, the trading day immediately preceding the date on which the Company provides written notice of redemption.

Holders of Convertible Notes may require the Company to repurchase their Convertible Notes upon the occurrence of certain events that constitute a fundamental change under the indenture governing the Convertible Notes at a fundamental change repurchase price equal to 100% of the principal amount thereof, plus accrued and unpaid interest to, but excluding, the date of repurchase. In connection with certain corporate events or if the Company issues a notice of redemption prior to the maturity date, it will, under certain circumstances, increase the conversion rate for holders who elect to convert their Convertible Notes in connection with such corporate event or notice of redemption.

In connection with the pricing of the Convertible Notes, the Company entered into privately negotiated capped call transactions with a financial institution. The capped call transactions initially cover, subject to customary anti-dilution adjustments, the number of shares of the Company's common stock that initially underlie the Convertible Notes. The cap price of the capped call transactions is initially \$65.10 per share of the Company's common stock, representing a premium of 100% above the closing price of \$32.55 per share of the Company's common stock on October 2, 2018, and is subject to certain adjustments under the terms of the capped call transactions. The capped call transactions are expected generally to reduce potential dilution to the Company's common stock upon conversion of the Convertible Notes and/or offset the potential cash payments that the Company could be required to make in excess of the principal amount of any converted Convertible Notes upon conversion thereof, with such reduction and/or offset subject to a cap based on the cap price. The Company paid \$23,969 for the capped call transactions, which was recorded as additional paid-in capital, using a portion of the gross proceeds from the sale of the Convertible Notes. The capped call is expected to be tax deductible as the Company elected to integrate the capped call into the Convertible Notes for tax purposes. The tax effect on the equity component of the Convertible Notes of \$5,686 was recorded as additional paid-in capital.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****10. Convertible Notes (Continued)**

The following table summarizes the Convertible Notes as of December 31, 2018:

	December 31, 2018
Par value of the Convertible Notes	\$ 201,250
Unamortized debt discounts	(45,058)
Unamortized debt issuance costs	(4,522)
Net carrying value of Convertible Notes	\$ 151,670

The fair value of our Convertible Notes was \$169,970 as of December 31, 2018. The estimated fair value of Convertible Notes is based on market rates and the closing trading price of the Convertible Notes as of December 31, 2018 and is classified as Level 2 in the fair value hierarchy. As of December 31, 2018, the if-converted value of the Convertible Notes did not exceed the principal amount.

The Company incurred debt issuance costs of \$6,169 in October 2018. In accordance with FASB ASC 470, *Debt*, these costs were allocated to debt and equity components in proportion to the allocation of proceeds. \$1,442 of issuance costs were recorded as additional paid-in capital and such amounts are not subject to amortization. The remaining issuance costs of \$4,727 are recorded as debt issuance costs in the net carrying value of Convertible Notes. The debt issuance costs are amortized on an effective interest basis over the term of the Convertible Notes. Debt issuance cost amortization expense was \$205 for the year ended December 31, 2018, which was included in interest and other expense, net in the accompanying consolidated statements of operations for the year ended December 31, 2018. The following table sets forth interest expense related to the Convertible Notes for the year ended December 31, 2018:

	December 31, 2018
Contractual interest expense	\$ 2,677
Amortization of debt issuance costs	205
Amortization of debt discount	1,992
Total	\$ 4,874

Effective interest rate of the liability component	7.1%
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During the year ended December 31, 2018, we capitalized \$508 of amortization and interest expense related to the Convertible Notes.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****10. Convertible Notes (Continued)**

Amortization expense for our debt discount and debt issuance costs for fiscal years 2019 through 2023 is as follows:

Year	Debt Discounts	Debt Issuance Costs
2019	\$ 8,245	\$ 849
2020	8,864	901
2021	9,528	956
2022	10,241	1,015
2023	8,180	801
	\$ 45,058	\$ 4,522

11. Credit Facility

In February 2019, we entered into a new Credit Agreement (the "New Credit Agreement") and related agreements with Bank of America, N.A. acting as agent for lenders named therein, including Bank of America, N.A., Silicon Valley Bank, Bank of the West, Zions Bancorporation, N.A. dba California Bank & Trust, and Barclays Bank PLC (the "Lenders"), for a secured credit facility in the form of a revolving line of credit of up to \$150,000 (the "Revolving Line of Credit") and a term loan of \$3,500 (the "Term Loan" and together with the Revolving Line of Credit, the "New Credit Facility"). The New Credit Facility replaced the November 2014 Credit Facility with Bank of America, N.A. acting as agents for lenders named therein, which expired on November 21, 2018. We may use borrowings under the New Credit Facility for general working capital and corporate purposes. In general, amounts borrowed under the New Credit Facility are secured by a lien against all of our assets, with certain exclusions.

