UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 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**

FOR THE TRANSITION PERIOD FROM TO

Commission File Number 001-38107

ShotSpotter, Inc.
(Exact Name of Registrant as Specified in its Charter)

Delaware **(State or other jurisdiction of incorporation or organization)**	**47-0949915** **(I.R.S. Employer Identification No.)**
7979 Gateway Blvd., Suite 210 **Newark, California** **(Address of principal executive offices)**	**94560** **(Zip Code)**

Registrant's telephone number, including area code: (510) 794-3100

Securities registered pursuant to Section 12(b) of the Act: Common Stock, $0.005 par value per share; Common Stock traded on the Nasdaq Capital Market.

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

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES ☐ NO ☒

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 (§229.405) 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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

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

If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☒Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on a closing price of $37.93 per share of the Registrant's common stock as reported on the Nasdaq Capital Market on June 29, 2018 was $270,329,955.

The number of shares of Registrant's common stock outstanding as of February 28, 2019 was 10,911,848.

Portions of the Registrant's Definitive Proxy Statement relating to the Annual Meeting of Stockholders, scheduled to be held on June13, 2019, are incorporated by reference into Part III of this Report. Such Proxy Statement will be filed with the Securities and Exchange Commission no later than 120 days following the end of the Registrant's fiscal year ended December 31, 2018.

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SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements that involve substantial risks and uncertainties. The forward-looking statements are contained principally in the sections of this Annual Report on Form 10-K entitled “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business,” but are also contained elsewhere in this Annual Report on Form 10-K. Often, you can identify forward-looking statements by the words “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “might,” “objective,” “ongoing,” “plan,” “predict,” “project,” “potential,” “should,” “will,” or “would,” or the negative of these terms, or other comparable terminology intended to identify statements about the future. Forward-looking statements include statements about:

- our ability to continue to increase revenues, secure customer renewals and expand coverage areas of existing public safety customers;
- our ability to continue to add new customers for our public safety and security solutions;
- our ability to grow both domestically and internationally;
- our ability to effectively manage or sustain our growth;
- our ability to maintain, increase or strengthen awareness of our solutions;
- our ability to achieve and maintain service level agreement standards (SLAs) in our customer contracts;
- future revenues, hiring plans, expenses, capital expenditures, capital requirements and stock performance;
- our ability to service outstanding debt, if any, and satisfy covenants associated with outstanding debt facilities;
- our ability to attract and retain qualified employees and key personnel and further expand our overall headcount;
- our ability to comply with new or modified laws and regulations that currently apply or become applicable to our business both in the United States and internationally; and
- our ability to maintain, protect and enhance our intellectual property.

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

These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. Although we believe that we have a reasonable basis for each forward-looking statement contained in this Annual Report on Form 10-K, we caution you that these statements are based on a combination of facts and factors currently known by us and our expectations of the future, about which we cannot be certain. You should refer to the “Risk Factors” section of this Annual Report on Form 10-K for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this Annual Report on Form 10-K will prove to be accurate. We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. You should read this Annual Report on Form 10-K and the documents that we reference in this Annual Report on Form 10-K completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of our forward-looking statements by these cautionary statements.

PART I.

Item 1. BUSINESS

Overview

We provide precision-policing and security solutions for law enforcement and security personnel to help deter gun violence and make cities, campuses and facilities safer. Our flagship public safety solution, ShotSpotter Flex, is the leading outdoor gunshot detection, location and alert system. Our newly-acquired patrol management software, ShotSpotter Missions (formerly HunchLab), creates crime forecasts designed to enable more precise and effective use of patrol resources to deter crime. Our security solutions, ShotSpotter SecureCampus and ShotSpotter SiteSecure, are designed to help law enforcement and security personnel serving universities, corporate campuses and key infrastructure or transportation centers mitigate risk and enhance security by notifying authorities of a potential outdoor gunfire incident, saving critical minutes for first responders to arrive. Our gunshot detection solutions are trusted by 100 cities as of December 31, 2018.

Our gunshot detection solutions consist of highly-specialized, cloud-based software integrated with proprietary, internet-enabled sensors designed to detect outdoor gunfire. The speed and accuracy of our gunfire alerts enable law enforcement and security personnel to reduce their response times to shooting events, which can increase the chances of apprehending the shooter, providing timely aid to victims, and identifying witnesses before they scatter, as well as aid in evidentiary collection and serve as an overall deterrent. When a potential gunfire incident is detected by our sensors, our system applies machine learning combined with a human review to analyze and validate the incident and precisely locate where the incident occurred. An alert containing a location on a map and critical information about the incident is transmitted directly to subscribing law enforcement or security personnel through any internet-connected computer and to iPhone or Android mobile devices.

Our software transmits validated gunfire data along with a recorded digital file of the triggering sound to our Incident Review Center ("IRC"), where our trained acoustic experts are on duty 24 hours a day, seven days a week, 365 days a year to screen and confirm actual gunfire incidents. Our acoustic experts can supplement alerts with additional tactical information, such as the potential presence of multiple shooters or the use of high-capacity weapons. Gunshot incidents reviewed by our IRC result in alerts typically sent within 45 seconds of the gunfire incident.

We generate annual subscription revenues from the deployment of ShotSpotter Flex on a per-square-mile basis. Our security solutions, ShotSpotter SecureCampus and ShotSpotter SiteSecure, are typically sold on a subscription basis, each with a customized deployment plan. Our ShotSpotter Missions solution pricing is under development, but will also be subscription based. As of December 31, 2018, we had ShotSpotter Flex, ShotSpotter SecureCampus and ShotSpotter SiteSecure coverage areas under contract of approximately 670 square miles, of which 648 square miles had gone live as of December 31, 2018. These coverage areas included 100 cities and 10 campuses/sites across the United States and in South Africa, including three of the ten largest cities in the United States. For the year ended December 31, 2018, substantially all of our revenues are attributable to customers based in the United States.

We are a mission-driven organization focused on earning the trust of law enforcement to help them provide equal protection to all and strengthen the police-community relationship, ultimately reducing gun violence. Our inspiration comes from our principal founder, Dr. Bob Showen, who believes that the highest and best use of technology is to promote social good. We are committed to developing comprehensive, respectful and engaged partnerships with law enforcement agencies, elected officials and communities focused on making a positive difference in our society.

Industry Background: The Problem of Gun Violence

According to the Federal Bureau of Investigation (the "FBI"), an estimated 1.2 million violent crimes occurred in the United States in 2017. Of those violent crimes, it is estimated that firearms were used in 72.6% of murders, 40.6% of robberies and 26.3% of aggravated assaults. A March 2016 report published by The American Journal of Medicine stated that the gun homicide rate in the United States is more than 25 times the average of other high-income countries.

There is a staggering economic cost associated with gun violence. A 2015 study commissioned by Mother Jones, an independent news organization, found that gun violence costs the American economy at least $229 billion every year, inclusive of $8.6 billion in direct expenses such as for emergency and medical care.

The Challenge of Urban Gun-Related Crime

The majority of urban gunfire goes unreported. A report published by The Brookings Institute analyzing data collected from our ShotSpotter Flex and our customers suggests that approximately 90% of the gunshots detected by our public safety solution are not reported to 911 by residents. Even in the instances when 911 calls are made, the information reported by the caller is often incomplete or inaccurate as to the time and location of the gunshot. Furthermore, in many cases it is often difficult for the caller to authenticate the incident as gunfire. In addition, we believe that in communities plagued by gun violence, there is often a lack of trust between the community's residents and its police force, which can exacerbate the underreporting of gunfire and create a vicious cycle of underreporting, lack of response and increased mistrust due to continued unaddressed gun violence in the community. When gunfire is not reported or is reported inaccurately, law enforcement and medical personnel cannot address injuries nor effectively investigate and solve related crimes or prevent future incidents.

The communities in which gun violence occurs suffer significant economic loss. A 2016 report by the Urban Institute, which studied the effect of gun violence in Minneapolis, Minnesota, Oakland, California and Washington, D.C., noted that the perceived risk of gun violence imposed heavy social, psychological and monetary damages in communities, including in the forms of fewer jobs and lower economic vitality. The study concluded:

- In Minneapolis, one fewer gun homicide in a given year was statistically associated with the creation of 80 jobs and an additional $9.4 million in sales across all business establishments in the next year.
- In Oakland, every additional gun homicide in a given year was statistically associated with five fewer job opportunities in contracting businesses in the next year.
- In Washington, D.C., every additional gun homicide in a given year was statistically associated with two fewer retail and service establishments the next year.

In addition, several studies have suggested that property values are inversely correlated with violent crime. For example, the Center for American Progress conducted a study of changes in homicide incidents and housing prices in Boston, Massachusetts; Seattle, Washington; Chicago, Illinois; Philadelphia, Pennsylvania and Milwaukee, Wisconsin and found that a reduction in a given year of one homicide in a ZIP code causes a 1.5% increase in housing values in that same ZIP code the following year.

The Rise of Active-Shooter Events

In addition to the problem of localized, persistent gun violence, over the past several years there has been an increasing number of high-profile mass shootings and terror events. According to a 2016 report by the FBI, the number of active-shooter events in the United States in 2014 and 2015 was among the highest for any two-year average period in the preceding 16 years and nearly six times as many as the period between 2000 and 2001, the first two years that the FBI began tracking active-shooter events.

Unlike gunfire incidents occurring in high-crime areas, active-shooter events often result in a high volume of telephone reports to 911. However, each caller may provide untimely, inaccurate or incomplete information, causing confusion or delays in first responders' ability to react quickly and accurately. Response time is critical as nearly 70% of active-shooter events last five minutes or less with over one third ending in two minutes or less according to a 2013 study conducted by the FBI of active-shooter events.

Our Market

We believe there is significant demand for advanced gunfire detection and location notification solutions that accurately and quickly report instances of gunfire, based on two primary use cases:

- law enforcement— for domestic and international law enforcement serving communities plagued by persistent, localized gun violence, in order to identify, locate and deter gun violence; and
- security— for security personnel (which may include law enforcement personnel) serving universities, corporate campuses, key infrastructure, transportation centers and other areas in which authorities desire to prepare for and mitigate risks related to an active-shooter event, and desire to provide a zone of detection coverage surrounding the respective campus or secured area.

Based on data from the 2015 FBI Uniform Crime Report, we estimate that the domestic market for our public safety solution consists of the approximately 1,400 cities that had four or more homicides per 100,000 residents in 2015. The Uniform Crime Report includes information reported directly to the FBI on a voluntary basis by 18,000 city, university and college, county, state, tribal and federal law enforcement agencies. We believe that four or more homicides per 100,000 residents represents a significant gun violence problem. We estimate that a customer in this market could invest an average of approximately $400,000 per year for ShotSpotter Flex.

Outside of the United States, we estimate that the market for our ShotSpotter Flex includes approximately 200 cities in the European Union, Central America, the Caribbean, South America and southern Africa that have at least 500,000 residents. We estimate that a customer in this market could invest an average of approximately $1.0 million per year for our public safety solution.

We estimate the average investment amounts for prospective customers based on our experience with existing customers, our anticipated demand for our solutions and the corresponding coverage areas that we expect prospective customers would elect to cover with our solutions.

Based on data made available by the National Center for Education Statistics and the Federal Aviation Administration, we believe that the domestic market for our security solutions includes approximately 5,000 college campuses and airports. We estimate that, on average, a customer in this market could invest approximately $50,000-$75,000 per year for one of our security solutions. In addition, we believe that there exists a broader market for our security solutions that include, primarily the outdoor areas of college campuses and airports outside of the United States as well as large corporate campuses, train stations and other highly-trafficked areas worldwide.

We also believe there is a demand for our ShotSpotter Missions within our existing ShotSpotter Flex customers and within police departments in the same cities we target for our gunshot detection solutions, as it designed to help police departments strategically plan patrol missions and tactics for more effective crime deterrence. We estimate that the market for our ShotSpotter Missions solution includes approximately 1,500 cities, based on cities that have a population above 25,000 people. Our Missions solution pricing will be subscription based. We expect a customer to invest approximately $50,000 per year for our ShotSpotter Missions solution.

The ShotSpotter Solutions

All of our solutions are based on our highly-specialized, cloud-based software. In the case of our gunshot detection solutions, ShotSpotter Flex, ShotSpotter SecureCampus and ShotSpotter SiteSecure, the software is integrated with our proprietary, internet-enabled sensors and connected through third-party communication networks. We brand our solutions based on particular use cases and target customers as follows:

- **ShotSpotter Flex.** ShotSpotter Flex, a public safety solution, serves cities and municipalities seeking to identify, locate and deter persistent, localized gun violence by incorporating a real-time gunshot detection system into their policing systems.
- **ShotSpotter Missions.** This cloud-based patrol management solution uses artificial intelligence-driven analysis to help police departments strategically plan patrol missions and tactics for more effective crime deterrence. The system provides: crime forecasting and mission planning to enable more precise deployment of patrol resources, and report on mission activity and tactics for command staff.

- **ShotSpotter SecureCampus.** ShotSpotter SecureCampus helps the law enforcement and security personnel serving universities, colleges and other educational institutions mitigate risk and enhance security by notifying authorities and first responders of an active-shooter event, involving outdoor gunfire, almost immediately, and provide "dome of protection" outside the campus where our coverage areas extends.
- **ShotSpotter SiteSecure.** ShotSpotter SiteSecure is designed to serve customers such as corporations trying to safeguard their facilities and public agencies focused on protecting critical infrastructure, including train stations, airports and freeways.

The key features of our gunshot detection solutions are:

- ***Comprehensive Coverage.*** We believe that we sell the only public safety solution that provides comprehensive outdoor coverage for gunshot detection over large and complex acoustic environments. Our outdoor acoustic sensors are strategically placed in an array of 20 to 30 sensors per square mile and can easily be expanded to cover any size area. In addition to providing acoustic surveillance over wide areas, our solutions operate on a continuous basis—24 hours a day, seven days a week, 365 days a year—to provide immediate notification of gunfire at any time of day.
- ***Real-Time, Precise Alerts.*** Our solutions typically notify users within 45 seconds of a gunshot, providing data on the time and location of the shooting and the number of shots fired. An alert is sent depicting a dot on a map that corresponds to a specific address or latitudinal and longitudinal coordinates. In addition, our alerts provide valuable additional information about the scene of the incident, such as the potential presence of multiple shooters or the use of fully automatic and high-capacity weapons. This enhanced tactical awareness can help protect first responders in dangerous and unpredictable situations.
- ***Forensically-Sound Data.*** Because our outdoor solutions provide an exact time, location and audio recording of a gunshot, we are able to provide authorities with critical evidence for investigations and prosecutions. Our Detailed Forensic Reports, or DFRs, provide law enforcement personnel and prosecutors with comprehensive, court-admissible analysis of a shooting incident including the gunfire audio. We also offer expert witness testimony to introduce the forensic analysis of the DFRs at trial and to provide technical expertise regarding our technology. During the year ended December 31, 2018, we completed 747 DFRs for outdoor gunshot incidents, and during 2018, our evidence was requested for use in approximately 106 federal and state cases, including 25 trials in which we provided expert witness testimony.
- ***Annual Subscription to a Cloud-Based Solution.*** We provide our solutions as an annual subscription-based service in which we design, deploy, own, manage and maintain the acoustic sensors, host the software and gunshot data and operate our IRC with trained acoustic experts. Occasionally we receive customer requests for direct purchase of our sensors in conjunction with the purchase of our subscription service. We evaluate each of these requests on a case by case basis.

The key benefits provided by these features of our gunshot detection solutions include:

- ***Expedited Response to Gunfire.*** In 2018, we issued more than 112,000 gunshot alerts to our customers. In areas where gun violence is persistent, we believe most gunshots are not otherwise reported. Even when calls are made, many callers are unable to provide a location of the gunshot or other relevant details. Human response time to unfolding violence often delays calls for several minutes in circumstances where response time can be critical. By contrast, our solutions typically alert emergency dispatch centers and field personnel within 45 seconds of confirmed gunfire and provide an exact location, enabling them to respond faster and to a specific location. The ability to respond more quickly increases the chances of apprehending the shooter and assisting victims of violence, in addition to aiding in evidentiary collection.
- ***Prevention and Deterrence of Gun Violence.*** We believe increasing the speed and accuracy of law enforcement responses to gunfire can act as a long-term deterrent that can decrease the overall prevalence of gunfire. We also believe that knowledge of the existence of our solutions may have a deterrent effect on localized gun violence. When elected officials and law enforcement have an enhanced awareness of gun violence activity and patterns, they have tools to facilitate a rapid and accurate response to gunfire incidents and improve relations between law enforcement and these communities, potentially increasing

crime reporting and community cooperation with investigations, which can result in improved public safety.

- ***Improved Community Relations and Collaboration.*** We believe that persistent gun violence limits the ability of police and other community leaders to serve their constituents and improve their communities. Many cities struggle to establish and foster a cooperative and trusting relationship between their police department and the communities they serve. Our public safety solution provides cities with the ability to react quickly to gun violence, thus providing the ability to improve their responses and residents' perception of their responses. This provides our customers with the opportunity to foster improved community relations and collaboration with their residents.
- ***Improved Police Officer Safety.*** We believe that our solutions provide additional and valuable information regarding gunshot incidents as the alerts we provide give additional insight and situational awareness, including, in the case shots fired outdoors, round count, potential multiple shooters and use of an automatic weapon, that allow the responders to be better prepared to respond appropriately.
- ***Ease to Procure and Use.*** By delivering our solution as a cloud- and subscription-based service, our customers do not need to design, install or maintain their own complex infrastructure or hire or train acoustic experts to continuously manage such a solution. We offer consultative ongoing on-boarding, best practices and tactical training support to our customers to insure they derive the full value of implementing our solution.
- ***Integration Capability.*** We can customize the integration of our solutions with existing customer systems, including video management systems, computer-aided dispatch, records management systems, video analytics, automated license plate number readers, camera management systems, crime analysis and statistics packages (including the COMPSTAT software tools commonly used by police departments) and common operating picture software. Interfacing with our alerts can enhance the effectiveness of these customer tools by providing information such as precise latitude and longitude (geolocation), timestamps, incident audio and situational context. For example, police in Minneapolis, Minnesota used our alerts to trigger video recordings of certain key intersections in high crime areas and capture the image of a suspect fleeing the scene of a shooting. Similarly, in Boston, Massachusetts, police correlate our data with surveillance cameras and parolee ankle bracelet tracking data to monitor parolees who may be violating parole terms by committing crimes or consorting with criminals.
- ***Gun Violence Data Collection.*** We believe that we have amassed the world's largest and most accurate collection of urban gunshot data. We provide our public safety customers with detailed gun crime pattern analysis for their coverage areas as well as access to additional data that can assist them with further analytics. This information provides an awareness of gunshot activity that may otherwise go unreported. For example, by collecting information regarding the time and location of otherwise unreported gunfire, our customers can become aware of patterns of violence in the community. This increased awareness can help our customers create policy, allocate appropriate resources and help to address pervasive problems in high gun-activity areas.

The key features and key benefits of ShotSpotter Missions solution include:

- ***Crime Forecasting and Mission Planning.*** Our ShotSpotter Missions and the associated machine learning systems can provide crime forecasting and mission planning to enable more precise deployment of patrol resources, and report on mission activity and tactics for command staff. Missions also provides agencies the flexibility to select which crime types to forecast and weight them based on police and community priorities.
- ***Tactical Mission Confirmation.*** Tactical missions can be configured with police input, and effectively communicate predictions to police staff of discrete areas of high risk for particular crime types. The key benefit of ShotSpotter Missions is its ability to help police departments to strategically plan patrol missions and tactics for more effective crime deterrence with focused, directed and visible patrol presence.

Strategy

We intend to drive growth in our business by continuing to build on our position as a leading provider of outdoor gunshot detection solutions. Key elements of our strategy include:

- ***Accelerate Our Acquisition of Public Safety Customers.*** We believe that we continue to be in the early stages of penetrating the markets for our public safety solutions. We count law enforcement agencies in three of the ten largest U.S. cities among our ShotSpotter Flex customers, all of which were added within the last three years. We expanded our direct sales force and customer success team in 2017 and in 2018 added marketing lead-generation capabilities to accelerate growth in this market. Moreover, as we add new public safety customers, publicity and the number of potential references for our solutions increase, which results in our brand and our solutions becoming more well known. We intend to capitalize on this momentum to drive an increase in sales.
- ***Expand Our International Footprint.*** With only one currently deployed ShotSpotter Flex customer outside of the United States in South Africa and we just signed a contract in early 2019 with the Bahamas, we believe that we have a significant opportunity to expand internationally. We estimate that the market outside the United States for our public safety solutions includes approximately 200 cities in the European Union, Central America, the Caribbean, South America and southern Africa that have at least 500,000 residents. In addition, we believe that there is a market for our security solutions and ShotSpotter Missions outside the United States that includes primarily the outdoor areas of college campuses and airports, as well as large corporate campuses, train stations and other highly-trafficked areas. We intend to invest in our international sales and marketing efforts to reach these customers.
- ***Expand ShotSpotter Flex Revenue within Our Existing Customer Base.*** As customers realize the benefits of our solutions, we believe that we have a significant opportunity to increase the lifetime value of our customer relationships by expanding coverage within their communities through a "land and expand strategy". For example, of our ShotSpotter Flex customers, approximately 40% have expanded their coverage areas from their original deployment areas by an average of ten square miles, as of December 31, 2018. Our overall revenue retention rate has been over 100% for each of 2018, 2017 and 2016.
- ***Drive Additional Revenue per Customer with the Development or Acquisition of New Products and Services.*** We evaluate opportunities to develop or acquire complementary products and services. For example, our acquisition of HunchLab, renamed ShotSpotter Missions, in 2018 provides an opportunity to increase our revenue per customer with a related and value-added technology that helps deter crime through strategically planned patrol missions. Our initial focus is to leverage trusted relationships with current customers to drive initial adoption, and increase revenue and lifetime value per customer.
- ***Partner with "Smart Cities" Initiatives Providers.*** We believe that there is a significant opportunity to partner with providers of "Smart Cities" initiatives. For example, we have partnered with GE Current and Verizon to incorporate our gunshot detection solutions into intelligent street lights in areas not otherwise covered by our solutions. By incorporating our solutions into these initiatives, we believe we can increase our customer base, expand our footprint with those customers and deploy our solutions at a reduced cost to us. These partnerships provide new and incremental go-to market strategies we believe we can use to accelerate market penetration for our services over time.
- ***Maintain Passionate Focus on Customer Success and Net Promoter Score.*** Given the specialized nature of our market, a key component of our strategy is to maintain our passionate focus on customer success and satisfaction. We pride ourselves on our execution of customer on-boarding as well as ongoing consulting and customer support, all of which are critical to ensure not only high customer retention rates, but new customer acquisitions. We implement our customer success initiative early in the sales process in order to ensure that we are aligned with the customer's objectives and can positively impact their defined outcomes. We apply consultative best practices and policy development at the command staff level as well as tactical training for field patrol officers. We also consistently measure our performance with customers through an annual Net Promoter Survey. We have extremely high agency participation rates and our scores the last two years have ranked between "excellent" and "world class" according to our Survey partner benchmarks. All of our efforts are focused on driving positive measurable outcomes

on gun violence reduction and prevention, which we know leads to positive word of mouth referrals that can attract new customers and drive an increase in sales.

- ***Integrate with New Technologies that Enhance our Value.*** We believe that integrating our solutions with other tools and technologies enhances the value of our solutions to our customers. For example, our solutions can be used in connection with computer-aided dispatch systems, video surveillance cameras, National Integrated Ballistic Information Network ("NIBIN"), and automated license plate readers used by law enforcement to improve the effectiveness of police response and investigation efforts. We continue to evaluate new technologies that may integrate with our solutions to generate additional value for our customers.
- ***Grow Our Security Business.*** We have developed our ShotSpotter SecureCampus solution for universities and other educational institutions. We have also developed ShotSpotter SiteSecure for customers such as corporations trying to safeguard their facilities, and public agencies focused on protecting critical infrastructure, including train stations, airports and highways. As of December 31, 2018, we had ten ShotSpotter SecureCampus and ShotSpotter SiteSecure customers. With more than 5,000 target customers in the United States, we believe that these markets represent an opportunity for growth.
- ***Extend Our Market and Product Leadership in Gun Violence Prevention.*** We will continue to invest in improving our acoustic gunshot detection solutions, our sensors, our gunshot detection algorithms, the design and deployment of our network arrays, our mobile applications, and the integration of our platform with third-party technologies, to maintain our technology leadership position. With what we believe is the world's largest collection of loud, impulsive sounds collected over 20 years, we believe we are in a unique position to improve gunshot detection accuracy via machine learning and neural networking. In addition, we intend to leverage our extensive collection of gunfire data to better understand the facts, trends and circumstances surrounding gun activity in order to maintain our reputation as gun violence experts. In doing so, we hope to contribute to the efforts of the community at large to identify, locate and deter gun violence.
- ***Extend our Platform of Services and the Value of our Data.*** We will continue to invest in research and development to leverage our large and growing database of impulsive acoustic events, which includes those from both gunfire and non-gunfire. We also intend to leverage third-party artificial intelligence ("AI") and our own evolving cognitive and analytical applications to improve the efficiency of our solutions, which may include internal software applications, data analysis, event routing and customer outputs. Certain of these applications and outputs may expand the platform of services that we will be able to offer our customers.

Integrated Platform

Our gunshot detection solutions provide for the complete integration of several complex components- intelligent sensors, networking infrastructure, and enterprise software and computing resources — in an easy-to-adopt and affordable annual subscription that eliminates the need for our customers to design, install or maintain their own complex infrastructure or hire or train acoustic experts to monitor continuously the solution.

We believe that offering these solutions as a service on an annual subscription basis is cost-effective, provides for more resilient, redundant infrastructure and significantly reduces friction during customer adoption by eliminating the complexity and front-loaded capital expenditure associated with perpetual licenses for on-site technology projects. Our sensors operate on machine-to-machine networks and, because we maintain thousands of live sensor connections, we are able to aggregate usage for all of our customers and negotiate lower rates from communications service providers than a single customer would likely be able to procure on their own.

We operate fully redundant data centers on both U.S. coasts, each of which has backup power supply, HVAC and internet connectivity. We are able to provide a level of 24/7/365 fault-tolerant hardware and network uptime that few of our customers could afford to procure or maintain on their own. In addition, we augment our own private cloud-based infrastructure with a secure public cloud offering through a collaboration with Amazon Web Services.

Gunshot Detection Software

The heart of our gunshot detection solutions is our sophisticated and highly-specialized software. Our software analyzes audio signals for potential gunshots first in our intelligent sensors. Our sensor filters out ambient background noise, such as traffic or wind, and looks for impulsive sounds characteristic of gunfire. If the sensor detects such an impulse, it extracts pulse features of the soundwave, such as sharpness, strength, duration, rise time and decay time. Then, the sensor sends these features to our cloud servers as part of a data packet that includes the location coordinates of the reporting sensor and the precise time-of-arrival and angle-of-arrival of the sound.

When the data reaches our cloud servers, our software assesses whether three or more of our outdoor sensors detected the same sound impulse and, if so, multilaterates the location coordinates of the sound source based on the time of arrival and the angle of arrival of the sound. The software then verifies that the data is mathematically consistent with the sound having originated at a single location. The accuracy of the coordinates derived from our proprietary software is significantly improved when more than three sensors participate, as is typically the case. We deploy our sensor arrays such that, on average, eight sensors participate in the detection of a gunshot.

After the software determines the location of the sound source, the machine classifier algorithms analyze the pulse features to determine if the sound is likely to be gunfire. Our algorithms consider pulse features, the distance from the sound source, pattern matching and other heuristic methods to evaluate and classify the sound. The machine classifier is periodically trained and validated against a large database of known gunfire and other community sounds that are impulsive in nature. We continue to add new data to our machine learning database from the incidents reviewed by our acoustic experts in our IRC process. Classification continuously improves as the machine classifiers are re-trained using the expanded data set.

Once an incident is classified as likely gunfire, it is sent to the acoustic experts in our IRC for additional analysis and confirmation. Along with confirming an incident is gunfire, our acoustic experts also annotate the alerts with additional information that may be helpful to first responders, such as whether there are multiple shooters or if a high-capacity or fully automatic weapon is being used. Incident notifications are sent when the incident is confirmed as gunfire by one of our acoustic experts. Alerts are delivered by SMS text and push notifications and also through our mobile applications. The time from outdoor trigger-pull to a notification being sent to our customers is typically 45 seconds or less.

ShotSpotter Missions combines historical crime data ingested through agency Computer-Aided Dispatch (“CAD”) and Record Management System (“RMS”) feeds along with temporal, location and event-based inputs to create crime forecasts. The system ingests multiple years’ worth of agency data and is “trained” using machine learning to determine correlations across variables. The models are then tested against recent crime data to calibrate forecast accuracy.

The ShotSpotter Missions system is flexible enabling agencies to select which crime types to forecast and weight them based on police and community priorities. Mission duration and suggested tactics are configured with police input. Upon deployment, new missions are created for every patrol shift and beat using colored boxes overlayed on a map to indicate discrete areas of high risk for particular crime types. These mission areas enable focused, directed and visible patrol presence to deter crime.

Intelligent Sensors

Our rugged gunshot detection sensor is an intelligent, internet-enabled device that is specially built to ignore ambient noise and respond to impulsive sounds, accurately time-stamping their arrival times. Advanced digital signal processing algorithms filter out background sounds such as traffic, and extract pulse features from the audio signal that, along with the time and angle of arrival of the sound, are sent to our servers where algorithms compute the location of the sound source.

The sensors do not have the ability to live stream audio. Typically, sounds, noises or voices captured on the secure sensors are cached temporarily but are written over and permanently deleted within 48-72 hours. When a sensor is triggered by an impulsive sound, it creates a potential gunshot “incident” that contains a recording including no more than two seconds before the incident and four seconds after the incident. This audio snippet is preserved indefinitely for potential evidentiary use.

Our sensors are designed and tested against international standards for installation in unprotected outdoor environments. Special consideration is given to minimize the sound of wind, rain and hail, which could otherwise limit the range of detection and produce false results. Environmental condition tests performed on the sensors include temperature cycling, temperature soak, shock, vibration, salt fog and moisture ingress protection.

We typically design and deploy arrays of 20 to 30 sensors per square mile taking into consideration the unique acoustic environment in which we are deploying. The cumulative experience of deploying in various cities with different acoustic properties has provided a distinct advantage in tailoring our sensor arrays to perform at high levels. We have full telemetry to each sensor that provides detailed heartbeat data to our system to monitor each sensor's health and availability. Sensor firmware is maintained with over-the-air updates. Because we purposely over-deploy our sensor arrays, multiple sensors can be offline at any given time without affecting the overall performance of the system.

Incident Review Center

Our IRC operates 24 hours a day, seven days a week, 365 days a year. When a loud impulsive sound triggers enough of our outdoor sensors that an incident is detected and located, audio from the incident is sent to our IRC via secure, high-speed network connections for real-time confirmation. Within seconds of an incident, one of our acoustic experts analyzes audio data and recordings of the potential gunfire. When gunfire is confirmed, our IRC team sends an alert directly to emergency dispatch centers and field personnel through any computer or mobile device with access to the Internet. This process typically takes less than 45 seconds from the time of the gunshot. Alerts include:

- the precise location of gunfire, including both latitude/longitude and street address;
- the number and exact time of shots fired;
- the number of shooters; and
- if detectable, the use of fully automatic or high-capacity weapons.

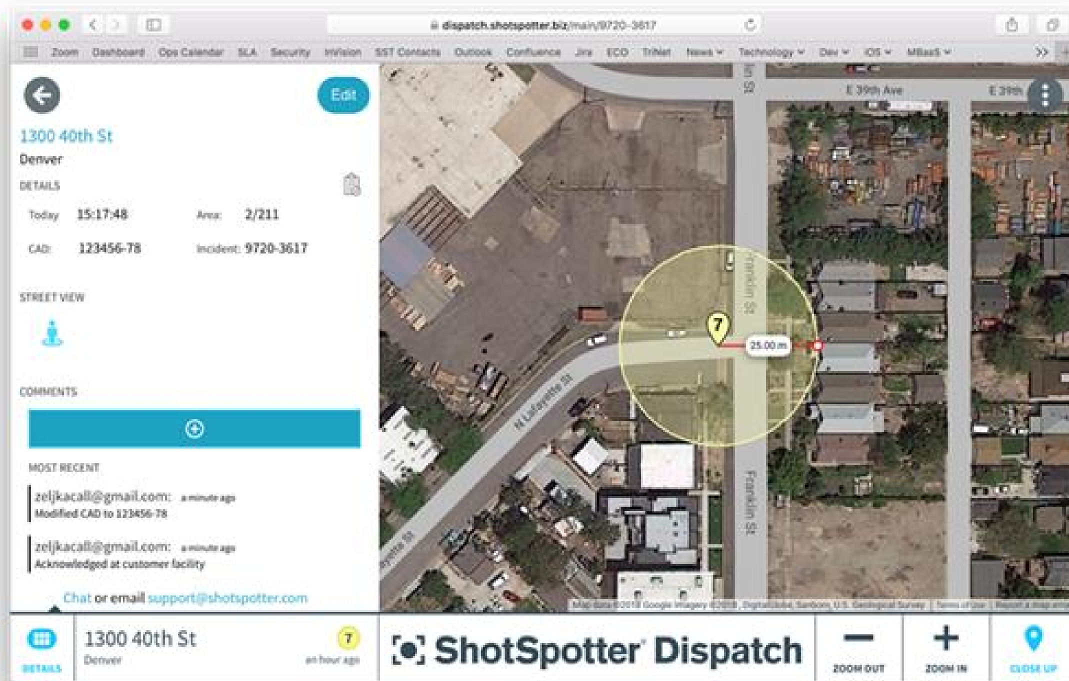
Our IRC operates primarily out of our principal facilities in Newark, California and receives audio from incidents detected by our outdoor sensors regardless of where such incidents occur. Although our IRC currently operates at a single location, our trained personnel can perform IRC functions from any location that has a high-speed internet connection.

Gunshot Detection Alerts

Our alerts are delivered in the following forms:

ShotSpotter Dispatch

Our IRC sends real-time notifications of outdoor gunfire incidents to the ShotSpotter Dispatch application, which is the user interface designed for emergency dispatch centers. In addition, alerts can also be sent directly to field personnel using the ShotSpotter Respond application installed on computers in police cars.



Through the ShotSpotter applications, the alert provides the type of gunfire (single-round or multiple-round), a unique identification number (Flex ID number), a date and time of the muzzle blast (trigger time), nearest address to the precise latitude and longitude of the gunfire, number of shots and police district and beat identification. The alert also includes an audio clip of the incident.

One of our acoustic experts may add other contextual information related to the incident such as the possibility of multiple shooters, high-capacity or fully automatic weapons, and the shooter's location relative to a building (for example, in the front or back yard or in the street). An audit trail of the time the alert was published to and acknowledged by our customer is also contained in the report. Any notes added by 911 dispatchers are time- and date-stamped and indicate the operator's identification.

ShotSpotter Respond

We also offer a robust mobile application, for customers using iPhone and Android devices. This application allows field personnel to directly receive immediate alerts of outdoor gunshots and related critical information. The alert provides the type of gunfire (single-round or multiple-round), a unique identification number (Flex ID number),

a date and time of the muzzle blast (trigger time), nearest address to the location of the gunfire, number of shots and police district and beat identification. The alert also includes an audio clip of the incident.

Apple Watch®

iPhone® iOS

Android Watch

Android

Real-time alert data with respect to gunshots can also be delivered to customers through email or SMS text messages.

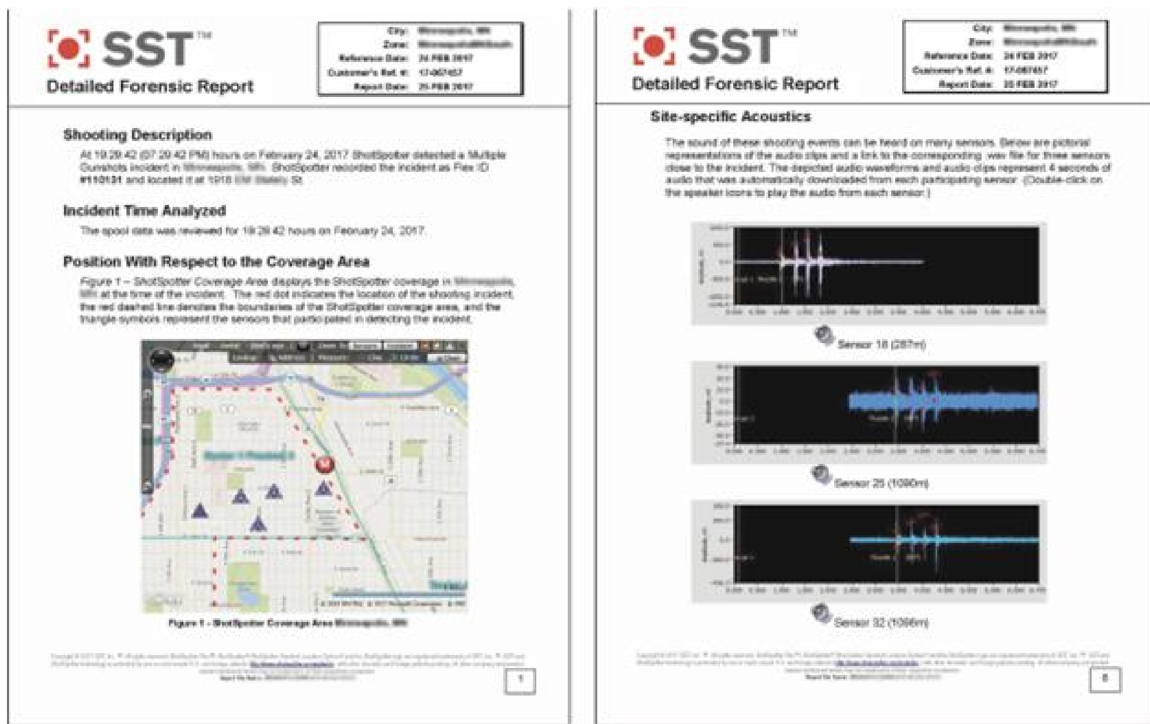
Other Applications and Services

Investigator Portal

All historical incident data in our database can be viewed, searched, sorted, and filtered using the Investigator Portal. The Investigator Portal can create reports for single incidents or groups of incidents. Filter settings may be used to select incidents grouped into a single report. Any predefined reports may be viewed, printed, or the raw data exported for use in third-party applications. The Investigator Portal also includes the ability to save audio clips to any recordable media.

Forensic Reports and Certified Expert Witness Services

Our gunshot data is also useful for detailed forensic analysis that helps reveal and clarify what actually occurred during a gunfire incident, including the identification of certain weapon types, the number and specific time of each individual round fired, the number of shooters involved and the changes in location and direction of shooters in motion. Because our solutions provide an exact time, location and audio recording of a gunshot, we are able to provide authorities with critical evidence for investigations and prosecutions.



As part of our solution, we offer Detailed Forensic Reports (“DFRs”). These provide law enforcement personnel and prosecutors with comprehensive, court-admissible analysis of a shooting incident, including the gunfire audio. We also offer expert witness testimony to introduce the forensic analysis of the DFRs at trial and to provide technical expertise regarding our technology. Our forensic evidence has been admitted in over 100 criminal prosecutions throughout the United States. Our technology and the forensic results achieved from it have been found to be admissible in numerous states, adhering to either the Frye or Daubert expert testimony standard, including Minnesota, Nebraska, Pennsylvania, California, Missouri, New York, Colorado, Indiana and New Jersey.