Amounts borrowed under the Revolving Line of Credit and Term Loan will bear variable interest at the greater of LIBOR plus 1.75% - 2.75% or Lender's Prime Rate plus 0.75% - 1.75% per year and we will pay a fee of 0.25% - 0.5% per year on any unused portion of the Revolving Line of Credit. The Term Loan requires quarterly payments of interest and principal until it is repaid in full on the maturity date but may be prepaid in whole or part at any time. Our New Credit Facility will mature on April 3, 2023. Repayment of amounts borrowed under the New Credit Facility may be accelerated in the event that we are in violation of the representations, warranties and covenants made in the New Credit Agreement, including certain financial covenants set forth therein, and under other specified default events including, but not limited to, non-payment or inability to pay debt, breach of cross default provisions, insolvency provisions, and change of control.

The Company is subject to customary financial and non-financial covenants under the New Credit Facility, including a minimum quarterly consolidated senior secured leverage ratio, a minimum quarterly consolidated total leverage ratio, a maximum quarterly consolidated fixed charge coverage ratio, and cash on hand minimums.

The Company incurred \$224 of debt issuance costs related to the New Credit Facility in 2018. Debt issuance costs will be amortized on a straight-line basis over the term of the New Credit Facility. Amortization expense related to debt issuance costs for the previous Credit Facility are included in

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****11. Credit Facility (Continued)**

interest and other expense in the accompanying consolidated statements of operations for the years ended December 31, 2018, 2017, and 2016. Amortization and interest expense for the November 2014 Credit Agreement capitalized amounted to \$288, \$773, and \$823 for the years ended December 31, 2018, 2017, and 2016, respectively. Amortization and interest expense for the previous Credit Agreement recorded amounted to \$106, \$187, and \$309 for the years ended December 31, 2018, 2017, and 2016, respectively. Interest rates for our previous Credit Facility for the period from January 1, 2018 to November 21, 2018 ranged from 4.2% to 6.8%.

12. Fair value measurement

The following table sets forth our financial assets and liabilities that are measured at fair value on a recurring basis:

At December 31, 2018	Level 1	Level 2	Level 3	Total
Assets:				
Money market accounts	\$ 137,723	\$	\$	\$ 137,723
Total assets	\$ 137,723	\$	\$	\$ 137,723
Liabilities:				
Contingent consideration	\$	\$	\$ 961	\$ 961
Total liabilities	\$	\$	\$ 961	\$ 961

At December 31, 2017	Level 1	Level 2	Level 3	Total
Assets:				
Money market accounts	\$ 2,255	\$	\$	\$ 2,255
Total assets	\$ 2,255	\$	\$	\$ 2,255

The Company's contingent consideration obligation was initially recorded at fair value and the Company will revalue this obligation each reporting period until the related contingencies are resolved. The fair value measurement is estimated using probability-weighted discounted cash flow approaches that are based on significant unobservable inputs related to achievement of estimated annual sales and are reviewed quarterly. Significant changes to estimated annual sales and discount rates would result in corresponding changes in the fair value of this obligation. There were no significant changes to the fair value of our contingent consideration liabilities during the period ended December 31, 2018. The following table presents a reconciliation of the beginning and ending amounts related to the fair value of contingent consideration categorized as Level 3:

Beginning balance, January 1, 2018	\$
Additions	961
Payment of contingent consideration	

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Change in fair value

Balance, December 31, 2018	\$ 961
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Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****13. Stockholders' equity**

At December 31, 2018 and 2017, we are authorized to issue up to 100,000,000 shares of common stock. We are required to reserve and keep available out of our authorized but unissued shares of common stock such number of shares sufficient to effect the exercise of all outstanding common stock warrants, plus shares granted and available for grant under our Amended and Restated 2001 Stock Incentive Plan (the "2001 Plan") and 2011 Equity Incentive Plan (the "2011 Plan"), as amended. Refer to Note 17 for a discussion of the 2011 Plan amendments.

The amount of such shares of common stock reserved for these purposes is as follows:

	December 31,	
	2018	2017
	(in thousands)	
Outstanding stock options under the 2001 Plan	14	155
Outstanding stock options under the 2011 Plan	290	1,128
Outstanding RSUs under the 2011 Plan	3,119	3,324
Shares available for grant under the 2011 Plan	2,979	3,863
Total	6,402	8,470

The Convertible Notes have an initial conversion rate of 23.6323 shares of common stock per \$1,000 principal amount of the Convertible Notes, which will be subject to customary anti-dilution adjustments in certain circumstances. The amount of shares that would be issuable assuming conversion of all of the Convertible Notes is approximately 4,756,000.

14. Income taxes

The income tax (benefit) expense by jurisdiction recorded as part of continuing operations consists of the following for the years ended December 31:

	2018	2017	2016
U.S. federal:			
Current	\$ 18	\$ (6)	\$ 55
Deferred	(4,569)	(2,787)	345
Total U.S. federal	\$ (4,551)	\$ (2,793)	\$ 400
U.S. state and local:			
Current	\$ 285	\$ 503	\$ 69
Deferred	(1,048)	212	(42)
Total U.S. state and local	\$ (763)	\$ 715	\$ 27

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Foreign:				
Current	\$	161	\$	\$
Total foreign	\$	161	\$	\$

In 2018, federal, state and local deferred tax expense of \$5,686 related to the equity component of the Convertible Notes was recorded as additional paid-in capital.

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Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****14. Income taxes (Continued)**

Income taxes differ from the amounts computed by applying the U.S. federal income tax rate to pretax income before income taxes as a result of the following for the years ended December 31:

	2018	2017	2016
Federal statutory rate	21.0%	34.0%	34.0%
State and local	19.7	9.6	2.2
Foreign rate differential	(0.5)	(0.7)	(0.4)
Stock options	(47.2)	0.4	(1.5)
Excess tax benefits from stock-based compensation	106.4	34.3	2.8
Non-controlling interests	5.5	1.1	0.6
Valuation allowance	(90.7)	(83.6)	(38.9)
Uncertain tax positions	2.3	0.6	(0.2)
Effect of U.S. tax reform law changes		14.7	
Convertible Notes	94.9		
Other	(5.9)	(0.4)	(0.2)
Income taxes	105.5%	10.0%	(1.6)%

We have a foreign subsidiary in the United Kingdom, which has generated losses since inception resulting in a \$2,022 deferred tax asset with a corresponding valuation allowance as of December 31, 2018. We also have a majority owned foreign subsidiary in Brazil, which has a \$521 deferred tax asset with a corresponding valuation allowance as of December 31, 2018 due to historical operating losses. Foreign loss before income taxes was \$577, \$1,268, and \$856 for 2018, 2017, and 2016, respectively.

As of December 31, 2018, we had an immaterial amount of unremitted earnings in our subsidiaries located outside of the U.S. for which state taxes have not been paid. Our intention is to indefinitely reinvest these earnings outside the U.S. If we were to remit our foreign earnings, we would be subject to state income taxes or withholding taxes imposed on actual distributions, or currency transaction gains (losses) that would result in taxation upon remittance. However, the amounts of any such tax liabilities resulting from the repatriation of foreign earnings are not material.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****14. Income taxes (Continued)**

Deferred income tax reflects the tax effects of temporary differences that gave rise to significant portions of our deferred tax assets and liabilities and consisted of the following for the years ended December 31:

	2018	2017
Deferred tax assets:		
Net operating loss carryforwards	\$ 34,545	\$ 23,838
Outside basis differences for U.S. partnerships	9,558	14,306
Stock options	2,396	4,100
Deferred revenue	640	748
Deferred compensation	120	249
State taxes	80	78
Other	1,525	1,282
Valuation allowance	(33,810)	(34,990)
Net deferred tax assets	15,054	9,611
Deferred tax liabilities:		
Property and equipment	(7,318)	(6,983)
Convertible Notes	(5,470)	
Intangible assets	(3,339)	(3,632)
Net deferred tax liabilities	(16,127)	(10,615)
Net deferred taxes	\$ (1,073)	\$ (1,004)