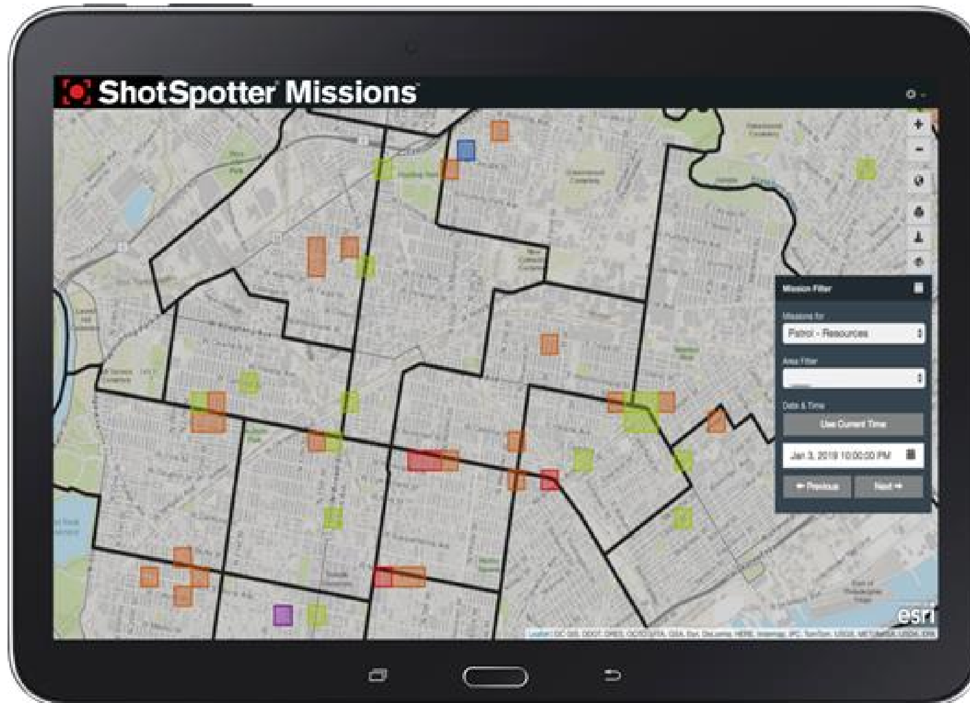
ShotSpotter Missions

ShotSpotter Missions uses artificial intelligence-driven analysis to help strategically plan patrol missions and tactics for maximum crime deterrence. The software-based tool provides:

- crime forecasting and mission planning enabling more precise deployment of patrol resources;
- dosage and tactic guidance by crime type to avoid oversaturation; and
- report on mission activity and tactics for command staff.

The system combines historical crime data ingested through agency CAD and RMS feeds along with temporal, location and event-based inputs to create crime forecasts. The system ingests multiple years' worth of agency data and is "trained" using machine learning to determine correlations across variables. The models are then tested against recent crime data to calibrate forecast accuracy.

The Missions system is flexible enabling agencies to select which crime types to forecast and weight them based on police and community priorities. Mission duration and suggested tactics are configured with police input. Upon deployment, new missions are created for every patrol shift and beat using colored boxes overlayed on a map to indicate discrete areas of high risk for particular crime types. These mission areas enable focused, directed and visible patrol presence to deter crime.



Deployment and Customer Success

When we deploy new ShotSpotter Flex, ShotSpotter SiteSecure and ShotSpotter SecureCampus solutions, we install our outdoor sensors in a specified coverage area according to our contract with the customer. As an initial step, we perform site surveys of the coverage area to design a sensor array, which typically consist of 20 to 30 sensors per square mile. We typically install sensors on the highest buildings in the area, but we may also use existing infrastructure assets such as light poles. Once permission for installation is obtained, we typically engage local electricians to install the sensors and perform required maintenance.

Given the specialized nature of our market, a key component of our strategy is to maintain our passionate focus on customer success. We pride ourselves on our execution in customer on-boarding as well as ongoing consulting and customer support, all of which is critical to ensure not only high customer retention rates but new customer acquisitions. We implement our customer success initiative early in the sales process in order to ensure that we are aligned with the customer's objectives and can positively impact their defined outcomes. For example, during deployment, our customer success team, consisting of experienced law enforcement professionals, provides on-site training to the customer's officers, dispatchers and investigators, including training on how to use the solution and best practices for optimal results. We apply consultative best practices and policy development at the command staff level as well as tactical training for field patrol officers. All of our efforts are focused on driving positive measurable outcomes on gun violence reduction and prevention.

Our IRC and customer service organizations provide continuous outdoor incident classification and technical support 24 hours a day, seven days a week, 365 days a year. The nature of our outdoor incident classification process provides ongoing and significant touchpoints with our customers through our published alerts. We also interact with our customers through email, chat and telephone inquiries, and monitor our customers' local news feeds and radio dispatch traffic in order to remain aware of their violence prevention activities.

Our customer success team is responsible for conducting periodic in-person account reviews that detail all aspects of the services provided, including outcomes generated and areas for future improvement. We believe that these account reviews, along with our formalized on-boarding customer success program, are largely responsible for our high net promoter score ("NPS"). We obtain our NPS by conducting surveys to measure customer loyalty and satisfaction. We believe a high NPS indicates a substantial competitive advantage in facilitating customer acquisition and retention and increases customer lifetime value.

Customers

We generate annual subscription revenues from the deployment of our public safety solution on a per-square-mile basis. As of December 31, 2018, we had coverage areas under contract of approximately 670 square miles in the aggregate, of which 648 miles have gone live, which included 100 cities and 10 campuses and other sites across the United States and South Africa, including three of the ten largest cities in the United States. Since transitioning our public safety business to the ShotSpotter Flex model in 2011, we have added over 60 new ShotSpotter Flex customers, but only six such customers have terminated service, two of which were terminated due to hurricane damage in 2017. For the year ended December 31, 2018, our two largest customers, City of Chicago and City of New York accounted for 22% and 15% of our revenue, respectively. The City of New York accounted for 18% of our total revenues for the year ended December 31, 2017, and accounted for 12% of our total revenues for the year ended December 31, 2016. Puerto Rico Housing Administration accounted for 12% of our total revenue for the year ended December 31, 2016.

Sales

We sell our solutions through our direct sales teams. Our sales teams focus on both new customer acquisition, customer renewal and coverage expansion. Our public safety solution sales team identifies communities with the opportunity to benefit from our solutions, communicates with key stakeholders, navigates the challenges associated with our customers' complex funding and sales cycles, and establishes a foundation for a successful customer relationship. In addition, our sales team works with customers to identify and procure funds from alternate sources, including state and federal government grants. Our security solutions sales team focuses primarily on college and university campuses, typically with the head of campus security, but also by engaging with boards of regents, budget office personnel and other campus stakeholders. We intend to continue to invest in building a global sales organization as we further penetrate the market for ShotSpotter Flex and expand the customer base for our security solutions.

At times, we may sell our solutions through channel partners as part of "Smart Cities" initiatives. To help integrate our solutions with other services in this space and to take advantage of current and emerging technologies, we seek to enter into alliances with leading companies focused on such initiatives. For example, in early 2017 we entered into a partnership with GE Current to integrate our outdoor sensors, along with other technologies, into street lighting systems that help cities collect data and improve their operations. In 2018, we entered into an agreement with Verizon to bring the ShotSpotter solution to cities by leveraging Verizon's Light Sensory Network, an IoT platform deployed on street lights. By integrating our solutions with GE Current's and Verizon's systems, we believe we will expand our coverage. In August of 2018, we entered into an agreement with Verizon, where they may sell our Flex solutions as a reseller, in addition to the solution bundled with their Light Sensory Network.

Marketing

We focus our marketing efforts on the strength of our ShotSpotter brand and the unique features and benefits of our solutions.

Our approach and capabilities in marketing improved significantly in 2018 as we brought on veteran leadership and invested resources to expand the team, acquired new automation tools and developed and launched targeted programs across multiple stakeholder groups that can influence a sale. The focus of the team is two-fold: to drive new, qualified leads into the pipeline enabling the sales team to focus on closing deals, and to accelerate existing deals reducing time to revenue.

We have developed several innovative programs that target influencers including initiatives to encourage healthcare systems to advocate for and/or fund ShotSpotter deployments in their cities as well as a program to activate residents of ShotSpotter prospect cities to advocate to city officials for programs and technologies that reduce gun violence including ShotSpotter.

We continue to invest in creating a presence at key events and conferences throughout the year where we can personally engage with customers, prospects and influencers such as mayors, city managers, and trauma surgeons. The face-to-face interactions are invaluable for introducing our value proposition, establishing relationships and building trust.

We continue to benefit from significant television, print and online press that is generated at little to no cost. Members of the media have access to a self-serve, comprehensive media kit to easily insert video and photos that depict the service and its benefits in a compelling fashion to enhance broadcast TV segments and print/online articles. We were mentioned in over 8,500 articles in 2018 - the majority of which were organically generated. In addition, we were mentioned in numerous broadcast TV and radio segments. The free exposure creates awareness for our system and lends credibility to our market leadership position.

Research and Development

We focus our research and development efforts on enhancing our advanced signal processing and classification algorithms, updating our sensor hardware technology, reducing manufacturing costs, developing mobile, web and desktop applications, evolving our cloud-deployed back-end infrastructure and integration with "smart cities" initiatives. ShotSpotter Missions crime forecasting uses machine learning and has led to additional investment in data science resources. As of December 31, 2018, we had 18 employees in our research and development organization. In addition, we engage in research and development activities with manufacturing partners and outsource certain activities to engineering firms to further supplement our internal team. Our research and development team is increasingly focused on exploring the use of our data sets to conduct cognitive analysis and artificial intelligence integration.

Competition

The markets for public safety and security solutions are highly fragmented and evolving. Whether installed in local communities, on critical infrastructure or on a campus, for a gunfire detection system to be effective, the protection zone must be comprehensive. We believe our gunshot detection solutions represent the most effective public safety and security solutions on the market.

We compete on the basis of a number of factors, including:

- product functionality, including the ability to cover broad outdoor geographic spaces;
- solution performance, including the rapid capture of multiple acoustic incidents and accuracy;
- ease of implementation, use and maintenance;
- total cost of ownership; and
- customer support and customer success initiatives.

ShotSpotter Flex Solution Competitors

Our ShotSpotter Flex solution is unique because it provides scalable wide area gunshot detection over large and geographically diverse areas, provides immediate and precise data on gunfire, helps communities define the scope of illegal gunfire, and provides cities with detailed forensic data for investigation, prosecution and analysis. While we are not aware of any direct competitors offering wide-area solutions comparable to ShotSpotter Flex, we believe the primary competitors in the broader gunfire detection space are Rafael Advanced Defense Systems Ltd., Raytheon Company, V5 Systems, Safety Dynamics, Inc., EAGL Technology, Shooter Detection Systems and Thales Group.

Most of these other outdoor solutions on the market offer limited scope point protection, proximity sensors, or “counter-sniper systems.” These systems are designed primarily for covering small areas, or for defined military or SWAT team applications, where the target is known in advance and it is possible to put a sensor directionally toward the target. However, urban areas and critical infrastructure require a wider system of protection that can cover a large area.

Although there are not direct competitors for our ShotSpotter Flex solution that are of concern, we do compete with other possible uses of the limited funding available to our ShotSpotter Flex customers. Because law enforcement agencies or government entities have limited funds, they may have to choose among resources or solutions that help them to meet their overall mission. Accordingly, we compete not only with our customers’ internal budget decisions, but with numerous companies vying for these limited funds, including Everbridge, Inc. and Axon Enterprises, Inc., among others. We believe that in areas with significant levels of gun activity, ShotSpotter Flex is uniquely positioned to assist customers in interrupting, detecting and preventing gun violence.

Security Solutions Competitors

Our security solutions business operates in a highly competitive environment. In addition to other gunfire detection companies, we may face competition from companies offering alternative security technologies, such as video surveillance, access control, alarm and lighting systems. The direct competitors for security solutions include the Guardian system by Shooter Detection Systems LLC, SENTRI by Safety Dynamics Inc., V5 Systems, FireFly by EAGL, and AmberBox, Inc. We believe none of our security solutions competitors is able to offer the comprehensive outdoor coverage we offer.

ShotSpotter Missions Solution Competitors

ShotSpotter Missions operates in a developing and potentially competitive environment. In addition to control management and data analytics customers companies, we may face competition from companies offering alternative solutions as well as solutions developed internally by our customers. The direct competitors to our Missions solution include PredPol, Inc., CivicScape, LLC and may include other CAD/RMS providers and other third-party solutions providers, such as Genentech, Inc., CentralSquare Technologies and Motorola Solutions, Inc.

Intellectual Property

Our future success and competitive position depend in part on our ability to protect our intellectual property and proprietary technologies. To safeguard these rights, we rely on a combination of patent, trademark, copyright and trade secret laws, and contractual protections in the United States and other jurisdictions.

As of December 31, 2018, we had 32 issued patents, 31 in the United States and one in Israel, as well as patent applications pending for examination in the United States, Europe, Brazil and Mexico.

The issued patents expire on various dates from 2022 to 2034. We also license one patent from a third party, which expires in 2023.

We also license software from third parties for integration into our offerings, including open source software and other software available on commercially reasonable terms. We cannot assure you that such third parties will maintain such software or continue to make it available.

Facilities

Our principal facilities consist of office space for our corporate headquarters in Newark, California, where we occupy approximately 12,020 square feet of space under a lease that expires in October 2021.

We lease our facilities and do not own any real property. We may procure additional space as we add employees and expand geographically. We believe that our facilities are adequate to meet our needs for the immediate future and that should it be needed, suitable additional space will be available to accommodate expansion of our operations.

Employees

As of December 31, 2018, we had 96 full-time and five part-time employees, of which 17 were in sales and marketing, 12 were in general and administrative functions, 18 in research and development and 54 in operations, customer support and customer success. None of our employees is represented by a labor union or covered by collective bargaining agreements. We consider our relationship with our employees to be good.

Segment and Geographic Information

Information about segment reporting and long-lived assets is set forth in Note 3 of our Notes to Consolidated Financial Statements included in “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K. Total revenues generated outside the United States were derived from our customer located in South Africa and were $0.9 million, $0.8 million and $0.4 million, in the years ended December 31, 2018, 2017 and 2016, respectively. Substantially all of our non-monetary long-lived assets are located in the United States. For a discussion of risks related to our international operations, see the risk factors set forth in Part I, Item 1A of this Annual Report on Form 10-K.

Corporate Information

We were formed as ShotSpotter, Inc., a California corporation, in 2001 and reincorporated as ShotSpotter, Inc., a Delaware corporation, in 2004. We run our operations through ShotSpotter, Inc. as well as through ShotSpotter (Pty) Ltd., our wholly-owned subsidiary based in South Africa. We also do business as “SST” pursuant to a registered trade name.

Our principal executive offices are located at 7979 Gateway Boulevard, Suite 210, Newark, California 94560 and our telephone number is (510) 794-3100. Our website address is www.shotspotter.com. The information contained on, or that can be accessed through, our website is not incorporated by reference into this Annual Report on Form 10-K, and you should not consider any information contained on, or that can be accessed through, our website as part of this Annual Report on Form 10-K.

ShotSpotter, the ShotSpotter logo, ShotSpotter Missions, ShotSpotter Flex, ShotSpotter SecureCampus, ShotSpotter SiteSecure, and other trade names, trademarks or service marks of ShotSpotter appearing in this Annual Report on Form 10-K are the property of ShotSpotter, Inc. Trade names, trademarks and service marks of other companies appearing in this Annual Report on Form 10-K are the property of their respective holders.

Where You Can Find More Information

You can read our SEC filings, including this Annual Report on Form 10-K, over the internet at the SEC’s website at www.sec.gov. You may also read and copy any document we file with the SEC at its public reference facilities at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of these documents at prescribed rates by writing to the Public Reference Section of the SEC at 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

We are subject to the information reporting requirements of the Exchange Act, and we are required to file reports, proxy statements and other information with the SEC. These reports, proxy statements and other information are available for inspection and copying at the public reference room and website of the SEC referred to above. We also maintain a website at www.shotspotter.com, at which you may access these materials, free of charge, as reasonably practicable after they are electronically filed with, or furnished to, the SEC. We are not, however, including the information contained on our website, or information that may be accessed through links on our website, as part of, or incorporating such information by reference into, this Annual Report on Form 10-K.

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, including our consolidated financial statements and related notes, before deciding whether to purchase shares of our common stock. If any of the following risks is realized, our business, operating results, financial condition and prospects could be materially and adversely affected. In that event, the price of our common stock could decline, and you could lose part or all of your investment. Moreover, the risks described below are not the only ones that we face. Additional risks not presently known to us or that we currently deem immaterial may also affect our business, operating results, prospects or financial condition. You should carefully consider these risk factors, together with all of the other information included in this Annual Report on Form 10-K as well as our other publicly available filings with the SEC.

Risks Related to Our Business and Industry

Our success depends on maintaining and increasing our sales, which depends on factors we cannot control, including the availability of funding to our customers.

To date, substantially all of our revenues have been derived from contracts with local governments and their agencies, in particular the police departments of major cities in the United States. To a lesser extent, we also generate revenues from federal agencies, foreign governments and higher education institutions. We believe that the success and growth of our business will continue to depend on our ability to add new police departments and other government agencies as customers of our public safety solution and new universities, corporate campuses and key infrastructure and transportation centers as customers of our security solutions. Many of our target customers have restricted budgets, such that we are forced to compete with programs or solutions that offer an alternative use of the same funds. A number of factors could cause potential customers to delay or refrain from purchasing our solutions or prevent expansion of their use of our solutions, including:

- decreases or changes in available funding, including budgetary allocations, government grants and other government funding programs;
- potential delays or changes in appropriations or other funding authorization processes;
- changes in fiscal or contracting policies;
- changes in elected or appointed officials; and
- changes in laws or public sentiment regarding privacy or surveillance.

The occurrence of any of the foregoing would impede our ability to maintain or increase the amount of revenues derived from these customers, which could have a material adverse effect on our business, operating results and financial condition.

Contracting with government entities can be complex, expensive and time-consuming.

The procurement process for government entities is in many ways more challenging than contracting in the private sector. We must comply with laws and regulations relating to the formation, administration, performance and pricing of contracts with government entities, including U.S. federal, state and local governmental bodies. These laws and regulations may impose added costs on our business or prolong or complicate our sales efforts, and failure to comply with these laws and regulations or other applicable requirements could lead to claims for damages from our customers, penalties, termination of contracts and other adverse consequences. Any such damages, penalties, disruptions or limitations in our ability to do business with government entities could have a material adverse effect on our business, operating results and financial condition.

Government entities often require highly specialized contract terms that may differ from our standard arrangements. For example, if the federal government provides grants to certain state and local governments for our solutions, and such governments do not continue to receive these grants, then these customers have the ability to terminate their contracts with us without penalty. Government entities often impose compliance requirements that are complicated, require preferential pricing or "most favored nation" terms and conditions, or are otherwise time-consuming and expensive to satisfy. Compliance with these special standards or satisfaction of such requirements

could complicate our efforts to obtain business or increase the cost of doing so. Even if we do meet these special standards or requirements, the increased costs associated with providing our solutions to government customers could harm our margins. Additionally, even once we have secured a government contract, the renewal process can be lengthy and as time-consuming as the initial sale, and we may be providing our service for months past the contract expiration date without certainty if the renewal agreement will be signed or not.

Changes in the underlying regulatory conditions, political landscape or required procurement procedures that affect these types of customers could be introduced prior to the completion of our sales cycle, making it more difficult or costly to finalize a contract with a new customer or expand or renew an existing customer relationship. For example, customers may require a competitive bidding process with extended response deadlines, review or appeal periods, or customer attention may be diverted to other government matters, postponing the consideration of the purchase of our products. Such delays could harm our ability to provide our solutions efficiently and to grow or maintain our customer base.

If we are unable to maintain and expand coverage of our existing public safety customer accounts and further penetrate the public safety market, our revenues may not grow.

Our ability to increase revenues will depend in large part on our existing public safety solution customers renewing their annual subscriptions and expanding their mileage coverage. Most of our ShotSpotter Flex customers begin using our solution in a limited coverage area. Our experience has been, and we expect will continue to be, that after the initial implementation of our solutions, our new customers typically renew their annual subscriptions, and many also choose to expand their coverage area. If our existing customers do not renew their subscriptions, our revenues may decrease. However, some customers may choose to not renew or reduce their coverage. For example, as a result of widespread destruction caused by hurricanes in Puerto Rico and the U.S. Virgin Islands, in September 2017, we discontinued our service to our customers in coverage areas in those locations and we classified the contracts as expired because the customers were no longer live. At the time, the Housing Authority of Puerto Rico had been one of our largest customers. We cannot be certain when or if our customers in Puerto Rico and the U.S. Virgin Islands will recover their infrastructure and become live customers again. If other existing customers do not choose to renew or expand their coverage areas, our revenues will not grow as we anticipate.

Our ability to further penetrate the market for our public safety solutions depends on several factors, including: maintaining a high level of customer satisfaction and a strong reputation among law enforcement; increasing the awareness of our ShotSpotter Flex and ShotSpotter Missions solutions and their benefits; the effectiveness of our marketing programs; the availability of funding to our customers; and the costs of our solutions. Some potential public safety customers may be reluctant or unwilling to use our solution for a number of reasons, including concerns about additional costs, unwillingness to expose or lack of concern regarding the extent of gun violence in their community, uncertainty regarding the reliability and security of cloud-based offerings or lack of awareness of the benefits of our public safety solutions. If we are unsuccessful in expanding the coverage of ShotSpotter Flex by existing customers or adding new ShotSpotter Flex customers, our revenues and growth prospects would suffer.

If we are unable to sell our solutions into new markets, our revenues may not grow.

Part of our growth strategy depends on our ability to increase sales of our security solutions and add new customers for our public safety solution in markets outside of the United States. Any new market into which we attempt to sell our solutions may not be receptive. For example, while we have seen growing interest in our security solutions, interest in the indoor gunshot detection offering has been limited. We see greater opportunity in outdoor coverage and in 2018 we made the strategic decision to discontinue indoor coverage as part of our service offering.

Our ability to successfully face these challenges depends on several factors, including increasing the awareness of our solutions and their benefits; the effectiveness of our marketing programs; the costs of our solutions; our ability to attract, retain and effectively train sales and marketing personnel; and our ability to develop relationships with communication carriers and other partners. If we are unsuccessful in developing and marketing our solutions into new markets, new markets for our solutions might not develop or might develop more slowly than we expect, either of which would harm our revenues and growth prospects.

Our sales cycle can be lengthy, time-consuming and costly, and our inability to successfully complete sales could harm our business.

Our sales process involves educating prospective customers and existing customers about the use, technical capabilities and benefits of our solutions. Prospective customers, especially government agencies, often undertake a prolonged evaluation process that may last up to nine months or more and that typically involves comparing the benefits of our solutions to alternative uses of funds. We may spend substantial time, effort and money on our sales and marketing efforts without any assurance that our efforts will produce any sales.

Additionally, events affecting our customers' budgets or missions may occur during the sales cycle that could negatively impact the size or timing of a purchase after we have invested substantial time, effort and resources into a potential sale, contributing to more unpredictability in the growth of our business. If we are unable to succeed in closing sales with new and existing customers, our business, operating results and financial condition will be harmed.

Changes in the availability of federal funding to support local law enforcement efforts could impact our business.

Many of our customers rely to some extent on funds from the U.S. federal government in order to purchase and pay for our solutions. Any reduction in federal funding for local law enforcement efforts could result in our customers having less access to funds required to continue, renew, expand or pay for our solutions. For example, changes in policies with respect to "sanctuary cities" may result in a reduction in federal funds available to our current or potential customers. If federal funding is reduced or eliminated and our customers cannot find alternative sources of funding to purchase our solutions, our business will be harmed.

If our business does not grow as we expect, or if we fail to manage our growth effectively, our operating results and business prospects would suffer.

Our ability to successfully grow our business depends on a number of factors including our ability to:

- accelerate our acquisition of new customers;
- further sell expansions of coverage areas to our existing customers;
- expand our international footprint;
- expand into new vertical markets, such as our security solutions;
- increase awareness of the benefits that our solutions offer; and
- maintain our competitive and technology leadership position.

As usage of our solutions grows, we will need to continue to make investments to develop and implement new or updated solutions, technologies, security features and cloud-based infrastructure operations. In addition, we will need to appropriately scale our internal business systems and our services organization, including the suppliers of our detection equipment and customer support services, to serve our growing customer base. Any failure of, or delay in, these efforts could impair the performance of our solutions and reduce customer satisfaction.

Further, our growth could increase quickly and place a strain on our managerial, operational, financial and other resources, and our future operating results depend to a large extent on our ability to successfully manage our anticipated expansion and growth. To manage our growth successfully, we will need to continue to invest in sales and marketing, research and development, and general and administrative functions and other areas. We are likely to recognize the costs associated with these investments earlier than receiving some of the anticipated benefits, and the return on these investments may be lower, or may develop more slowly, than we expect, which could adversely affect our operating results.

If we are unable to manage our growth effectively, we may not be able to take advantage of market opportunities or develop new solutions or upgrades to our existing solutions, satisfy customer requirements, maintain the quality and security of our solutions or execute on our business plan, any of which could have a material adverse effect on our business, operating results and financial condition.

Our business is dependent upon our ability to deploy and deliver our solutions, and the failure to meet our customers' expectations could harm our reputation, which may have a material adverse effect on our business, operating results and financial condition.

Promoting and demonstrating the utility of our solutions as useful, reliable and important tools for law enforcement and security personnel is critical to the success of our business. Our ability to secure customer renewals and enter into new customer contracts is dependent on our reputation and our ability to deliver our solutions effectively. We believe that our reputation among police departments using ShotSpotter Flex is particularly important to our success. Our ability to meet customer expectations will depend on a wide range of factors, including:

- our ability to continue to offer high-quality, innovative and accurate gunshot detection services;
- our ability to maintain continuous monitoring during high outdoor-noise activity periods such as New Year's Day, the Fourth of July and Cinco de Mayo;
- our ability to maintain high customer satisfaction, including meeting our SLA standards;
- the perceived value and quality of our solutions;
- differences in opinion regarding the metrics that measure the success of our solutions;
- our ability to successfully communicate the unique value proposition of our solutions;
- our ability to provide high-quality customer support;
- any misuse or perceived misuse of our solutions;
- interruptions, delays or attacks on our platform;
- litigation- or regulation-related developments; and
- damage to or degradation of our sensors or sensor network by third parties.

Furthermore, negative publicity, whether or not justified, relating to events or activities attributable to us, our solutions, our employees, our partners or others associated with any of these parties, may tarnish our reputation. Damage to our reputation may reduce demand for our solutions and would likely have a material adverse effect on our business, operating results and financial condition. Moreover, any attempts to rebuild our reputation may be costly and time-consuming, and such efforts may not ultimately be successful.

Interruptions or performance problems associated with our technology and infrastructure may adversely affect our business and results of operations.

We have in the past experienced, and may in the future experience, performance issues due to a variety of factors, including infrastructure changes, human or software errors, intentional or accidental damage to our technology (including sensors), website or third-party hosting disruptions or capacity constraints due to a number of potential causes including technical failures, natural disasters or security attacks. If our security is compromised, our platform is unavailable or our users are unable to receive our alerts or otherwise communicate with our IRC, within a reasonable amount of time or at all, our business could be negatively affected. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time.

In addition, our IRC is located in a single facility. Although the functions of our IRC can be performed remotely, any interruption or delay in service from our IRC, such as from a communications or power outage, could limit our ability deliver our solutions. In addition, it may become increasingly difficult to maintain and improve the performance of our solutions, especially during peak usage times as the capacity of our IRC operations reaches its limits. If there is an interruption or delay in service from our IRC and a gunshot is detected but not reviewed in the allotted time, our software will queue the incident for off line review. This may result in delayed notifications to our customers and as a result, we could experience a decline in customer satisfaction with our solutions and our reputation and growth prospects could be harmed.

We expect to continue to make significant investments to maintain and improve the performance of our solutions. To the extent that we do not effectively address capacity constraints, upgrade our systems as needed and continually develop our technology to accommodate actual and anticipated changes in technology, our business, operating results and financial condition may be adversely affected.

We rely on wireless carriers to provide access to wireless networks through which our acoustic sensors communicate with our cloud network and with which we provide our notification services to customers, and any interruption of such access would impair our business.

We rely on wireless carriers, mainly AT&T and Verizon, to provide access to wireless networks for machine-to-machine data transmissions, which are an integral part of our services. Our wireless carriers may suspend wireless service to expand, maintain or improve their networks. These wireless carriers perform routine maintenance and periodic software and firmware updates that may damage our sensors or make them inoperable. Any suspension or other interruption of services would adversely affect our ability to provide our services to our customers and may adversely affect our reputation. In addition, the terms of our agreements with these wireless carriers provide that either party can cancel or terminate the agreement for convenience with 90 days' notice. If one of our wireless carriers were to terminate its agreement with us, we would need to source a different wireless carrier and/or modify our equipment during the notice period in order to minimize disruption in the performance of our solutions. Price increases or termination by our wireless carriers or changes to existing contract terms could have a material adverse effect on our business, operating results and financial condition.

We may be unable to continue delivery of our solutions due to natural disasters, power outages or other events impacting us or our customers, which could harm our operating results and financial condition.

We recognize revenue on a subscription basis as our solutions are provided to our customers over time. If our services are disrupted due to natural disasters, power outages or other events that we cannot control, as what had happened when hurricanes hit Puerto Rico and the U.S. Virgin Islands in 2017, we may not be able to continue providing our solutions as expected.

When we stop providing coverage, we also stop recognizing revenues as a result of the affected subscription agreement. If we are forced to discontinue our services due to natural disasters, power outages and other events outside of our control, our revenues may decline, which would negatively impact our results of operations and financial condition. In addition, we may face liability for damages caused by our sensors in the event of heavy weather or other natural disasters. We may also incur additional costs to repair or replace installed sensor networks damaged by heavy weather, hurricanes or other natural disasters.

Any of our facilities may be harmed or rendered inoperable by natural or man-made disasters, including earthquakes, tornadoes, hurricanes, wildfires, floods, nuclear disasters, acts of terrorism or other criminal activities, infectious disease outbreaks, and power outages, which may render it difficult or impossible for us to operate our business for some period of time. For example, our IRC and a data center that hosts some of our customer services are located in the San Francisco Bay Area, a region known for seismic activity. Our facilities would likely be costly to repair or replace, and any such efforts would likely require substantial time. Any disruptions in our operations could negatively impact our business and operating results, and harm our reputation. In addition, we may not carry business insurance or may not carry sufficient business insurance to compensate for losses that may occur. Any such losses or damages could have a material adverse effect on our business, operating results and financial condition. In addition, the facilities of significant vendors, including the manufacturer of our proprietary acoustic sensor, may be harmed or rendered inoperable by such natural or man-made disasters, which may cause disruptions, difficulties or material adverse effects on our business.

Real or perceived false positive gunshot alerts or failure or perceived failure to generate alerts for actual gunfire could adversely affect our customers and their operations, damage our brand and reputation and adversely affect our growth prospects and results of operations.

A false positive alert, in which a non-gunfire incident is reported as gunfire, could result in an unnecessary rapid deployment of police officers and first responders, which may raise unnecessary fear among the occupants of a community or facility, and may be deemed a waste of police and first responder resources. A failure to alert law enforcement or security personnel of actual gunfire (false negative) could result in a less rapid or no response by police officers and first responders, increasing the probability of injury or loss of life. Both false positive alerts and the failure to generate alerts of actual gunfire (false negative) may result in customer dissatisfaction, potential loss of confidence in our solutions, and potential liabilities to customers or other third parties, any of which could harm our reputation and adversely impact our business and operating results. Additionally, the perception of a false positive alert or of a failure to generate an alert, even where our customers understand that our solutions were utilized correctly, could lead to negative publicity or harm the public perception of our solutions, which could harm our reputation and adversely impact our business and operating results.

Economic uncertainties or downturns, or political changes, could limit the availability of funds available to our customers and potential customers, which could materially adversely affect our business.

Economic uncertainties or downturns could adversely affect our business and operating results. Negative conditions in the general economy both in the United States and abroad, including conditions resulting from changes in gross domestic product growth, financial and credit market fluctuations, political deadlock, natural catastrophes, such as the devastation caused by the hurricanes in Puerto Rico and U.S. Virgin Islands, warfare and terrorist attacks on the United States, Europe, the Asia Pacific region or elsewhere, could cause a decrease in funds available to our customers and potential customers and negatively affect the rate of growth of our business.

These economic conditions may make it extremely difficult for our customers and us to forecast and plan future budgetary decisions or business activities accurately, and they could cause our customers to reevaluate their decisions to purchase our solutions, which could delay and lengthen our sales cycles or result in cancellations of planned purchases. Furthermore, during challenging economic times or as a result of political changes, our customers may tighten their budgets and face constraints in gaining timely access to sufficient funding or other credit, which could result in an impairment of their ability to make timely payments to us. In turn, we may be required to increase our allowance for doubtful accounts, which would adversely affect our financial results.

We cannot predict the timing, strength or duration of any economic slowdown, instability or recovery, generally or within any particular industry, or the impact of political changes. If the economic conditions of the general economy or industries in which we operate worsen from present levels, or if recent political changes result in less funding being available to purchase our solutions, our business, operating results, financial condition and cash flows could be adversely affected.

We have not been profitable historically and may not achieve or maintain profitability in the future.

Although we had our first quarter of profitability in the fourth quarter of 2018, annually we have posted a net loss in each year since inception, including net losses of $2.7 million, $10.0 million and $6.9 million during the years ended December 31, 2018, 2017 and 2016, respectively, and expect to post a moderate net loss in the first quarter of 2019. As of December 31, 2018, we had an accumulated deficit of $97.4 million. We are not certain whether we will be able to maintain high enough volume of sales of our solutions to sustain or increase our growth or maintain profitability in the future. We also expect our costs to increase in future periods, which could negatively affect our future operating results if our revenues do not increase. In particular, we expect to continue to expend substantial financial and other resources on:

- sales and marketing, including a significant expansion of our sales organization, both domestically and internationally;
- research and development related to our solutions, including investments in our engineering and technical teams;

- acquisition of complementary technologies or businesses, such as our acquisition of HunchLab technology in October 2018;
- continued international expansion of our business; and
- general and administrative expenses, including legal and accounting expenses related to operating as a public company.

These investments may not result in increased revenues or growth in our business. If we are unable to increase our revenues at a rate sufficient to offset the expected increase in our costs, our business, operating results and financial position may be harmed, and we may not be able to maintain profitability over the long term. Additionally, we may encounter unforeseen operating expenses, difficulties, complications, delays and other unknown factors that may result in losses in future periods. If our revenue growth does not meet our expectations in future periods, our financial performance may be harmed, and we may not maintain profitability in the future.

We may require additional capital to fund our business and support our growth, and our inability to generate and obtain such capital on acceptable terms, or at all, could harm our business, operating results, financial condition and prospects.

We intend to continue to make substantial investments to fund our business and support our growth. In addition, we may require additional funds to respond to business challenges, including the need to develop new features or enhance our solutions, improve our operating infrastructure or acquire or develop complementary businesses and technologies. As a result, in addition to the revenues we generate from our business and our existing cash balances, we may need to engage in additional equity or debt financings to provide the funds required for these and other business endeavors. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Any debt financing that we may secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. We may not be able to obtain such additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be adversely affected. In addition, our inability to generate or obtain the financial resources needed may require us to delay, scale back, or eliminate some or all of our operations, which may have a material adverse effect on our business, operating results, financial condition and prospects.

The incurrence of debt may impact our financial position and subject us to additional financial and operating restrictions.

On September 27, 2018, we entered into a $10.0 million senior secured revolving credit facility with Umpqua Bank (the "Umpqua Credit Agreement"), which we intend to use for general working capital purposes. As of December 31, 2018, we had no outstanding amounts due on nor any usage of the Umpqua Credit Agreement.

Under the Umpqua Credit Agreement, we are subject to various negative covenants that limit, subject to certain exclusions, our ability to incur indebtedness, make loans, invest in or secure the obligations of other parties, pay or declare dividends, make distributions with respect to our securities, redeem outstanding shares of our stock, create subsidiaries, materially change the nature of its business, enter into related party transactions, engage in mergers and business combinations, the acquisition or transfer of Company assets outside of the ordinary course of business, grant liens or enter into collateral relationships involving company assets or reincorporate, reorganize or dissolve the Company. These covenants could adversely affect our financial health and business and future operations by, among other things:

- making it more difficult to satisfy our obligations, including under the terms of the Umpqua Credit Agreement;
- limiting our ability to refinance our debt on terms acceptable to us or at all;

- limiting our flexibility to plan for and adjust to changing business and market conditions and increasing our vulnerability;
- limiting our ability to use our available cash flow to fund future acquisitions, working capital, business activities, and other general corporate requirements; and
- limiting our ability to obtain additional financing for working capital to fund growth or for general corporate purposes, even when necessary to maintain adequate liquidity.

We are also required to maintain certain financial covenants tied to our leverage, interest charges and profitability. Our ability to meet such covenants (those negative covenants discussed in the preceding paragraph) or other restrictions can be affected by events beyond our control, and our failure to comply with the financial and other covenants would be an event of default under the Umpqua Credit Agreement. If an event of default under the Umpqua Credit Agreement, has occurred and is continuing, the outstanding borrowings thereunder could become immediately due and payable, and we would then be required to cash collateralize any letters of credit then outstanding, and the lender could refuse to permit additional borrowings under the facility. We cannot assure you that we would have sufficient assets to repay those borrowings and, if we are unable to repay those amounts, the lender could proceed against the collateral granted to them to secure such indebtedness. We have pledged substantially all of our assets as collateral, and an event of default would likely have a material adverse effect on our business.

New competitors may enter the market for our public safety solution.

If cities and other government entities increase their efforts to reduce gun violence or our solutions gain visibility in the market, companies could decide to enter into the public safety solution market and thereby increase the competition we face. In addition to other gunshot detection products, we also compete with other technologies and solutions targeting our public safety customers' resources for law enforcement and crime prevention. Our competitors could benefit from the disclosure of our data or information concerning our techniques and processes due to legal or other obligations (for example, as a result of public-records requests or subpoenas to provide information or to testify in court). Because there are several possible uses for these limited budgetary resources, if we are not able to compete successfully for these limited resources, our business may not grow as we expect, which could adversely impact our revenues and operating results.

The competitive landscape for our security solutions is evolving.

The market for security solutions for university campuses, corporate campuses and transportation and key infrastructure centers includes a number of available options, such as video surveillance and increased human security presence. Because there are several possible uses of funds for campus security needs, we may face increased challenges in demonstrating or distinguishing the benefits of ShotSpotter SecureCampus and ShotSpotter SiteSecure, our security solutions. In particular, while we have seen growing interest in our security solutions, interest in the indoor gunshot detection offering was limited. As a result, in June 2018, we made the strategic decision to no longer include indoor coverage as part of our service offering.

Failure to effectively develop and expand our sales and marketing capabilities could harm our ability to increase our customer base and achieve broader market acceptance of our solutions.

To increase total customers and customer coverage areas and to achieve broader market acceptance of our solutions, we will need to expand our sales and marketing organization and increase our business development resources, including the vertical and geographic distribution of our sales force and our teams of account executives focused on new accounts and responsible for renewal and growth of existing accounts.

Our business requires that our sales personnel have particular expertise and experience in working with law enforcement agencies, other government organizations and higher education institutions. We may not achieve revenue growth from expanding our sales force if we are unable to hire, develop and retain talented sales personnel with appropriate experience, if our new sales personnel are unable to achieve desired productivity levels in a reasonable period of time or if our sales and marketing programs are not effective.

Our strategy includes pursuing acquisitions, and our inability to successfully integrate newly-acquired technologies, assets or businesses may harm our financial results. Future acquisitions of technologies, assets or businesses, which are paid for partially or entirely through the issuance of stock or stock rights, could dilute the ownership of our existing stockholders.

We may evaluate and consider potential strategic transactions, including acquisitions of, or investments in, businesses, technologies, services, products and other assets in the future. For example, in October 2018, we acquired the HunchLab technology and related assets from Azavea Inc. We also may enter into relationships with other businesses to expand our platform and applications, which could involve preferred or exclusive licenses, additional channels of distribution, discount pricing or investments in other companies.

We believe that part of our continued growth will be driven by acquisitions of other companies or their technologies, assets, businesses and teams. The HunchLab acquisition gives rise, and any acquisitions in the future that we complete will give rise, to risks, including:

- incurring higher than anticipated capital expenditures and operating expenses;
- failing to assimilate the operations and personnel or failing to retain the key personnel of the acquired company or business;
- failing to integrate the acquired technologies, or incurring significant expense to integrate acquired technologies, into our platform and applications;
- disrupting our ongoing business;
- diverting our management's attention and other company resources;
- failing to maintain uniform standards, controls and policies;
- incurring significant accounting charges;
- impairing relationships with our customers and employees;
- finding that the acquired technology, asset or business does not further our business strategy, that we overpaid for the technology, asset or business or that we may be required to write off acquired assets or investments partially or entirely;
- failing to realize the expected synergies of the transaction;
- being exposed to unforeseen liabilities and contingencies that were not identified prior to acquiring the company; and
- being unable to generate sufficient revenue and profits from acquisitions to offset the associated acquisition costs.

Fully integrating an acquired technology, asset or business into our operations may take a significant amount of time. We may not be successful in overcoming these risks or any other problems encountered with acquisitions. To the extent that we do not successfully avoid or overcome the risks or problems related to any such acquisitions, our results of operations and financial condition could be harmed. Acquisitions also could impact our financial position and capital requirements, or could cause fluctuations in our quarterly and annual results of operations. Acquisitions could include significant goodwill and intangible assets, which may result in future impairment charges that would reduce our stated earnings. We may incur significant costs in our efforts to engage in strategic transactions and these expenditures may not result in successful acquisitions.