In December 2017, the Tax Cuts and Jobs Act ("TCJA") was enacted in the U.S. TCJA amended the Internal Revenue Code of 1986 and included the following key provisions, which are generally effective for tax years beginning after December 31, 2017, that are determined to have a significant impact on our effective tax rate:

Reduction of the corporate federal tax rate to 21%;

Permanent repeal of the alternative minimum tax regime with refunds of excess carryforwards;

For any net operating losses ("NOLs") generated in tax years beginning after December 31, 2017, repeals carryback ability but permits indefinite carryforward subject to a limitation of utilization to 80% of taxable income;

For executive compensation in excess of \$1 million, changes covered employees to principal executive officer, principal financial officer, and three other highest paid officers; eliminates the "last day of the tax year" language for determination of a covered employee; removes exceptions for commissions and performance-based compensation; and employees that are covered persons remain covered persons for all future years;

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Permits 100% bonus depreciation for eligible property placed in-service after September 27, 2017 and before January 1, 2023;

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Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****14. Income taxes (Continued)**

Disallows interest expense in excess of 30% of adjusted taxable income, which excludes deductions for depreciation, amortization, or depletion for taxable years beginning after December 31, 2017 and before January 1, 2022 only, but permits indefinite carryforward; and

Expands income exclusions and/or deduction limitations for certain fringe benefits that we may offer to our employees.

We completed our assessment of the impact of TCJA on our consolidated financial statements as of December 31, 2017 and recorded the impact of the enactment of TCJA in our consolidated financial statements for the year ended December 31, 2017. In 2017, we recorded a \$1,274 income tax benefit resulting from the reduction of the corporate federal tax rate as well as a \$1,766 income tax benefit provided by the indefinite carryforward of NOLs, which are expected to be available to recover our deferred tax liabilities that have an indefinite reversal pattern.

In assessing the realizability of deferred tax assets, we consider whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. As of December 31, 2018 and 2017, we had federal net operating loss carryforwards of approximately \$124,637 and \$82,461, respectively, state net operating loss carryforwards of approximately \$121,091 and \$73,934, respectively, and foreign net operating loss carryforwards of \$11,642 and \$10,811, respectively. The federal net operating loss carryforwards will begin to expire in 2025, and our foreign net operating loss carryforwards have an indefinite life. Our state net operating loss carryforwards will begin to expire in 2032. Our ability to utilize certain of our net operating loss carryforwards may be limited in the event that a change in ownership, as defined in the Internal Revenue Code, occurs in the future.

The following table sets forth the changes in the valuation allowance, for all periods presented:

	Valuation Allowance
Balance, December 31, 2015	\$ 19,548
Additions charged to operations	16,783
Decrease credited to operations	
Balance, December 31, 2016	36,331
Additions charged to operations	16,527
Effect of U.S. tax reform law changes	(17,868)
Decrease credited to operations	
Balance, December 31, 2017	34,990
Decrease credited to operations	(1,180)
Balance, December 31, 2018	\$ 33,810

The decreases credited to operations in 2018 were related to the deferred tax liabilities established against the equity component of the Convertible Notes.

In reaching the determination of the valuation allowance, we have evaluated all significant available positive and negative evidence including, but not limited to, our three-year cumulative results, trends in our business, expected future results and the character, amount and expiration periods of our

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****14. Income taxes (Continued)**

net deferred tax assets. The underlying assumptions we used in forecasting future income required significant judgment and took into account our recent performance.

We recognized interest and penalties related to income tax matters in income taxes. Interest and penalties were not material during the years ended December 31, 2018, 2017, and 2016.

We identify, evaluate and measure all uncertain tax positions taken or to be taken on tax returns and record liabilities for the amount of these positions that may not be sustained, or may only partially be sustained, upon examination by the relevant taxing authorities. Although we believe that our estimates and judgments were reasonable, actual results may differ from these estimates. Some or all of these judgments are subject to review by the taxing authorities. As of December 31, 2018 and 2017, we had \$0 in uncertain tax positions. We accrue interest and penalties related to unrecognized tax benefits as a component of income taxes.