We expect that the consideration we might pay for any future acquisitions of technologies, assets, businesses or teams could include stock, rights to purchase stock, cash or some combination of the foregoing. If we issue stock or rights to purchase stock in connection with future acquisitions, net income per share and then-existing holders of our common stock may experience dilution.

The nature of our business exposes us to inherent liability risks.

Our solutions, including ShotSpotter Flex, ShotSpotter SecureCampus and ShotSpotter SiteSecure, are designed to communicate real-time alerts of gunfire incidents to police officers and first responders. Due to the nature of such applications, we are potentially exposed to greater risks of liability for employee acts or omissions or system failures than may be inherent in other businesses. Although substantially all of our customer agreements contain provisions limiting our liability to our customers, we cannot be certain that these limitations will be enforced or that the costs of any litigation related to actual or alleged omissions or failures would not have a material adverse effect on us even if we prevail. Further, certain of our insurance policies and the laws of some states may limit or prohibit insurance coverage for punitive or certain other types of damages or liability arising from gross negligence, or other issues, such as damages caused due to installation of our sensors on buildings owned by third parties, and we cannot assure you that we are adequately insured against the risks that we face.

The nature of our business may result in undesirable press coverage or other negative publicity.

Our solutions are used to assist law enforcement and first responders in the event that gunfire is detected. Even when our solutions work as intended, the incidents detected by our solutions could lead to injury, loss of life and other negative outcomes, and such events are likely to receive negative publicity. If we fail to detect an incident, or if we detect an incident, such as a terrorist attack or active-shooter event, but the response time of law enforcement or first responders is not sufficiently quick to prevent injury, loss of life, property damage or other adverse outcomes, we may receive negative media attention. At times, our data or information concerning our techniques and processes may become a matter of public record due to legal or other obligations (for example, as a result of public-records requests or subpoenas to provide information or to testify in court), and we may receive negative media attention as a result.

In addition, our solutions require that our customers monitor alerts and respond timely to notifications of gunshots. If our customers do not fully utilize our systems, we may be subject to criticism and unflattering media coverage regarding the effectiveness of our solutions and the cost of our solutions to our customers. Such negative publicity could have an adverse impact on new sales or renewals or expansions of coverage areas by existing customers, which would adversely impact our financial results and future prospects.

Real or perceived errors, failures or bugs in our software could adversely affect our operating results and growth prospects.

Because our software is complex, undetected errors, failures or bugs may occur. Our software is often installed and used with different operating systems, system management software, and equipment and networking configurations, which may cause errors or failures of our software or other aspects of the computing environment into which it is deployed. In addition, deployment of our software into computing environments may expose undetected errors, compatibility issues, failures or bugs in our software. Despite our testing, errors, failures or bugs may not be found in our software until it is released to our customers. Moreover, our customers could incorrectly implement or inadvertently misuse our software, which could result in customer dissatisfaction and adversely impact the perceived utility of our products as well as our brand. Any of these real or perceived errors, compatibility issues, failures or bugs in our software could result in negative publicity, reputational harm, loss of or delay in market acceptance of our software, loss of competitive position or claims by customers for losses sustained by them. In any such event, we may be required, or may choose, for customer relations or other reasons, to expend additional resources in order to correct the problem. Alleviating any of these problems could require significant expenditures of our capital and other resources and could cause interruptions or delays in the use of our solutions, which could cause us to lose existing or potential customers and could adversely affect our operating results and growth prospects.

Interruptions or delays in service from our third-party providers could impair our ability to make our solutions available to our customers, resulting in customer dissatisfaction, damage to our reputation, loss of customers, limited growth and reduction in revenues.

We currently use third-party data center hosting facilities to host certain components of our solutions. Our operations depend, in part, on our third-party providers' abilities to protect these facilities against damage or interruption from natural disasters, power or communications failures, cyber incidents, criminal acts and similar events. In the event that any of our third-party facility arrangements is terminated, or if there is a lapse of service or damage to a facility, we could experience service interruptions in our solutions as well as delays and additional expenses in arranging new facilities and services. Any changes in third-party service levels at our data centers or any errors, defects, disruptions, cyber incidents or other performance problems with our solutions could harm our reputation.

Any damage to, or failure of, the systems of our third-party providers could result in interruptions to our solutions. Despite precautions taken at our data centers, the occurrence of spikes in usage volume, natural disasters, cyber incidents, acts of terrorism, vandalism or sabotage, closure of a facility without adequate notice or other unanticipated problems could result in lengthy interruptions in the availability of our services. Problems faced by our third-party data center locations, with the network providers with whom they contract, or with the systems by which our communications providers allocate capacity among their customers, including us, could adversely affect the experience of our customers. Interruptions in our services might cause us to issue refunds to customers and subject us to potential liability.

Further, our insurance policies may not adequately compensate us for any losses that we may incur in the event of damage or interruption, and therefore the occurrence of any of the foregoing could subject us to liability, cause us to issue credits to customers or cause customers not to renew their subscriptions for our applications, any of which could materially adversely affect our business.

If our security measures or those of our customers or third-party providers are compromised, or if unauthorized access to the data of our customers is otherwise obtained, our solutions may be perceived as not being secure, our customers may be harmed and may curtail or cease their use of our solutions, our reputation may be damaged and we may incur significant liabilities.

Our operations involve the storage and transmission of gunfire incident data, including date, time, address and GPS coordinates, occurring in our customer's coverage area. Security incidents, whether as a result of third-party action, employee or customer error, technology impairment or failure, malfeasance or criminal activity, could result in unauthorized access to, or loss or unauthorized disclosure of, this gunfire incident data, which could result in litigation expenses or damages, indemnity and other contractual obligations and other possible liabilities, including but not limited to government fines and penalties and mitigation expenses, as well as negative publicity, which could damage our reputation, impair our sales and harm our customers and our business. Cyber incidents and malicious internet-based activity continue to increase generally, and providers of cloud-based services have been targeted. If third parties with whom we work, such as vendors or developers, violate applicable laws or our security policies, such violations may also put our gunfire incident data at risk and could in turn have an adverse effect on our business. In addition, such a violation could expose the locations of our sensors, including those sensors for which we obtained third-party consents that include confidentiality obligations. We may be unable to anticipate or prevent techniques used to obtain unauthorized access or to sabotage systems because such techniques change frequently and often are not detected until after an incident has occurred. As we increase our customer base and our brand becomes more widely known and recognized, third parties may increasingly seek to compromise our security controls or gain unauthorized access to customer data or other sensitive information. Further, because of the nature of the services that we provide to our customers, we may be a unique target for attacks.

Many governments have enacted laws requiring companies to notify individuals of data security incidents or unauthorized transfers involving certain types of personal data. In addition, some of our customers contractually require notification of any data security incident. Accordingly, security incidents experienced by our competitors, by our customers or by us may lead to public disclosures, which may lead to widespread negative publicity. Any security compromise in our industry, whether actual or perceived, could harm our reputation, erode customer confidence in the effectiveness of our security measures, negatively impact our ability to attract new customers, cause existing customers to elect not to renew their subscriptions or subject us to third-party lawsuits, regulatory fines or other action or liability, which could materially and adversely affect our business and operating results. Further, the costs of compliance with notification laws and contractual obligations may be significant and any requirement that we provide such notifications as a result of an actual or alleged compromise could have a material and adverse effect on our business.

While we maintain general liability insurance coverage and coverage for errors or omissions, we cannot assure you that such coverage would be adequate or would otherwise protect us from liabilities or damages with respect to claims alleging compromise or loss of data, or that such coverage will continue to be available on acceptable terms or at all.

We rely on the cooperation of customers and third parties to permit us to install our ShotSpotter sensors on their facilities, and failure to obtain these rights could increase our costs or limit the effectiveness of our ShotSpotter Flex solution.

Our ShotSpotter Flex solution requires us to deploy ShotSpotter sensors in our customer coverage areas, which typically entails the installation of approximately 20 to 25 sensors per square mile. The ShotSpotter sensors are mounted on city facilities and third-party buildings, and occasionally on city or utility-owned light poles, and installing the sensors requires the consent of the property owners, which can be time-consuming to obtain and can delay deployment. Generally, we do not pay a site license fee in order to install our sensors, and our contractual agreements with these facility owners provide them the right to revoke permission to use their facility with notice of generally 60 days.

To the extent that required consents delay our ability to deploy our solutions or facility owners do not grant permission to use their facilities, revoke previously granted permissions, or require us to pay a site license fee in order to install our sensors, our business may be harmed. If we were required to pay a site license fee in order to install sensors, our deployment expenses would increase, which would impact our gross margins. If we cannot obtain a sufficient number of sensor mounting locations that are appropriately dispersed in a coverage area, the effectiveness of our ShotSpotter Flex solution would be limited, we may need to reduce the coverage area of the solution, or we may not be able to meet our service level requirements, any of which could result in customer dissatisfaction or have a material adverse impact on our reputation, our business and our financial results.

If we fail to offer high-quality customer support, our business and reputation may suffer.

We offer customer support 24 hours a day, seven days a week, as well as training on best practices, forensic expertise and expert witness services. Providing these services requires that our personnel have specific experience, knowledge and expertise, making it more difficult for us to hire qualified personnel and to scale up our support operations. The importance of high-quality customer support will increase as we expand our business and pursue new customers. We may be unable to respond quickly enough to accommodate short-term increases in customer demand for support services or scale our services if our business grows. Increased customer demand for these services, without corresponding revenues, could increase our costs and harm our operating results. If we do not help our customers use applications within our solutions and provide effective ongoing support, our ability to sell additional applications to, or to retain, existing customers may suffer and our reputation with existing or potential customers may be harmed.

Our reliance on wireless carriers will require updates to our technology, and making such updates could result in disruptions in our service or increase our costs of operations.

Approximately half of our installed ShotSpotter sensors use fourth-generation (“4G”) Long-Term Evolution (“LTE”) wireless technology and half use third-generation (“3G”), cellular communications. Our US wireless carriers have advised us that they will discontinue their 3G services in the future and our ShotSpotter sensors will not be able to transmit on these networks. As a result, we will have to upgrade the sensors that use 3G cellular communications at no additional cost to our customers prior to the discontinuation of 3G services, before the end of 2022. These sensor replacements will require significant capital expenditures and may also divert management’s attention and other important resources away from our customer service and sales efforts for new customers. In the future, we may not be able to successfully implement new technologies or adapt existing technologies to changing market demands. If we are unable to adapt timely to changing technologies, market conditions or customer preferences, our business, operating results and financial condition could be materially and adversely affected.

Concerns regarding privacy and government-sponsored surveillance may deter customers from purchasing our solutions.

Governmental agencies and private citizens have become increasingly sensitive to real or perceived government or third-party surveillance and may wrongly believe that our outdoor sensors, as acoustic devices installed in urban areas or public facilities, such as universities, allow customers to listen to private conversations and monitor private citizen activity. Our sensors are not designed for “live listening” and are triggered only on loud impulsive sounds that may likely be gunfire. However, perceived privacy concerns may result in negative media coverage and efforts by private citizens to persuade municipalities, educational institutions or other potential customers not to purchase our solutions for their communities, campuses or facilities. In addition, laws may exist or be enacted to address such concerns that could impact our ability to deploy our solutions. For example, the City of Toronto, Canada decided against using ShotSpotter solutions because the Ministry of the Attorney General of Ontario indicated that it may compromise Section 8 of Canada’s Charter of Rights and Freedoms, which relates to unreasonable search and seizure. If customers choose not to purchase our solutions due to privacy or surveillance concerns, then the market for our solutions may develop more slowly than we expect, or it may not achieve the growth potential we expect, any of which would adversely affect our business and financial results.

We rely on a limited number of suppliers and contract manufacturers, and our proprietary ShotSpotter sensors are manufactured by a single contract manufacturer.

We rely on a limited number of suppliers and contract manufacturers. In particular, we use a single manufacturer, with which we have no long-term contract and from which we purchase on a purchase-order basis, to produce our proprietary ShotSpotter sensors. Our reliance on a sole contract manufacturer increases our risks since we do not currently have any alternative or replacement manufacturers, and we do not maintain a high volume of inventory. In the event of an interruption from a contract manufacturer, we may not be able to develop alternate or secondary sources without incurring material additional costs and substantial delays. Furthermore, these risks could materially and adversely affect our business if our contract manufacturer is impacted by a natural disaster or other interruption at a particular location because each of our contract manufacturers produces our products from a single location. Although our contract manufacturer has alternative manufacturing locations, transferring manufacturing to another location may result in significant delays in the availability of our sensors.

Many of the key components used to manufacture our proprietary ShotSpotter sensors also come from limited or sole sources of supply. Our contract manufacturer generally purchases these components on our behalf, and we do not have any long-term arrangements with our suppliers. We are therefore subject to the risk of shortages and long lead times in the supply of these components and the risk that suppliers discontinue or modify components used in our products. In addition, the lead times associated with certain components are lengthy and preclude rapid changes in quantities and delivery schedules. Developing alternate sources of supply for these components may be time-consuming, difficult, and costly, and we or our suppliers may not be able to source these components on terms that are acceptable to us, or at all, which may undermine our ability to fill our orders in a timely manner.

If we experience significantly increased demand, or if we need to replace an existing supplier or contract manufacturer, we may be unable to supplement or replace such supply or contract manufacturing on terms that are acceptable to us, which may undermine our ability to deliver our products to customers in a timely manner. For example, for our ShotSpotter sensors, it may take a significant amount of time to identify a contract manufacturer that has the capability and resources to build the sensors to our specifications. Identifying suitable suppliers and contract manufacturers is an extensive process that requires us to become satisfied with their quality control, technical capabilities, responsiveness and service, financial stability, regulatory compliance, and labor and other ethical practices. Accordingly, the loss of any key supplier or contract manufacturer could adversely impact our business, operating results and financial condition.

Our solutions use third-party software and services that may be difficult to replace or cause errors or failures of our solutions that could lead to a loss of customers or harm to our reputation and our operating results.

We license third-party software and depend on services from various third parties for use in our solutions. In the future, such software or services may not be available to us on commercially reasonable terms, or at all. Any loss of the right to use any of the software or services could result in decreased functionality of our solutions until equivalent technology is either developed by us or, if available from another provider, is identified, obtained and integrated, which could harm our business. In addition, any errors or defects in or failures of the third-party software or services could result in errors or defects in our solutions or cause our solutions to fail, which could harm our business and be costly to correct. Many of these providers attempt to impose limitations on their liability for such errors, defects or failures, and if enforceable, we may have additional liability to our customers or third-party providers that could harm our reputation and increase our operating costs.

We will need to maintain our relationships with third-party software and service providers, and obtain from such providers software and services that do not contain any errors or defects. Any failure to do so could adversely impact our ability to deliver effective products to our customers and could harm our operating results.

If we do not or cannot maintain the compatibility of our platform with applications that our customers use, our business could suffer.

Some of our customers choose to integrate our solutions with certain other systems used by our customers, such as real-time crime center platforms or computer-aided dispatch systems. The functionality and popularity of our solutions depend, in part, on our ability to integrate our solutions these systems. Providers of these systems may change the features of their technologies, restrict our access to their applications or alter the terms governing use of their applications in an adverse manner. Such changes could functionally limit or terminate our ability to use these technologies in conjunction with our solutions, which could negatively impact our customer service and harm our business. If we fail to integrate our solutions with applications that our customers use, we may not be able to offer the functionality that our customers need, and our customers may not renew their agreements, which would negatively impact our ability to generate revenues and adversely impact our business.

We are subject to governmental regulation and other legal obligations, particularly related to privacy, data protection and information security, and our actual or perceived failure to comply with such obligations could harm our business. Compliance with such laws could impair our efforts to maintain and expand our customer base, and thereby decrease our revenue.

Our outdoor sensors are acoustic devices that are designed to recognize impulsive sounds that are likely to be gunfire. ShotSpotter sensors do not use high gain, directional or other specialized microphones.

The sensors do not have the ability to live stream audio. Typically, sounds, noises or voices captured on the secure sensors are cached temporarily but are written over and permanently deleted within 48-72 hours. When a sensor is triggered by an impulsive sound, it creates a potential gunshot “incident” that contains a recording including no more than two seconds before the incident and four seconds after the incident. This audio snippet is preserved indefinitely for potential evidentiary use.

There is the potential to include human voices that occur at the same time as the gunshot in these incident audio snippets. Incident audio snippets are retained indefinitely as evidence by the company. We also use information collected

to support, expand and improve our software algorithms as well as our gunfire detection and notification methods. Sensors are often installed in densely populated urban areas. They are not designed or tuned to capture human voices, but it is possible they could pick up a human voice. Human voices are not impulsive and do not trigger the sensors. Unless accompanied by an impulsive sound no audio snippet would be transmitted out of the sensor. The human voice would be temporarily cached on the sensor for 48-72 hours and would then be written over and permanently deleted. Information collected from loud impulsive sounds ("incidents") is used to provide information to our customers regarding those incidents, but shared information is limited, by both our technology and our privacy policies, to the audit snippet containing the incident.

Our handling and storage of data is subject to a variety of laws and regulations, including regulation by various government agencies and various state, local and foreign agencies. The U.S. federal and various state and foreign governments have adopted or proposed legislation that regulates the monitoring and collection of personal information of individuals and that mandates security requirements with respect to certain personally identifiable information. In the United States, the Federal Trade Commission and numerous state attorneys general are imposing standards for the online collection, distribution, use and storage of data by applying federal and state consumer protection laws. The lack of a clear and universal standard for protecting such information means, however, that these obligations may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other requirements or our practices. Any failure or perceived failure by us to comply with privacy or security laws, policies, legal obligations or industry standards or any security incident that results in the unauthorized release or transfer of sensitive corporate information, personally identifiable information or other customer data may result in governmental enforcement actions, litigation, fines and penalties and/or adverse publicity, and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business.

Some proposed laws or regulations concerning privacy, data protection and information security are in their early stages, and we cannot yet determine how these laws and regulations may be interpreted nor can we determine the impact these proposed laws and regulations, may have on our business. Such proposed laws and regulations may require companies to implement privacy and security policies, permit users to access, correct and delete personal information stored or maintained by such companies, inform individuals of security breaches that affect their personal information, and, in some cases, obtain individuals' consent to use personal information for certain purposes. In addition, a foreign government could require that any personal information collected in a country not be disseminated outside of that country, and we may not be currently equipped to comply with such a requirement. Our failure to comply with federal, state and international data privacy laws and regulators could harm our ability to successfully operate our business and pursue our business goals.

Our quarterly results of operations may fluctuate significantly due to a wide range of factors, which makes our future results difficult to predict.

Our revenues and results of operations could vary significantly from quarter to quarter as a result of various factors, many of which are outside of our control, including:

- the expansion or contraction of our customer base;
- the renewal or nonrenewal of subscription agreements with, and expansion of coverage areas by, existing customers;
- the size, timing, terms and deployment schedules of our sales to both existing and new customers;
- the introduction of products or services that may compete with us for the limited funds available to our customers, and changes in the cost of such products or services;
- changes in our customers' and potential customers' budgets;
- our ability to control costs, including our operating expenses;
- our ability to hire, train and maintain our direct sales force;
- the timing of satisfying revenue recognition criteria in connection with initial deployment and renewals;
- fluctuations in our effective tax rate; and
- general economic and political conditions, both domestically and internationally.

Any one of these or other factors discussed elsewhere in this report may result in fluctuations in our revenues and operating results, meaning that quarter-to-quarter comparisons of our revenues, results of operations and cash flows may not necessarily be indicative of our future performance.

Because of the fluctuations described above, our ability to forecast revenues is limited and we may not be able to accurately predict our future revenues or results of operations. In addition, we base our current and future expense levels on our operating plans and sales forecasts, and our operating expenses are expected to increase in the short term. Accordingly, we may not be able to reduce our costs sufficiently to compensate for an unexpected shortfall in revenues, and even a small shortfall in revenues could disproportionately and adversely affect our financial results for that quarter. The variability and unpredictability of these and other factors could result in our failing to meet or exceed financial expectations for a given period.

Because we generally recognize our subscription revenues ratably over the term of our contract with a customer, fluctuations in sales will not be fully reflected in our operating results until future periods.