A reconciliation of our unrecognized tax benefits, excluding interest and penalties, is as follows:

	Uncertain Tax Positions
Balance, December 31, 2016	\$ 313
Additions for current period tax positions	
Reversals during the period	(313)
Balance, December 31, 2017 and 2018	\$

Our annual income taxes and the determination of the resulting deferred tax assets and liabilities involve a significant amount of judgment. Our judgments, assumptions and estimates relative to current income taxes take into account current tax laws, their interpretation of current tax laws and possible outcomes of current and future audits conducted by foreign and domestic tax authorities. We operate within federal, state and international taxing jurisdictions and are subject to audit in these jurisdictions. These audits can involve complex issues which may require an extended period of time to resolve. We are subject to taxation in the United States and in various states. Our tax years 2015 and forward are subject to examination by the IRS and our tax years 2014 and forward are subject to examination by material state jurisdictions. However, due to prior year loss carryovers, the IRS and state tax authorities may examine any tax years for which the carryovers are used to offset future taxable income. We are currently subject to examination by the IRS for our 2015 tax year. Although the ultimate outcome is unknown, we believe that any adjustments that may result from examination is not likely to have a material adverse effect on our consolidated results of operations, financial position or cash flows.

15. Commitments and contingencies**Capital leases, notes payable, and operating leases**

We lease equipment, primarily data communication equipment and database software under non-cancellable capital leases that will expire over the next three years. The leases are collateralized by the equipment under the lease. We also purchase data communication equipment under financing arrangements with a non-related third party. Our agreements are collateralized by the equipment and generally contain three-year terms. Interest expense associated with these capital financing

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****15. Commitments and contingencies (Continued)**

arrangements for the years ended December 31, 2018, 2017 and 2016 was \$377, \$302 and \$158, respectively. We also lease office space under non-cancellable operating leases and our long-term office leases may include escalation clauses, rent holidays, and/or leasehold improvement incentives. Rent expense for our leases of office and other facilities, which is recorded on a straight-line basis over the term of the lease, for the years ended December 31, 2018, 2017 and 2016 was \$3,323, \$2,936 and \$2,993, respectively.

Future minimum obligations under non-cancellable operating and capital leases and notes payable at December 31, 2018 are as follows:

Years ended December 31,	Capital Leases and Notes Payable	Operating Leases
2019	\$ 6,844	\$ 3,573
2020	4,324	3,456
2021	669	3,385
2022		3,414
2023		3,495
Thereafter		8,835
Minimum lease payments	11,837	\$ 26,158
Less: Amounts representing interest ranging from 1.3% to 7.7%		(314)
Minimum lease payments	\$ 11,523	
Current portion	\$ 6,612	
Non-current portion	\$ 4,911	

As of December 31, 2018 and 2017, the carrying amount reflected in the accompanying consolidated balance sheets for the current portion of capital leases and notes payable of \$6,612 and \$5,771, respectively, and long-term portion of capital leases and notes payable of \$4,911 and \$6,747, respectively, approximates fair value (Level 2) based on the lack of significant change in our credit risk.

During the year ended December 31, 2018, we capitalized \$287 of interest expense related to our capital leases and notes payable.

Venue guarantees

We have long-term non-cancellable contracts to provide Wi-Fi connectivity and cellular phone access to our DAS network for our managed and operated locations. Our venue contracts generally contain initial terms that range up to 20 years. The venue contracts generally contain

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renewal clauses and may include escalation clauses. We may pay revenue share to our venues and certain venue contracts include minimum revenue share guarantees. Revenue share expense related to our venue contracts for the years ended December 31, 2018, 2017 and 2016 was \$37,991, \$32,637 and \$27,140, respectively.

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Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****15. Commitments and contingencies (Continued)**

Future minimum obligations under non-cancellable venue contracts at December 31, 2018 are as follows:

Year	Venue Guarantees
2019	\$ 14,638
2020	9,023
2021	6,765
2022	5,531
2023	4,781
Thereafter	8,887
	\$ 49,625

Letters of credit

We have entered into Letter of Credit Authorization agreements (collectively, "Letters of Credit"). The Letters of Credit are irrevocable and serve as performance guarantees that will allow our customers to draw upon the available funds if we are in default. As of December 31, 2018, we have Letters of Credit totaling \$8,244 that are scheduled to expire or renew over the next one-year period. There have been no drafts drawn under these Letters of Credit as of December 31, 2018.

Legal proceedings

From time to time, we may be subject to claims, suits, investigations and proceedings arising out of the normal course of business. We are not currently a party to any litigation that we believe could have a material adverse effect on our business, financial position, results of operations or cash flows. Legal costs are expensed as incurred.