Our revenues are primarily generated from subscriptions to our solutions. With the exception of a small number of legacy customers, our customers do not have the right to take possession of our equipment or software platform. Revenues from subscriptions to our software platform is recognized ratably over the subscription period beginning on the date that the subscription is made available to the customer, which we refer to as the "go-live" date. Historically, revenues from additional fees such as setup and training were recognized ratably over the estimated customer life beginning on the go-live date. Beginning on January 1, 2018, we adopted Accounting Standards Codification ("ASC") Topic 606, *Revenue from Contracts with Customers*, the result of which, among other things, is that such training fees will instead be recognized upon delivery and setup fees are recognized ratably over three years if they are deemed to be a material right. For more information about ASC Topic 606, see Note 3, *Summary of Significant Accounting Policies,* to our consolidated financial statements elsewhere in this Annual Report on Form 10-K. Our agreements with our customers typically range from one to five years. As a result, much of the revenues that we report in each quarter are attributable to agreements entered into during previous quarters. Consequently, a decline in sales, customer renewals or market acceptance of our solutions in any one quarter would not necessarily be fully reflected in the revenues in that quarter, and would negatively affect our revenues and profitability in future quarters. This ratable revenue recognition also makes it difficult for us to rapidly increase our revenues through additional sales in any period, as revenues from new customers generally are recognized over the applicable agreement term. Our subscription-based approach may result in uneven recognition of revenues.

We recognize subscription revenues over the term of a subscription agreement. Once we enter into a contract with a customer, there is a delay until we begin recognizing revenues while we survey the coverage areas, obtain any required consents for installation, and install our sensors, which together can take up to several months or more. We begin recognizing revenues from a sale only when all of these steps are complete and the solution is live.

While most of our customers elect to renew their subscription agreements following the expiration of a term, in some cases, they may not be able to obtain the proper approvals or funding to complete the renewal prior to such expiration. For these customers, we stop recognizing subscription revenues at the end of the current term, even though we may continue to provide services for a period of time while the renewal process is completed. Once the renewal is complete, we then recognize subscription revenues for the period between the expiration of the term of the agreement and the completion of the renewal process. As a result of the widespread destruction caused by the hurricanes in Puerto Rico and the U.S. Virgin Islands in 2017, we discontinued our service to our customers in those service areas and classified the contracts as expired and stopped recognizing revenues. We cannot be certain when or if the affected customers will resume operations and renew their contracts.

The variation in the timeline for deploying our solutions and completing renewals may result in fluctuations in our revenues, which could cause our results to differ from projections. Additionally, while we generally invoice for 50% of the contract cost upon a customer's go-live date, our cash flows may be volatile and will not match our revenue recognition.

We are in the process of expanding our international operations, which exposes us to significant risks.

We currently operate in a single location outside the United States. A key component to our business strategy is to expand our international operations to increase our revenues from customers outside of the United States as part of our growth strategy. Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks in addition to those we already face in the United States. In addition, we will need to invest time and resources in understanding the regulatory framework and political environments of our potential customers overseas in order to focus our sales efforts. Because such regulatory and political considerations are likely to vary across jurisdictions, this effort will require additional time and attention from our sales team and could lead to a sales cycle that is longer than our typical process for sales in the United States. We also may need to hire additional employees and otherwise invest in our international operations in order to reach new customers. Because of our limited experience with international operations as well as developing and managing sales in international markets, our international expansion efforts may not be successful.

In addition, we face and will continue to face risks in doing business internationally that could adversely affect our business, including:

- the potential impact of currency exchange fluctuations;
- the need to comply with local data residency requirements;
- the availability and reliability of local data centers and internet bandwidth providers;
- the difficulty of staffing and managing international operations and the increased operations, travel, shipping and compliance costs associated with having customers in numerous international locations;
- potentially greater difficulty collecting accounts receivable and longer payment cycles;
- the availability of coverage by wireless carriers in international markets;
- higher or more variable costs associated with wireless carriers and other service providers;
- the need to offer customer support in various languages;
- challenges in understanding and complying with local laws, regulations and customs in foreign jurisdictions, including laws regarding privacy and government surveillance;
- export controls and economic sanctions administered by the Department of Commerce Bureau of Industry and Security and the Treasury Department's Office of Foreign Assets Control;
- compliance with various anti-bribery and anti-corruption laws such as the Foreign Corrupt Practices Act and United Kingdom Bribery Act of 2010;
- tariffs and other non-tariff barriers, such as quotas and local content rules;
- more limited protection for our intellectual property in some countries;
- adverse or uncertain tax consequences as a result of international operations;
- currency control regulations, which might restrict or prohibit our conversion of other currencies into U.S. dollars;
- restrictions on the transfer of funds;
- deterioration of political relations between the United States and other countries; and
- political or social unrest or economic instability in a specific country or region in which we operate, which could have an adverse impact on our operations in that location.

Also, we expect that due to costs related to our international expansion efforts and the increased cost of doing business internationally, we will incur higher costs to secure sales to international customers than the comparable costs for domestic customers. As a result, our financial results may fluctuate as we expand our operations and customer base worldwide.

Our failure to manage any of these risks successfully could harm our international operations, and adversely affect our business, operating results and financial condition.

We are dependent on the continued services and performance of our senior management and other key personnel, the loss of any of whom could adversely affect our business.

Our future success depends in large part on the continued contributions of our senior management and other key personnel. In particular, the leadership of key management personnel is critical to the successful management of our company, the development of our products, and our strategic direction. We also depend on the contributions of key technical personnel, some of whom are nearing retirement age and in the process of transferring relevant knowledge and expertise to other employees.

We do not maintain "key person" insurance for any member of our senior management team or any of our other key employees. Our senior management and key personnel are all employed on an at-will basis, which means that they could terminate their employment with us at any time, for any reason and without notice. The loss of any of our key management personnel could significantly delay or prevent the achievement of our development and strategic objectives and adversely affect our business.

If we are unable to attract, integrate and retain additional qualified personnel, including top technical talent, our business could be adversely affected.

Our future success depends in part on our ability to identify, attract, integrate and retain highly skilled technical, managerial, sales and other personnel. We face intense competition for qualified individuals from numerous other companies, including other software and technology companies, many of whom have greater financial and other resources than we do. Some of these characteristics may be more appealing to high-quality candidates than those we have to offer. In addition, new hires often require significant training and, in many cases, take significant time before they achieve full productivity. We may incur significant costs to attract and retain qualified personnel, including significant expenditures related to salaries and benefits and compensation expenses related to equity awards, and we may lose new employees to our competitors or other companies before we realize the benefit of our investment in recruiting and training them. Moreover, new employees may not be or become as productive as we expect, as we may face challenges in adequately or appropriately integrating them into our workforce and culture. If we are unable to attract, integrate and retain suitably qualified individuals who are capable of meeting our growing technical, operational and managerial requirements, on a timely basis or at all, our business will be adversely affected.

Volatility or lack of positive performance in our stock price may also affect our ability to attract and retain our key employees. Many of our senior management personnel and other key employees have become, or will soon become, vested in a substantial amount of stock or stock options. Employees may be more likely to leave us if the shares they own or the shares underlying their vested options have significantly appreciated in value relative to the original purchase prices of the shares or the exercise prices of the options, or, conversely, if the exercise prices of the options that they hold are significantly above the market price of our common stock. If we are unable to appropriately incentivize and retain our employees through equity compensation, or if we need to increase our compensation expenses in order to appropriately incentivize and retain our employees, our business, operating results and financial condition would be adversely affected.

We may be subject to additional obligations to collect and remit certain taxes, and we may be subject to tax liability for past activities, which could harm our business.

State, local and foreign jurisdictions have differing rules and regulations governing sales, use, value added and other taxes, and these rules and regulations are subject to varying interpretations that may change over time, particularly with respect to software-as-a-service products like our solutions. Further, these jurisdictions' rules regarding tax nexus are complex and vary significantly. If one or more jurisdictions were to assert that we have failed to collect taxes for sales of our solutions, we could face the possibility of tax assessments and audits. A successful assertion that we should be collecting additional sales, use, value added or other taxes in those jurisdictions where we have not historically done so and do not accrue for such taxes could result in substantial tax liabilities and related penalties for past sales or otherwise harm our business and operating results.

Our ability to use our net operating losses to offset future taxable income may be subject to certain limitations.

As of December 31, 2018, we had federal net operating loss carryforwards ("NOLs") of approximately $85.4 million, of which $80.6 million will expire between 2026 through 2037, if not utilized, and $4.8 million which do not expire. As of December 31, 2018, we also had state NOLs of approximately $54.3 million, which will expire, if not utilized, in 2019 through 2038. These federal and state NOLs are available to reduce future income subject to income taxes. In general, under Section 382 of the Internal Revenue Code of 1986, as amended ("the Code"), a corporation that undergoes an "ownership change" is subject to limitations on its ability to utilize its NOLs to offset future taxable income. Past or future changes in our stock ownership, some of which are outside of our control, may have resulted or could result in an ownership change. State NOLs generated in one state cannot be used to offset income generated in another state.

We may be subject to litigation for a variety of claims or to other legal requests, which could adversely affect our results of operations, harm our reputation or otherwise negatively impact our business.

We may be subject to litigation for a variety of claims arising from our normal business activities. These may include claims, suits, and proceedings involving labor and employment, wage and hour, commercial and other matters. The outcome of any litigation, regardless of its merits, is inherently uncertain. Any claims and lawsuits, and the disposition of such claims and lawsuits, could be time-consuming and expensive to resolve, divert management attention and resources, and lead to attempts on the part of other parties to pursue similar claims. Any adverse determination related to litigation could adversely affect our results of operations, harm our reputation or otherwise negatively impact our business. In addition, depending on the nature and timing of any such dispute, a resolution of a legal matter could materially affect our future operating results, our cash flows or both.

An unfavorable outcome on any litigation matters could require us to pay substantial damages, or, in connection with any intellectual property infringement claims, could require us to pay ongoing royalty payments or could prevent us from selling certain of our products. As a result, a settlement of, or an unfavorable outcome on, any of the matters referenced above or other litigation matters could have a material adverse effect on our business, operating results, financial condition and cash flows.

We, or our customers, may be subject to requests for our data or information concerning our techniques and processes, pursuant to state or federal law (for example, public-records requests or subpoenas to provide information or to testify in court). This data and information, some of which we may deem to be confidential or trade secrets, could therefore become a matter of public record and also become accessible by competitors, which could negatively impact our business.

Changes in financial accounting standards may cause adverse and unexpected revenue fluctuations and impact our reported results of operations.

The accounting rules and regulations that we must comply with are complex and subject to interpretation by the Financial Accounting Standards Board ("FASB"), the Securities and Exchange Commission and various bodies formed to promulgate and interpret appropriate accounting principles. In addition, many companies' accounting disclosures are being subjected to heightened scrutiny by regulators and the public. Further, the accounting rules and regulations are continually changing in ways that could impact our financial statements.

Changes to accounting principles or our accounting policies on our financial statements going forward are difficult to predict, could have a significant effect on our reported financial results, and could affect the reporting of transactions completed before the announcement of the change. In addition, were we to change our critical accounting estimates, including the timing of recognition of subscription and professional services revenues and other revenue sources, our results of operations could be significantly impacted.

Risks Related to Our Intellectual Property

Failure to protect our intellectual property rights could adversely affect our business.

Our success depends, in part, on our ability to protect proprietary methods and technologies that we develop or license under patent and other intellectual property laws of the United States, so that we can prevent others from using our inventions and proprietary information. If we fail to protect our intellectual property rights adequately, our competitors might gain access to our technology and our business might be adversely affected. However, defending our intellectual property rights might entail significant expenses. Any of our patent rights, copyrights, trademarks or other intellectual property rights may be challenged by others, weakened or invalidated through administrative process or litigation.

As of December 31, 2018, we had 31 U.S. patents directed to our technologies, as well as one granted patent in Israel. We have patent applications pending for examination in the United States, Europe, Mexico and Brazil, but we cannot guarantee that these patent applications will be granted. We also license one other U.S. patent from one third party. The patents that we own or those that we license from others (including those that may be issued in the future) may not provide us with any competitive advantages or may be challenged by third parties.

Additionally, the process of obtaining patent protection is expensive and time-consuming, and we may not be able to prosecute all necessary or desirable patent applications at a reasonable cost or in a timely manner. Even if issued, there can be no assurance that these patents will adequately protect our intellectual property, as the legal standards relating to the validity, enforceability and scope of protection of patent and other intellectual property rights are uncertain.

Any patents that are issued may subsequently be invalidated or otherwise limited, allowing other companies to develop offerings that compete with ours, which could adversely affect our competitive business position, business prospects and financial condition. In addition, issuance of a patent does not guarantee that we have a right to practice the patented invention. Patent applications in the United States are typically not published until 18 months after their earliest priority date or, in some cases, not at all, and publications of discoveries in industry-related literature lag behind actual discoveries. We cannot be certain that third parties do not have blocking patents that could be used to prevent us from marketing or practicing our software or technology.

Effective patent, trademark, copyright and trade secret protection may not be available to us in every country in which our software is available. The laws of some foreign countries may not be as protective of intellectual property rights as those in the United States (in particular, some foreign jurisdictions do not permit patent protection for software), and mechanisms for enforcement of intellectual property rights may be inadequate. Additional uncertainty may result from changes to intellectual property legislation enacted in the United States, including the recent America Invents Act, or to the laws of other countries and from interpretations of the intellectual property laws of the United States and other countries by applicable courts and agencies. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our intellectual property.

We rely in part on trade secrets, proprietary know-how and other confidential information to maintain our competitive position. Although we endeavor to enter into non-disclosure agreements with our employees, licensees and others who may have access to this information, we cannot assure you that these agreements or other steps we have taken will prevent unauthorized use, disclosure or reverse engineering of our technology. Moreover, third parties may independently develop technologies or products that compete with ours, and we may be unable to prevent this competition. Third parties also may seek access to our trade secrets, proprietary know-how and other confidential information through legal process (for example, public-records requests or subpoenas to provide information or to testify in court) and it could be expensive to defend against those requests. Disclosure of our trade secrets, proprietary know-how and other confidential information could negatively impact the business.

We might be required to spend significant resources to monitor and protect our intellectual property rights. We may initiate claims or litigation against third parties for infringement of our proprietary rights or to establish the validity of our proprietary rights. Litigation also puts our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing. Additionally, we may provoke third parties to assert counterclaims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially viable. Any litigation, whether or not resolved in our favor, could result in significant expense to us and divert the efforts of our technical and management personnel, which may adversely affect our business, operating results, financial condition and cash flows.

We may be subject to intellectual property rights claims by third parties, which are extremely costly to defend, could require us to pay significant damages and could limit our ability to use certain technologies.

Companies in the software and technology industries, including some of our current and potential competitors, own large numbers of patents, copyrights, trademarks and trade secrets and frequently enter into litigation based on allegations of infringement or other violations of intellectual property rights. In addition, many of these companies have the capability to dedicate substantially greater resources to enforce their intellectual property rights and to defend claims that may be brought against them. The litigation may involve patent holding companies or other adverse patent owners that have no relevant product revenues and against which our patents may therefore provide little or no deterrence. We may have previously received, and may in the future receive, notices that claim we have misappropriated, misused, or infringed other parties' intellectual property rights, and, to the extent we gain greater market visibility, we face a higher risk of being the subject of intellectual property infringement claims.

There may be third-party intellectual property rights, including issued or pending patents that cover significant aspects of our technologies or business methods. Any intellectual property claims, with or without merit, could be very time-consuming, could be expensive to settle or litigate and could divert our management's attention and other resources. These claims could also subject us to significant liability for damages, potentially including treble damages if we are found to have willfully infringed patents or copyrights. These claims could also result in our having to stop using technology found to be in violation of a third party's rights. We might be required to seek a license for the intellectual property, which may not be available on reasonable terms or at all. Even if a license were available, we could be required to pay significant royalties, which would increase our operating expenses. As a result, we may be required to develop alternative non-infringing technology, which could require significant effort and expense. If we cannot license or develop technology for any infringing aspect of our business, we would be forced to limit or stop sales of our software and may be unable to compete effectively. Any of these results would adversely affect our business, operating results, financial condition and cash flows.

If we are unable to protect our intellectual property, or if we infringe on the intellectual property rights of others, our business may be harmed.

Our success depends in part on intellectual property rights to the services that we develop. We rely on a combination of contractual and intellectual property rights, including non-disclosure agreements, patents, trade secrets, copyrights and trademarks, to establish and protect our intellectual property rights in our names, services, innovations, methodologies and related technologies. If we lose intellectual property protection or the ability to secure intellectual property protection on any of our names, confidential information or technology, this could harm our business. Our intellectual property rights may not prevent competitors from independently developing services and methodologies similar to ours, and the steps we take might be inadequate to deter infringement or misappropriation of our intellectual property by competitors, former employees or other third parties, any of which could harm our business. We have registered patents and pending patent applications directed to our technology. We have registered trademarks in the United States that have various expiration dates unless renewed through customary processes. Our registered patents and/or trademark registrations may be unenforceable or ineffective in protecting our intellectual property. Most of our patents and pending patent applications have been filed only in the United States and are therefore not enforceable in countries outside of the United States. Our trademarks may be unenforceable in countries outside of the United States, which may adversely affect our ability to build our brand outside of the United States.

Although we are not presently aware that our conduct of our business infringes on the intellectual property rights of others, third parties may nevertheless assert infringement claims against us in the future. We may be required to modify our products, services, internal systems or technologies, or obtain a license to permit our continued use of those rights. We may be unable to do so in a timely manner, or upon reasonable terms and conditions, which could harm our business. In addition, future litigation over these matters could result in substantial costs and resource diversion. Adverse determinations in any litigation or proceedings of this type could subject us to significant liabilities to third parties and could prevent us from using some of our services, internal systems or technologies.

Our use of open source software could subject us to possible litigation.

A portion of our technologies incorporates open source software, and we expect to continue to incorporate open source software into our platform in the future. Few of the licenses applicable to open source software have been interpreted by courts, and their application to the open source software integrated into our proprietary technology platform may be uncertain. If we fail to comply with these licenses, then pursuant to the terms of these licenses, we may be subject to certain requirements, including requirements that we make available the source code for our software that incorporates the open source software. We cannot assure you that we have not incorporated open source software in our software in a manner that is inconsistent with the terms of the applicable licenses or our current policies and procedures. If an author or other third party that distributes such open source software were to allege that we had not complied with the conditions of one or more of these licenses, we could incur significant legal expenses defending against such allegations. Litigation could be costly for us to defend, have a negative effect on our operating results and financial condition or require us to devote additional research and development resources to change our technology platform.

Risks Related to the Ownership of Our Common Stock

Our stock price may be volatile or may decline regardless of our operating performance, resulting in substantial losses for investors.

The market price of our common stock may be highly volatile and may fluctuate substantially as a result of a variety of factors, some of which are related in complex ways. Since shares of our common stock were sold in our initial public offering ("IPO"), in June 2017 at a price of $11.00 per share, our stock price has ranged from an intraday low of $9.33 to an intraday high of $66.14 through February 28, 2019.

The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including the factors listed below and other factors described in this "Risk Factors" section:

- actual or anticipated fluctuations in our operating results;
- the financial projections we may provide to the public, any changes in these projections or our failure to meet these projections;
- failure of securities analysts to initiate or maintain coverage of our company, changes in financial estimates by any securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- ratings changes by any securities analysts who follow our company;
- changes in the availability of federal funding to support local law enforcement efforts, or local budgets;
- announcements by us of significant technical innovations, acquisitions, strategic partnerships, joint ventures or capital commitments;
- changes in operating performance and stock market valuations of other software companies generally;
- price and volume fluctuations in the overall stock market, including as a result of trends in the economy as a whole;
- changes in our board of directors or management;
- sales of large blocks of our common stock, including sales by our executive officers, directors and significant stockholders;
- lawsuits threatened or filed against us;
- short sales, hedging and other derivative transactions involving our capital stock;
- general economic conditions in the United States and abroad;

- other events or factors, including those resulting from war, incidents of terrorism or responses to these events; and
- media misperception of our sales and customer relationships, including press announcements or media mentions of future sales that may be misleading or inaccurate.

In addition, stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many software companies. Stock prices of many software companies have fluctuated in a manner unrelated or disproportionate to the operating performance of those companies. In the past, stockholders have instituted securities action litigation following periods of market volatility. If we were to become involved in securities litigation, it could subject us to substantial costs, divert resources and the attention of management from our business and adversely affect our business, operating results, financial condition and cash flows.