Indemnification

Indemnification provisions in our third-party service provider agreements provide that we will indemnify, hold harmless, and reimburse the indemnified parties on a case-by-case basis for losses suffered or incurred by the indemnified parties in connection with any claim by any third party as a result of our website, advertising, marketing, payment processing, collection or customer service activities. The maximum potential amount of future payments we could be required to make under these indemnification provisions is undeterminable. We have never paid a claim, nor have we been sued in connection with these indemnification provisions. At December 31, 2018 and 2017, we have not accrued a liability for these guarantees, because the likelihood of incurring a payment obligation in connection with these guarantees is not probable.

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Boingo Wireless, Inc.

Notes to the Consolidated Financial Statements (Continued)

(In thousands, except shares and per share amounts)

15. Commitments and contingencies (Continued)

Employment contracts

As of December 31, 2018, we have entered into employment contracts with eleven of our officers and other employees. These contracts generally provide for severance benefits, including salary continuation, if employment is terminated by us without cause or by the officer for good reason. In addition, in order to assure that they would continue to provide independent leadership consistent with our best interests in the event of an actual or threatened change in control, the contract also generally provides for certain protections in the event of such a change in control. These protections generally include the payment of certain severance benefits, including salary continuation, upon the termination of employment following a change in control.

Other matters

We have received a claim from one of our venue partners with respect to contractual terms on our revenue share payments. The claim asserts that we have underpaid revenue share payments and related interest by approximately \$4,600. We are currently in final settlement discussions with our venue partner. As of December 31, 2018, we have accrued for the probable and estimable losses that have been incurred, which have been recorded as general and administrative expenses in the consolidated statements of operations. We are not currently a party to any other claims that we believe could have a material adverse effect on our business, financial position, results of operations or cash flows.

16. Stock repurchases

On April 1, 2013, the Company approved a stock repurchase program to repurchase up to \$10,000 of the Company's common stock in the open market, exclusive of any commissions, markups or expenses. The stock repurchased will be retired and will resume the status of authorized but unissued shares of common stock. The Company did not repurchase any of our common stock during the years ended December 31, 2018, 2017, and 2016. As of December 31, 2018, the remaining approved amount for repurchases was approximately \$5,180.

17. Stock incentive plans

In March 2011, our board of directors approved the 2011 Plan. The 2011 Plan provides for the grant of incentive and non-statutory stock options, stock appreciation rights, restricted shares of our common stock, stock units, and performance cash awards. As of December 31, 2018, 13,739,820 shares of common stock were reserved for issuance. As of December 31, 2018, options to purchase approximately 290,000 shares of common stock and RSUs covering approximately 3,119,000 shares of common stock were outstanding under the 2011 Plan.

No further awards will be made under our Amended and Restated 2001 Stock Incentive Plan, and it will be terminated. Options outstanding under the 2001 Plan will continue to be governed by their existing terms. As of December 31, 2018, options to purchase approximately 14,000 shares of common stock were outstanding under the 2001 Plan.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****17. Stock incentive plans (Continued)**

The following table summarizes our stock-based compensation expense included in the consolidated statements of operations for 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
Network operations	\$ 2,070	\$ 2,174	\$ 2,144
Development and technology	1,242	1,068	1,070
Selling and marketing	1,868	2,060	1,842
General and administrative	7,088	8,913	7,749
Total stock-based compensation expense	\$ 12,268	\$ 14,215	\$ 12,805

For the years ended December 31, 2018, 2017, and 2016, we capitalized \$789, \$696, and \$727, respectively, of stock-based compensation expense to software and capital projects.

Stock option awards

We grant stock option awards to both employees and non-employee directors. The grant date for these awards is the same as the measurement date. The stock option awards generally vest over a four-year service period with 25% vesting when the individual completes 12 months of continuous service and the remaining 75% vesting monthly thereafter. These awards are valued as of the measurement date and the stock-based compensation expense, net of forfeitures, is recognized on a straight-line basis over the requisite service period. A summary of the activity for stock option awards for 2018 is presented below:

	Number of Options (000's)	Weighted Average Exercise Price	Weighted-Average Remaining Contract Life (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2017	1,283	\$ 9.58	3.8	\$ 16,573
Exercised	(972)	\$ 10.26		
Canceled/forfeited	(7)	\$ 5.99		
Outstanding and exercisable at December 31, 2018	304	\$ 7.49	3.8	\$ 3,970

The aggregate intrinsic value in the table above represents the difference between the estimated fair value of our common stock at December 31, 2018 and the option exercise price, multiplied by the number of in-the-money options at December 31, 2018. The intrinsic value changes are based on the estimated fair value of our common stock.

Stock options to purchase approximately 972,000, 1,776,000 and 532,000 shares of our common stock were exercised during the years ended December 31, 2018, 2017 and 2016 for cash proceeds of \$9,979, \$9,244 and \$2,984, respectively. The total intrinsic value of stock options exercised for the years ended December 31, 2018, 2017 and 2016 was \$14,935, \$20,551 and \$1,675, respectively.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****17. Stock incentive plans (Continued)****Restricted stock unit awards**

We grant time-based restricted stock units ("RSUs") to executive and non-executive personnel and non-employee directors. The time-based RSUs granted to executive and non-executive personnel generally vest over a three-year period subject to continuous service on each vesting date. The time-based RSUs for our non-employee directors generally vest over a one-year period for existing members and 33.3% per year over a three-year period for new members subject to continuous service on each vesting date.

We grant performance-based RSUs to executive personnel. These awards vest subject to certain performance objectives based on the Company's revenue growth and/or Adjusted EBITDA growth achieved during the specified performance period and certain long-term service conditions. The maximum number of RSUs that may vest is determined based on actual Company achievement and performance-based RSUs generally vest over a three-year period subject to continuous service on each vesting date.

In 2016, our Compensation Committee determined to adjust its practice of making annual long-term equity grants and instead adopted a compensation cycle whereby it granted equity awards to our Chief Executive Officer and Chief Financial Officer covering the number of shares it might otherwise have granted in 2016 through 2018, with "cliff" vesting dates in 2019. These grants were made to focus our Chief Executive Officer and Chief Financial Officer on the Company's overall long-term corporate and strategic goals, eliminate intervening quarterly vesting dates that force them to sell shares in the market to cover taxes triggered upon vesting, and strengthen the Company's ability to retain our senior management team over the next three years. As a result of these larger-than-usual RSU grants, the Compensation Committee does not intend to grant additional equity awards to our Chief Executive Officer and Chief Financial Officer until 2019.

A summary of the RSU activity in 2018 is as follows:

	Number of Shares (000's)	Weighted Average Grant Date Fair Value
Non-vested at December 31, 2017	3,324	\$ 7.35
Granted(2)	978	\$ 13.73
Vested	(1,113)	\$ 8.99
Canceled/forfeited	(70)	\$ 14.98
Non-vested at December 31, 2018	3,119	\$ 8.60

(2)

The RSUs granted to all of our named executive officers in 2016 were subject to satisfaction of specified service-based and performance-based conditions. The performance objectives were subject to under- or over- achievement on a sliding scale, with a threshold of 50% of the target number of RSUs and a maximum of 150% of the target RSUs. In February 2018, our Compensation Committee determined actual achievement of the 2016 performance-based RSUs resulting in additional RSUs granted

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****17. Stock incentive plans (Continued)**

of approximately 584,000 at a grant-date fair value of \$6.13 per share during the year ended December 31, 2018.

During the year ended December 31, 2018, 1,112,938 shares of RSUs vested. The Company issued 702,447 shares and the remaining shares were withheld to pay minimum statutory federal, state, and local employment payroll taxes on those vested awards.

At December 31, 2018, the total remaining stock-based compensation expense for unvested RSU awards is \$9,314, which is expected to be recognized over a weighted average period of 2.6 years.

18. Employee benefit plan

We have a defined contribution savings plan in accordance with Section 401(k) of the Internal Revenue Code. This plan covers substantially all employees who meet the IRS requirements and allows participants to contribute a portion of their annual compensation on a pre-tax basis. The Company's matching contributions are paid each pay period and employees are immediately vested in all of the Company's matching contributions regardless of the employee's length of service with the Company. Employer contributions of \$1,154, \$891 and \$819 were made to the plan by us in 2018, 2017 and 2016, respectively.