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

Certain holders of our shares of common stock have the right, subject to various conditions and limitations, to include their shares of our common stock in registration statements relating to our securities including approximately 3.3 million shares that were registered in connection with the Registration Statement on Form S-3 that became effective on July 27, 2018. If the offer and sale of these shares are registered, they will be freely tradable without restriction under the Securities Act. In addition, non-affiliates have the ability to sell shares of our common stock in the open market or through block trades without subject to volume restrictions under Rule 144 of the Securities Act. In addition, in the future we may issue common stock or other securities if we need to raise additional capital. The number of new shares of our common stock issued in connection with raising additional capital could constitute a material portion of the then outstanding shares of our common stock. In the event a large number of shares of common stock are sold in the public market, such share sales could reduce the trading price of our common stock.

If securities or industry analysts do not publish research or reports about our business, or publish negative reports about our business, our share price and trading volume could decline.

The trading market for our common stock depends in part on the research and reports that securities or industry analysts publish about us or our business, our market and our competitors. We do not have any control over these analysts. If one or more of the analysts who cover us downgrade our shares of common stock or change their opinion of our shares of common stock, our share price would likely decline. If one or more of these analysts cease coverage of our company or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our share price or trading volume to decline.

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

We are an "emerging growth company," as defined in the Jumpstart Our Business Startups Act (the "JOBS Act"), and we take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies" including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved. We will remain an "emerging growth company" for up to five years, although we will cease to be an "emerging growth company" upon the earliest of (i) the last day of fiscal year 2022, (ii) the last day of the first fiscal year in which our annual gross revenues are $1.07 billion or more, (iii) the date on which we have, during the previous rolling three-year period, issued more than $1 billion in non-convertible debt securities or (iv) the date on which we are deemed to be a "large accelerated filer" as defined in the Securities Exchange Act of 1934, or the Exchange Act. We cannot predict if investors will find our common stock less attractive or our company less comparable to certain other public companies because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our stock price may be more volatile.

We incur substantial costs as a result of being a public company.

As a public company, we are incurring significant levels of legal, accounting, insurance and other expenses that we did not incur as a private company. We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, the Dodd-Frank Act, the listing requirements of the Nasdaq Capital Market and other applicable securities rules and regulations. Compliance with these rules and regulations increases our legal and financial compliance costs, makes some activities more difficult, time-consuming or costly and increases demand on our systems and resources as compared to when we operated as a private company. The Exchange Act requires, among other things, that we file annual, quarterly and current reports with respect to our business and operating results. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could adversely affect our business and operating results. Although we have already hired additional corporate employees to comply with these requirements, we may need to hire more corporate employees in the future or engage outside consultants, which would increase our costs and expenses.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time-consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be adversely affected.

As a result of disclosure of information in this report and in the filings that we are required to make as a public company, our business, operating results and financial condition have become more visible, which has resulted in, and may in the future result in threatened or actual litigation, including by competitors and other third parties. If any such claims are successful, our business, operating results and financial condition could be adversely affected, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and adversely affect our business, operating results and financial condition.

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

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

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of our company more difficult, limit attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. Our certificate of incorporation and bylaws include provisions that:

- establish a classified board of directors so that not all members of our board of directors are elected at one time;
- permit the board of directors to establish the number of directors and fill any vacancies and newly-created directorships;
- provide that directors may only be removed for cause;

- require super-majority voting to amend some provisions in our certificate of incorporation and bylaws;
- authorize the issuance of "blank check" preferred stock that our board of directors could use to implement a stockholder rights plan;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- prohibit stockholder action by written consent, which requires all stockholder actions to be taken at a meeting of our stockholders;
- provide that the board of directors is expressly authorized to make, alter or repeal our bylaws; and
- establish advance notice requirements for nominations for election to our board of directors or for proposing matters that can be acted upon by stockholders at annual stockholder meetings.

In addition, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits stockholders owning 15% or more of our outstanding voting stock from merging or otherwise combining with us for a period of three years following the date on which the stockholder became a 15% stockholder without the consent of our board of directors. These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management, and otherwise discourage management takeover attempts.

Our certificate of incorporation designates the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation that may be initiated by our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Pursuant to our certificate of incorporation, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, (3) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law, our certificate of incorporation or our bylaws or (4) any action asserting a claim governed by the internal affairs doctrine. Our certificate of incorporation further provides that any person or entity purchasing or otherwise acquiring any interest in shares of our common stock is deemed to have notice of and consented to the foregoing provision. The forum selection clause in our certificate of incorporation may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

Our certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. However, on December 19, 2018, the Delaware Chancery Court issued an opinion invalidating this provision in the certificates of incorporation of Delaware corporations. The Chancery Court held that a Delaware corporation can only use its constitutive documents to bind a plaintiff to a particular forum where the claim involves rights or relationships established by or under Delaware's corporate law. This case may be appealed to the Delaware Supreme Court. In light of this recent court decision, on December 21, 2018 we announced that we do not currently intend to enforce the foregoing federal forum selection provision unless the relevant court decision is appealed and the Delaware Supreme Court reverses the decision. If there is no appeal or if the Delaware Supreme Court affirms the Chancery Court's decision, then we intend to seek approval by our stockholders to amend our certificate of incorporation at our next regularly-scheduled annual meeting of stockholders to remove the invalid provision.

Item 1B. UNRESOLVED STAFF COMMENTS

Not Applicable.

Item 2. PROPERTIES

Our principal facilities consist of office space for our corporate headquarters in Newark, California, where we occupy approximately 12,020 square feet of space under a lease that expires in October 2021.

We lease our facilities and do not own any real property. We may procure additional space as we add employees and expand geographically. We believe that our facilities are adequate to meet our needs for the immediate future and that should it be needed, suitable additional space will be available to accommodate expansion of our operations.

Item 3. LEGAL PROCEEDINGS

On November 6, 2017 three individuals, Ken Fisher, Kevin Baxter and Fred Holmes (the “Contractors”), filed a complaint with the Superior Court of California, County of Alameda, alleging breach of contract, a breach of the implied covenant of good faith and fair dealing and violation of Section 17200 et seq. of the California Business and Professions Code, purportedly predicated on an alleged breach of Section 10b-5 of the Securities Exchange Act of 1934. On October 4, 2018, the parties reached a binding settlement. The Contractors filed a Notice of Unconditional Settlement on October 9, 2018, which gives them 45 days from October 4, 2018 to file a request for dismissal. The Contractors filed a request for dismissal on October 24, 2018 and such dismissal was entered as requested on October 24, 2018.

On August 28, 2018, Silvon S. Simmons (the "Plaintiff") amended a complaint against the City of Rochester, New York and various city employees, filed in the United States District Court, Western District of New York, to add us and employees as a defendant. The amended complaint alleges conspiracy to violate plaintiff's civil rights, denial of the right to a fair trial, and malicious prosecution. The Plaintiff claims that ShotSpotter colluded with the City of Rochester to fabricate and create gunshot alert evidence to secure Plaintiff's conviction. On the basis of the allegations, the Plaintiff has petitioned for compensatory and punitive damages and other costs and expenses, including attorney's fees. We believe that the Plaintiff's claims are without merit and are disputing them vigorously.

We may become subject to legal proceedings, as well as demands and claims that arise in the normal course of our business, including claims of alleged infringement of third-party patents and other intellectual property rights, breach of contract, employment law violations, and other matters and matters involving requests for information from us or our customers under federal or state law. Such claims, even if not meritorious, could result in the expenditure of significant financial and management resources. We make a provision for a liability relating to legal matters when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These provisions are reviewed and adjusted to include the impacts of negotiations, estimated settlements, legal rulings, advice of legal counsel, and other information and events pertaining to a particular matter.

An unfavorable outcome on any litigation matters could require payment of substantial damages, or, in connection with any intellectual property infringement claims, could require us to pay ongoing royalty payments or could prevent us from selling certain of our products. As a result, a settlement of, or an unfavorable outcome on, any of the matters referenced above or other litigation matters or legal proceedings could have a material adverse effect on our business, operating results, financial condition and cash flows.

Item 4. MINE SAFETY DISCLOSURES

Not Applicable.

PART II

Item 5. MARKET FOR REGISTRANT'S COMMON STOCK, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASER OF EQUITY SECURITIES.

Market Information of Common Stock

Our common stock has been listed on the Nasdaq Capital Market under the symbol "SSTI" since June 7, 2017. Prior to that date, there was no public trading market for our common stock.

On March 1, 2019, the last reported sale price of our common stock as reported on the Nasdaq Capital Market was $49.33 per share. As of March 1, 2019, we had approximately 80 holders of record of our common stock. The actual number of stockholders is greater than this number of record holders, and includes stockholders who are beneficial owners, but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividend Policy

We have never declared or paid any dividends on our capital stock. We currently intend to retain all available funds and any future earnings for the operation and expansion of our business and, therefore, we do not anticipate declaring or paying cash dividends in the foreseeable future. The payment of dividends will be at the discretion of our board of directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, any limitations on payment of dividends present in our future debt agreements, and other factors that our board of directors may deem relevant.

Sale of Unregistered Securities and Use of Proceeds

(a) Unregistered Sales of Equity Securities

On October 1, 2018, we issued 2,084 shares of our common stock to a holder of one of our outstanding warrants upon that holder's exercise pursuant to a cashless exercise provision. The warrant had an exercise price of $5.8667 per share. The shares of common stock were issued by the Company in reliance on Section 4(a)(2) of the Securities Act of 1933, as amended.

(b) Use of Proceeds from Public Offering of Common Stock

Our initial public offering of common stock was effected through a Registration Statement on Form S-1 (File No. 333-217603), which was declared effective on June 6, 2017. There has been no material change in the planned use of proceeds from our initial public offering as described in our final prospectus filed with the SEC pursuant to Rule 424(b) and other periodic reports previously filed with the SEC.

Purchase of Equity Securities by the Issuer and Affiliated Purchasers

None.

Securities Authorized for Issuance under Equity Compensation Plans

Information about securities authorized for issuance under our equity compensation plan is incorporated herein by reference to Item 12 of Part III of this Annual Report on Form 10-K.

Item 6. SELECTED CONSOLIDATED FINANCIAL AND OTHER DATA.

The following selected consolidated financial data should be read together with our consolidated financial statements and related notes, as well as the information found under the sections titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this Annual Report on Form 10-K. We derived the selected consolidated financial data as of and for the years ended December 31, 2018, 2017, and 2016 from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results to be expected in the future.

	Year Ended December 31,		
	2018	2017	2016
	(in thousands, except per share data)		
Consolidated Statements of Operations Data:			
Revenues	$ 34,753	$ 23,763	$ 15,507
Costs			
Cost of revenues (1)	14,846	11,370	9,549
Impairment of property and equipment	686	793	—
Total costs	15,532	12,163	9,549
Gross profit	19,221	11,600	5,958
Operating expenses			
Sales and marketing (1)	8,377	6,179	4,475
Research and development (1)	4,987	4,159	4,093
General and administrative (1)	8,425	5,595	2,362
Total operating expenses	21,789	15,933	10,930
Loss from operations	(2,568)	(4,333)	(4,972)
Other income (expense), net			
Remeasurement of convertible preferred stock warrant liability	—	(3,725)	(524)
Loss on early extinguishment of debt	—	(479)	—
Interest income (expense), net	82	(1,114)	(1,317)
Other expense, net	(252)	(169)	(47)
Loss before income taxes	(2,738)	(9,820)	(6,860)
Provision (benefit) for income taxes	(13)	160	—
Net loss	$ (2,725)	$ (9,980)	$ (6,860)
Net loss per share, basic and diluted	$ (0.26)	$ (1.61)	$ (4.28)
Weighted average shares used in computing net loss per share, basic and diluted	10,569,007	6,197,775	1,602,402

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

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Stock-based compensation expense:			
Cost of revenues	$ 316	$ 75	$ 11
Sales and marketing	770	133	7
Research and development	272	69	18
General and administrative	1,110	351	47
Total stock-based compensation expense	$ 2,468	$ 628	$ 83
Depreciation and amortization expense:			
Cost of revenues	$ 3,752	$ 3,027	$ 2,462
Sales and marketing	65	37	31
Research and development	63	35	39
General and administrative	37	22	19
Total depreciation and amortization expense	$ 3,917	$ 3,121	$ 2,551

	As of December 31,	
	2018	2017
	(in thousands)	
Consolidated Balance Sheet Data:		
Cash and cash equivalents	$ 10,218	$ 19,567
Accounts receivable and unbilled revenue	$ 15,267	$ 3,928
Deferred revenue, current and non-current	$ 24,162	$ 18,490
Working capital (deficit)	$ (1,764)	$ 3,142
Total stockholders' equity	$ 17,147	$ 12,162

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

You should read the following discussion and analysis of our financial condition and results of operations together with our consolidated financial statements and accompanying notes included in this Annual Report on Form 10-K. This Annual Report on Form 10-K contains "forward-looking statements" within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). These statements are often identified by the use of words such as "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "project," "will," "would" or the negative or plural of these words or similar expressions or variations. Such forward-looking statements are subject to a number of risks, uncertainties, assumptions and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified herein, and those discussed in the section titled "Risk Factors", set forth in Part I, Item 1A of this Annual Report on Form 10-K and in our other SEC filings. You should not rely upon forward-looking statements as predictions of future events. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances after the date of such statements.

Overview

We provide precision-policing and security solutions for law enforcement and security personnel to help deter gun violence and make cities, campuses and facilities safer. Our flagship public safety solution, ShotSpotter Flex, is the leading outdoor gunshot detection, location and alert system. Our newly-acquired patrol management software, ShotSpotter Missions (formerly HunchLab), creates crime forecasts designed to enable more precise and effective use of patrol resources to deter crime. Our security solutions, ShotSpotter SecureCampus and ShotSpotter SiteSecure, are designed to help law enforcement and security personnel serving universities, corporate campuses and key infrastructure or transportation centers mitigate risk and enhance security by notifying authorities of a potential outdoor gunfire incident, saving critical minutes for first responders to arrive. Our gunshot detection solutions are trusted by 100 cities as of December 31, 2018.

Our gunshot detection solutions consist of highly-specialized, cloud-based software integrated with proprietary, internet-enabled sensors designed to detect outdoor gunfire. The speed and accuracy of our gunfire alerts enable law enforcement and security personnel to reduce their response times to shooting events, which can increase the chances of apprehending the shooter, providing timely aid to victims, and identifying witnesses before they scatter, as well as aid in evidentiary collection and serve as an overall deterrent. When a potential gunfire incident is detected by our sensors, our system applies machine learning combined with a human review to analyze and validate the incident and precisely locate where the incident occurred. An alert containing a location on a map and critical information about the incident is transmitted directly to subscribing law enforcement or security personnel through any internet-connected computer and to iPhone or Android mobile devices.

Our software transmits validated gunfire data along with a recorded digital file of the triggering sound to our Incident Review Center ("IRC"), where our trained acoustic experts are on duty 24 hours a day, seven days a week, 365 days a year to screen and confirm actual gunfire incidents. Our acoustic experts can supplement alerts with additional tactical information, such as the potential presence of multiple shooters or the use of high-capacity weapons. Gunshot incidents reviewed by our IRC result in alerts typically sent within 45 seconds of the gunfire incident.

We generate annual subscription revenues from the deployment of ShotSpotter Flex on a per-square-mile basis. Our security solutions, ShotSpotter SecureCampus and ShotSpotter SiteSecure, are typically sold on a subscription basis, each with a customized deployment plan. Our ShotSpotter Missions solution pricing is under development, but will also be subscription based. As of December 31, 2018, we had ShotSpotter Flex, ShotSpotter SecureCampus and ShotSpotter SiteSecure coverage areas under contract of approximately 670 square miles, of which 648 square miles had gone live as of December 31, 2018. The 648-mile number reflects five additional miles covered by existing customers that were previously unaccounted due to rounding, as a result of an internal review of our existing coverage miles. These coverage areas included 100 cities and 10 campuses/sites across the United States and in South Africa, including three of the ten largest cities in the United States. For the year ended December 31, 2018, substantially all of our revenues are attributable to customers based in the United States.

While we intend to continue to devote resources to increase sales of ourShotSpotter SecureCampus and ShotSpotter SiteSecure solutions, and are still developing the pricing model for ShotSpotter Missions, we expect that revenues from our ShotSpotter Flex solution will continue to comprise a substantial majority of our revenues going forward.

We enter into subscription agreements on a term basis that typically range from one to five years in duration, with the majority having a contract term of one year. Substantially all of our sales are to governmental agencies and universities, which often undertake a prolonged contract evaluation process that affects the size or the timing of our sales contracts and may likewise increase our customer acquisition costs. For a discussion of the risks associated with our sales cycle, see risks entitled “Our sales cycle can be unpredictable, time-consuming and costly, and our inability to successfully complete sales could harm our business” and “Because we generally recognize our subscription revenues ratably over the term of our contract with a customer, fluctuations in sales will not be fully reflected in our operating results until future periods” in Item 1A, *Risk Factors*, included in this Annual Report on Form 10-K.

We rely on a limited number of suppliers and contract manufacturers to produce components of our solutions. We have no long-term contracts with these manufacturers and purchase from them on a purchase-order basis. Our outsourced manufacturers generally procure the components directly from third-party suppliers. Although we use a limited number of suppliers and contract manufacturers, we believe that we could find alternate suppliers or manufacturers if circumstances required us to do so, in part because a significant portion of the components required by our solutions is available off the shelf. For a discussion of the risks associated with our limited number of suppliers, see risk entitled “We rely on a limited number of suppliers and contract manufacturers, and our proprietary ShotSpotter sensors are manufactured by a single contract manufacturer” in in Item 1A, *Risk Factors*, included in this Annual Report on Form 10-K.

We generated revenues of $34.8 million, $23.8 million and $15.5 million for the years ended December 31, 2018, 2017, and 2016, respectively, a year-over-year increase of 46% and 53%. For 2018, 2017, and 2016, revenues from ShotSpotter Flex represented approximately 97%, 98% and 99% of total revenues, respectively. Our two current largest customers, The City of Chicago and the City of New York, each accounted for 22% and 15%, respectively, of our total revenues for the year ended December 31, 2018. The City of New York and Puerto Rico Housing Administration, accounted for 18% and 7%, respectively, of our total revenues for the year ended December 31, 2017, and each accounted for 12% of our total revenues for the year ended December 31, 2016. Substantially all of our revenues for the years ended December 31, 2018, 2017, and 2016 were derived from customers within the United States (including Puerto Rico and the U.S. Virgin Islands).

We have not yet achieved profitability on an annual basis and had net losses of $2.7 million, $10.0 million and $6.9 million for the years ended December 31, 2018, 2017, and 2016, respectively. Our accumulated deficit was $97.4 million and $97.6 million as of December 31, 2018 and 2017, respectively.

In September 2017, we used $13.7 million from the net proceeds of our initial public offering to voluntarily repay our outstanding indebtedness of $13.5 million and $0.2 million in prepayment fees under a promissory note (the “2015 Term Note”). In connection with this early extinguishment of debt, we wrote off $0.3 million of unamortized debt issuance costs.

During the years ended December 31, 2018, 2017, and 2016, we went “live” on 168, 114 and 72 net new square miles of coverage, respectively. In each case, the increase in coverage was achieved through a combination of new customers and expansions with existing customers and, in the case of year ended December 31, 2017, the 114 net new square miles included the impact of a 33coverage mile reduction as a result of our discontinuation in service of Puerto Rico and the U.S Virgin Islands due to the devastation caused by the hurricanes.

In connection with the cessation of our service with Puerto Rico and the U.S. Virgin Islands, we classified the contracts as expired, and stopped recognizing revenue and accelerated the deferred revenues related to setup fees under these contracts.

We have focused on rapidly growing our business and believe that its future growth is dependent on many factors, including our ability to increase our customer base, expand the coverage of our solutions among our existing customers, expand our international presence and increase sales of our security solutions. Our future growth will primarily depend on the market acceptance for outdoor gunshot detection solutions. Challenges we face in this regard include our target customers not having access to adequate funding sources, the fact that contracting with government entities can be complex, expensive, and time-consuming and the fact that our typical sales cycle is often very long and can be costly. To combat these challenges, we invest in research and development, increase awareness of our solutions, and hire additional sales representatives to drive sales in order to continue to maintain our position as a market leader. In addition, we believe that entering into strategic partnerships with other service providers to cities and municipalities offers another potential avenue for expansion, particularly for our ShotSpotter Flex solution.

We will also focus on expanding our business by introducing new products and services to existing customers such as ShotSpotter Missions, as described below. We believe that developing and acquiring products for law enforcement in adjacent categories is a path for additional growth given our large and growing installed base of police departments who trust ShotSpotter's products, support and way of doing business. The ability to cross-sell new products provides an opportunity to grow revenue per customer and lifetime value. Challenges we face in this area include ensuring our new products are reliable, integrated well with other ShotSpotter solutions and priced and serviced appropriately. In some cases, we will need to bring in new skills sets to properly develop, market, sell or service these new products depending on the categories they represent.