19. Net loss per share attributable to common stockholders

The following table sets forth the computation of basic and diluted net loss per share attributable to common stockholders:

	Year Ended December 31,		
	2018	2017(3)	2016(3)
	(in thousands)		
Numerator:			
Net loss attributable to common stockholders, basic and diluted	\$ (1,220)	\$ (19,366)	\$ (27,331)
Denominator:			
Weighted average number of common stock, basic and diluted	42,066	39,824	38,025
Net loss per share attributable to common stockholders:			
Basic and diluted	\$ (0.03)	\$ (0.49)	\$ (0.72)

(3)

As noted above, prior period amounts have not been adjusted upon adoption of ASC 606 under the modified retrospective method.

For the years ended December 31, 2018, 2017 and 2016, we excluded all assumed exercises of stock options and the assumed issuance of common stock under RSUs from the computation of diluted net loss per share as the effect would be anti-dilutive due to the net loss for the period. For the year ended December 31, 2018, we also excluded the shares that would be issuable assuming conversion of all of the Convertible Notes given our intent to settle in cash as well as the shares for the capped call as the effect would be anti-dilutive.

Table of Contents**Boingo Wireless, Inc.****Notes to the Consolidated Financial Statements (Continued)****(In thousands, except shares and per share amounts)****20. Quarterly financial data (unaudited)**

Summarized unaudited quarterly financial data for fiscal years 2018 and 2017 are as follows:

2018	Quarter Ended			
	March 31	June 30	September 30	December 31
Revenue	\$ 58,159	\$ 59,601	\$ 65,253	\$ 67,808
(Loss) income from operations	\$ (2,566)	\$ 2,576	\$ 150	\$ (3,157)
Net (loss) income attributable to common stockholders	\$ (3,229)	\$ 2,115	\$ (522)	\$ 416
Basic and diluted (loss) income per share	\$ (0.08)	\$ 0.05	\$ (0.01)	\$ 0.01

2017	Quarter Ended			
	March 31	June 30	September 30	December 31
Revenue	\$ 44,333	\$ 49,033	\$ 53,655	\$ 57,348
Loss from operations	\$ (6,578)	\$ (7,670)	\$ (2,989)	\$ (3,464)
Net loss attributable to common stockholders	\$ (6,880)	\$ (8,017)	\$ (3,450)	\$ (1,019)
Basic and diluted loss per share	\$ (0.18)	\$ (0.20)	\$ (0.09)	\$ (0.02)

Losses per share are computed separately for each quarter and the full year using the respective weighted average number of shares. Therefore, the sum of the quarterly losses per share amounts may not equal the annual amounts reported.

21. Subsequent events**Equity Incentive Plan**

In February 2019, we granted approximately 93,000 time-based RSUs to certain executive officers that vest periodically over three years of continuous service and approximately 80,000 performance-based RSUs (assuming at-target achievement) that cliff-vest upon achievement of performance objectives through December 31, 2021. We also granted approximately 205,000 time-based RSUs to non-executive personnel that will vest quarterly over three years of continuous service.

The grants were made pursuant to our 2011 Plan.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on the 1st day of March 2019.

BOINGO WIRELESS, INC.

/s/ DAVID HAGAN

David Hagan

By: *Chief Executive Officer and Chairman of the Board*

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints David Hagan and Peter Hovenier, and each of them, as his true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his substitutes, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<p>/s/ DAVID HAGAN</p> <hr style="border: 0.5px solid black;"/> <p>David Hagan</p>	<p>Chairman of the Board and Chief Executive Officer (Principal Executive Officer)</p>	<p>March 1, 2019</p>
<p>/s/ PETER HOVENIER</p> <hr style="border: 0.5px solid black;"/> <p>Peter Hovenier</p>	<p>Chief Financial Officer (Principal Financial and Accounting Officer)</p>	<p>March 1, 2019</p>
<p>/s/ MAURY AUSTIN</p> <hr style="border: 0.5px solid black;"/> <p>Maury Austin</p>	<p>Director</p>	<p>March 1, 2019</p>
<p>/s/ MICHELE CHOKA</p> <hr style="border: 0.5px solid black;"/> <p>Michele Choka</p>	<p>Director</p>	<p>March 1, 2019</p>
<p>/s/ CHUCK DAVIS</p> <hr style="border: 0.5px solid black;"/> <p>Chuck Davis</p>	<p>Director</p>	<p>March 1, 2019</p>

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<u>/s/ MICHAEL FINLEY</u>	Director	March 1, 2019
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<u>/s/ KATHY MISUNAS</u>	Director	March 1, 2019
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<u>/s/ LANCE ROSENZWEIG</u>	Director	March 1, 2019
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