In October 2018, we acquired the HunchLab technology and related assets that underline our ShotSpotter Missions solution. ShotSpotter Missions applies risk modeling and artificial intelligence to help forecast when and where crimes are likely to emerge and recommends specific patrol missions and tactics that can deter these events. The HunchLab technology provides a proven, high-value, and complementary solution we can immediately offer to our existing law enforcement customers. We believe our investment will democratize the sharing of important intelligence with patrol officers who currently have limited direct access to crime analysts.

With respect to international sales, we believe that we have the potential to expand our coverage within South Africa and to pursue opportunities in Europe, South America and other regions of the world. For example, we signed a contract with the Bahamas in early 2019. By adding additional sales resources in strategic locations, we believe we will be better positioned to reach these markets. However, we recognize that we have limited international operational experience and currently operate only in one region outside of the United States, South Africa. Operating successfully in international markets will require significant resources and management attention and will subject us to additional regulatory, economic and political risks. Moreover, we anticipate that different political and regulatory considerations that vary across different jurisdictions could extend what is already a lengthy sales cycle.

Initial Public Offering

In June 2017, we completed our IPO in which we sold 3,220,000 shares of our common stock at a price of $11.00 per share. We received net proceeds of $32.4 million, excluding underwriting discounts and commissions, which was recorded to additional paid-in capital.

As a result of the IPO:

- all outstanding Series B-1 convertible preferred stock warrants were remeasured at fair value using the Black-Scholes model, resulting in a loss of $3.7 million, which was recorded in other expense, net.
- the entire balance of $5.7 million in convertible preferred stock warrant liability was reclassified to additional paid-in capital. All preferred stock warrants were converted into common stock warrants. In addition, we issued to the lead underwriter in the IPO a warrant to purchase up to 84,000 shares of our common stock. See Note 15, *Convertible Preferred Stock Warrants and Common Stock Warrants*, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for further details regarding the warrants.

- all shares of the then-outstanding convertible preferred stock were converted into 4,689,753 shares of common stock. This resulted in a reclassification of $42.1 million to additional paid-in capital.
- offering costs incurred by us were approximately $1.9 million, excluding underwriting commissions and discounts, which was recorded to additional paid-in capital.

Key Business Metrics

We focus primarily on three key business metrics in order to measure our operational performance and inform strategic decisions. Revenue retention rate and sales and marketing spend per $1.00 of new annualized contract value are each calculated annually. Net new "go-live" square miles is calculated on a quarterly basis. All of these metrics are delivered using internal data and may be calculated in a manner different than similar metrics used by other companies.

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Revenue retention rate	139 %	141 %	127 %
Sales and marketing spend per $1.00 of new annualized contract value	$ 0.30	$ 0.34	$ 0.28
Net new "go-live" square miles	168	114	72

Revenue Retention Rate

We calculate our revenue retention rate for a period by dividing the (a) total revenues for such year from those customers who were customers during the corresponding prior year by (b) the total revenues from all customers in the corresponding prior year. For the purposes of calculating our revenue retention rate, we count as customers all entities with which we had contracts in the applicable year. Revenue retention rate for any given period does not include revenues attributable to customers first acquired during such period. We focus on our revenue retention rate because we believe that this metric provides insight into revenues related to and retention of existing customers. If our revenue retention rate for a year exceeds 100%, as it did in the years presented above, this indicates a low churn and means that the revenues retained during the year, including from customer expansions, more than offset the revenues that we lost from customers that did not renew their contracts during the year. As further evidence of our low churn, since transitioning our public safety business to the ShotSpotter Flex model in 2011, we have added over 60 new ShotSpotter Flex customers, but only six such customers have terminated service, two of which were terminated due to hurricane damage. We do not anticipate maintaining our revenue retention rate at the levels observed in 2018 and 2017. For example, in 2018, our revenue retention rate excluding our largest customer, hicago, would have been 118%. We measure revenue retention rate on an annual basis.

Sales and Marketing Spend per $1.00 of New Annualized Contract Value

We calculate sales and marketing spend as the total sales and marketing expense during a year divided by the first 12 months of contract value for contracts entered into during the same year. We use this metric to measure the efficiency of our sales and marketing efforts in acquiring customers, renewing customer contracts and expanding their coverage areas. We measure sales and marketing spend on an annual basis.

Net New "Go-Live" Miles

Net new "go-live" square miles represent the square miles covered by deployments that were formally approved by customers during the quarter, both from initial and expanded customer deployments, net of square miles that ceased to be "live" during the quarter due to customer cancellations. New square miles include deployed square miles that may have been sold, or booked, in prior quarters. We focus on net new "go-live" miles as a key business metric to measure our operational performance and inform strategic decisions.

Components of Results of Operations

Presentation of Financial Statements

Our consolidated financial statements include the accounts of our wholly-owned South African subsidiary, ShotSpotter (Pty) Ltd. All intercompany balances and transactions have been eliminated in consolidation.

Revenues

We derive substantially all of our revenues from subscription services. We recognize subscription fees ratably, on a straight-line basis, over the term of the subscription, which for new customers is typically initially one to three years in length. Customer contracts include one-time set-up fees for the set-up of our sensors in the customer's coverage areas, training and third-party integration licenses. If the set-up fees are deemed to be a material right, they are recognized ratably over three years. Training and third-party integration license fees are recognized upon delivery.

We generally invoice customers for 50% of the total contract value when the contract is fully executed and for the remaining 50% when the subscription service is operational and ready to go live – that is, when the customer has acknowledged the completion of all the deliverables in the signed customer acceptance form. All fees billed in advance of services being delivered are recorded as deferred revenue. The timing of when new miles go live can be uncertain and, as a result, can have a significant impact on the levels of revenue and deferred revenue from quarter to quarter. For our ShotSpotter Flex solution, our pricing model is based on a per-square-mile basis. For ShotSpotter SecureCampus and ShotSpotter SiteSecure, our pricing model is on a customized-site basis. As a result of our process for invoicing contracts and renewals upon execution, our cash flow from operations and accounts receivable can fluctuate due to timing of contract execution and timing of deployment.

We generally invoice subscription service renewals for 100% of the total contract value when the renewal contract is executed. Renewal fees are recognized ratably over the term of the renewal, which is typically one year. While most of our customers elect to renew their agreements, in some cases, they may not be able to obtain the proper approvals or funding to complete the renewal prior to expiration. For these customers, we stop recognizing subscription revenues at the end of the current contract term, even though we may continue to provide services for a period of time until the renewal process is completed. Once the renewal is complete, we then recognize subscription revenues for the period between the expiration of the term of the agreement and the completion of the renewal process in the month in which the renewal is executed. If a customer declines to renew its subscription prior to the end of five years, then the remaining setup fees are immediately recognized.

It is likely that international deployments may or will have different payment and billing terms due to their local laws, restrictions or other customary terms and conditions.

Costs

Costs include the cost of revenues and charges for impairment of property and equipment. Cost of revenues primarily includes depreciation expense associated with capitalized customer acoustic sensor networks, communication expenses, costs related to hosting our service application, costs related to operating our Incident Review Center (the "IRC"), providing remote and on-site customer support and maintenance and forensic services, certain personnel and related costs of operations, stock-based compensation and allocated overhead, which includes IT, facility and equipment depreciation costs.

Impairment of property and expense is primarily attributable to our write-off of the remaining book value of indoor sensor inventory and indoor sensor networks installed at certain security customers during the year ended December 31, 2018 and write-off for deployed equipment in Puerto Rico and the U.S. Virgin Islands that was destroyed by the hurricanes in September 2017.

Starting mid 2020 through 2022 we will have to upgrade our sensors that use third-generation cellular communications to the fourth-generation Long-Term Evolution wireless technology, which will increase our cost of revenues.

In the near term, we expect our cost of revenues to increase in absolute dollars to the extent our installed base increases, but decrease as a percentage of revenues because certain of our costs of revenues are fixed and do not need to increase commensurate with increases in revenues. In addition, depreciation expense associated with deployed equipment is recognized only over the first five years of a customer contract.

Operating Expenses

Operating expenses consist of sales and marketing, research and development, and general and administrative expenses. Salaries, bonuses, stock-based compensation expense and other personnel costs are the most significant components of each of these expense categories. We include stock-based compensation expense incurred in connection with the grant of stock options and restricted stock units to the applicable operating expense category based on the equity award recipient's functional area.

We are focused on executing on our growth strategy. As a result, in the near term we expect our total operating expenses to increase in absolute dollars as we incur additional expenses due to growth and as a result of operating as a public company. Although our operating expenses will fluctuate, we expect that over time, they will generally decrease as a percentage of revenues.

Sales and Marketing

Sales and marketing expenses primarily consist of personnel-related costs attributable to our sales and marketing personnel, commissions earned by our sales personnel, marketing expenses for trade shows, conferences and conventions, consulting fees, travel and facility-related costs and allocated overhead.

In the near term, we expect our sales and marketing expenses to increase in absolute dollars primarily due to planned growth in our sales and marketing organization. This growth will include adding sales and marketing personnel and expanding our marketing activities to continue to generate additional leads. Sales and marketing expense may fluctuate from quarter to quarter based on the timing of commission expense, marketing campaigns and tradeshows.

Research and Development

Research and development expenses primarily consist of personnel-related costs attributable to our research and development personnel, consulting fees and allocated overhead. We have devoted our product development efforts primarily to develop new lower-cost sensor hardware, develop new features including a mobile application, improve functionality of our solutions and adapt to new technologies or changes to existing technologies.

We are investing in engineering resources to support further development of the ShotSpotter Missions crime forecasting software. The focus of this effort will be in the areas of data science modeling, user experience, core application functionality and backend infrastructure improvements including integration of ShotSpotter gunshot data to enhance forecasting of gun violence.

In the near term, we expect our research and development expenses to increase in absolute dollars as we increase our research and development headcount to further strengthen our software and invest in the development of our service.

We will continue to invest in research and development to leverage our large and growing database of acoustic events, which includes those from both gunfire and non-gunfire. We also intend to leverage third-party AI and our own evolving cognitive and analytical applications to improve the efficiency of our solutions, which may include internal software applications, data analysis, event routing and customer outputs. Certain of these applications and outputs may expand the platform of services that we will be able to offer our customers.

General and Administrative

General and administrative expenses primarily consist of personnel-related costs attributable to our executive, finance, and administrative personnel, legal, accounting and other professional services fees, other corporate expenses and allocated overhead. We have recently incurred additional expenses in expanding our operations and for our IPO, and will continue to incur additional expenses as a public company, including increased personnel, legal, insurance and accounting expenses, and the additional costs of achieving and maintaining compliance with Section 404 of the Sarbanes-Oxley Act and other regulations.

In the near term, we expect our general and administrative expenses to increase significantly in absolute dollars as we grow our business, support our operations as a public company and increase our headcount.

Other Expense, Net

Other expense, net, consists primarily of interest expense on our outstanding debt, and losses from the remeasurement of our convertible preferred stock warrant liability and losses from early extinguishment of debt. The convertible preferred stock warrant liability was reclassified into additional paid-in capital upon our IPO and will no longer be remeasured at each balance sheet date.

Income Taxes

Our income taxes are based on the amount of our taxable income and enacted federal, state and foreign tax rates, adjusted for allowable credits, deductions and the valuations allowance against deferred tax assets, as applicable.

Results of Operations

Comparison of Years Ended December 31, 2018 and 2017

The following table sets forth our consolidated statements of operations data for the years ended December 31, 2018 and 2017 (in thousands):

	2018	As a % of Revenues	2017	As a % of Revenues	Change $	Change %
Revenues	$ 34,753	100 %	$ 23,763	100 %	$ 10,990	46 %
Costs						
Cost of revenues	14,846	43 %	11,370	48 %	3,476	31 %
Impairment of property and equipment	686	2 %	793	3 %	(107)	(13 %)
Total costs	15,532	45 %	12,163	51 %	3,369	28 %
Gross profit	19,221	55 %	11,600	49 %	7,621	66 %
Operating expenses:						
Sales and marketing	8,377	24 %	6,179	26 %	2,198	36 %
Research and development	4,987	14 %	4,159	18 %	828	20 %
General and administrative	8,425	24 %	5,595	24 %	2,830	51 %
Total operating expenses	21,789	63 %	15,933	67 %	5,856	37 %
Loss from operations	(2,568)	(7 %)	(4,333)	(18 %)	1,765	(41 %)
Other expense, net	(170)	(1 %)	(5,487)	(23 %)	5,317	(97 %)
Benefit (provision) for income taxes	13	—	(160)	(1 %)	173	(108 %)
Net loss	$ (2,725)	(8 %)	$ (9,980)	(42 %)	$ 7,255	(73 %)

Revenues

The increase of $11.0 million in revenues was primarily attributable to $5.2 million from expansions of existing customer coverage areas, $1.9 million of new customer solutions that went live during 2018, and $4.8 million related primarily to customer deployments that went live in 2017 and for which we recognized a full year of revenues in 2018.

Costs

The increase in costs of $3.4 million was due primarily to a $1.4 million increase in overhead expenses resulting from an increase in employee headcount, a $0.8 million increase in operating costs, which includes costs incurred in providing remote and on-site customer support and maintenance services, infrastructure hosting for our service application and costs related to operating our IRC, and a $0.6 million increase in depreciation offset by $0.4 million decrease in telecommunication fees and $0.1 million in lower impairment charges. During 2018, we recognized impairment expense of $0.7 million for the impairment of property and equipment primarily related to the remaining book value of indoor sensor inventory and indoor sensor networks installed at certain security customers. During 2017, we recognized impairment expense of $0.8 million for the impairment of property and equipment primarily related to the remaining net book value for deployed equipment that was presumed destroyed by hurricanes in September 2017.

Gross margin for 2018 increased six percentage points from gross margin for 2017 because certain costs of revenues are fixed and did not increase commensurate with the increase in subscription revenues.

Operating Expenses

Sales and Marketing Expense

The increase in sales and marketing expense of $2.2 million was primarily due to an increase of $1.3 million in salaries, commissions, recruiting, and stock-based compensation expense, and a $0.7 million increase in consulting and outside services associated with expansion of our sales, marketing and customer success organization.

Research and Development Expense

The increase in research and development expense of $0.8 million was due primarily due to a $0.7 million increase in salaries, benefits and bonuses for research and development personnel, and stock-based compensation expense and a $0.1 million increase in consulting fees related to the development of our mobile applications and next-generation sensors.

General and Administrative Expense

The increase in general and administrative expense of $2.8 million from 2017 to 2018 was due to a $2.0 million increase in legal, accounting and other outside services fees associated with litigation and settlement expenses, business acquisition expenses, and operating as a public company, a $0.4 million increase in non-employee director compensation, and a $0.4 million increase in personnel expense primarily due to stock-based compensation expense.

Other Expense, Net

The decrease in other expense, net of $5.3 million was due to a $3.7 million decrease in expense related to the remeasurement of the preferred stock warrant liability due to a final remeasurement upon our IPO in the second quarter of 2017, a $1.6 million decrease in interest expense due to the termination of debt in the third quarter of 2017, a $0.2 million in prepayment fees in connection with the early extinguishment of debt, and a write-off of $0.3 million of unamortized debt issuance costs due to the termination of debt in the third quarter on 2017.

Income Taxes

Our income taxes are based on the amount of our taxable income and enacted federal, state and foreign tax rates, adjusted for allowable credits, deductions and the valuations allowance against deferred tax assets, as applicable. For the years ended December 31, 2018 and 2017, our provision for income taxes consisted of a benefit (provision) for foreign income taxes only.

Comparison of Years Ended December 31, 2017 and 2016

The following table sets forth our selected consolidated statements of operations data for the years ended December 31, 2017 and 2016 (in thousands):

	2017	As a % of Revenues	2016	As a % of Revenues	Change $	Change %
Revenues	$ 23,763	100 %	$ 15,507	100 %	$ 8,256	53 %
Costs						
Cost of revenues	11,370	48 %	9,549	62 %	1,821	19 %
Impairment of property and equipment	793	3 %	—	—	793	100 %
Total costs	12,163	51 %	9,549	62 %	2,614	27 %
Gross profit	11,600	49 %	5,958	38 %	5,642	95 %
Operating expenses:						
Sales and marketing	6,179	26 %	4,475	29 %	1,704	38 %
Research and development	4,159	18 %	4,093	26 %	66	2 %
General and administrative	5,595	24 %	2,362	15 %	3,233	137 %
Total operating expenses	15,933	67 %	10,930	70 %	5,003	46 %
Loss from operations	(4,333)	(18 %)	(4,972)	(32 %)	639	(13 %)
Other expense, net	(5,487)	(23 %)	(1,888)	(12 %)	(3,599)	191 %
Provision for income taxes	(160)	(1 %)	—	—	(160)	(100 %)
Net loss	$ (9,980)	(42 %)	$ (6,860)	(44 %)	$ (3,120)	45 %

Revenues

The increase of $8.3 million was primarily attributable to $5.9 million from new customers and expansions of existing customer coverage areas, $2.2 million from a full year of revenue from the customers who went live in 2016, and $0.9 million in accelerated revenue recognition of deferred setup fees relating to square miles that ceased to be live, primarily, in Puerto Rico and the U.S. Virgin Islands, offset by a decrease of $0.4 million from existing customers, due to non-renewing and late-renewing customers during the year ended December 31, 2017.

Costs

The increase of $2.6 million was due primarily to a $0.5 million increase in depreciation and telecommunications expenses associated with expansions in existing customer coverage areas, a $0.8 million impairment charge to expense the remaining net book value of acoustic sensor networks in Puerto Rico and the U.S. Virgin Islands that were presumed destroyed by the hurricanes in September 2017, and a $0.7 million increase in salaries expenses resulting from an increase in our headcount.

Gross margin increased by 11 percentage points because certain costs of revenues are fixed and did not increase commensurate with the increase in subscription revenues, offset in part by the effect of the impairment charge described above.

Operating Expenses

Sales and Marketing Expense

The increase of $1.7 million was primarily due to a $1.4 million increase in salaries, commissions and stock-based compensation expense associated with expansion of our sales, marketing and customer success organization, a $0.3 million increase in travel expense associated with the increase in personnel, and $0.1 million in bad debt expense, offset by a decrease of $0.2 million in third party commissions paid for South Africa, during the year ended December 31, 2017.

Research and Development Expense

The increase of $0.1 million was due primarily to a $0.5 million increase in personnel and recruiting expenses during to the hiring of new personnel during the year ended December 31, 2017, offset in part by decreased consulting expenses of $0.4 million related to the development of new variants of our sensors that were incurred in the prior year.

General and Administrative Expense

The increase of $3.2 million was due to a $0.9 million increase in salaries, benefits and bonuses resulting from an increase in headcount, including the addition of our chief financial officer, a $0.4 million increase in cash and stock-based compensation for directors, a $1.5 million increase in legal, listing, and accounting expenses, and a $0.3 million increase in insurance premiums in the year ended December 31, 2017.

Other Expense, Net

The increase of $3.6 million was due to a $3.2 million increase in expense related to the remeasurement of the preferred stock warrant liability due to a final remeasurement upon our IPO, $0.2 million in prepayment fees in connection with the early extinguishment of debt and the write-off of $0.3 million of unamortized debt issuance costs. This increase was offset by a $0.2 million decrease in interest expense due to termination of debt in the third quarter of 2017.

Income Taxes

Our income taxes are based on the amount of our taxable income and enacted federal, state and foreign tax rates, adjusted for allowable credits, deductions and the valuations allowance against deferred tax assets, as applicable. For the year ended December 31, 2017, our provision for income taxes consists of the foreign taxes only.

Liquidity and Capital Resources

Sources of Funds

Our operations have been financed primarily through net proceeds from the sale of equity, debt financing arrangements and cash from operating activities. Our principal source of liquidity is cash and cash equivalents totaling $10.2 million as of December 31, 2018. We also have a $10.0 million credit facility, of which no amounts outstanding as of December 31, 2018.

We believe our existing cash and cash equivalent balances, our available credit facility and cash flow from operations will be sufficient to meet our working capital and capital expenditure requirements for at least the next 12 months. Our future capital requirements may vary materially from those currently planned and will depend on many factors, including our rate of revenue growth, the timing and extent of spending on sales and marketing, the expansion of sales and marketing activities, the timing of new product introductions, market acceptance of our products and overall economic conditions. We may also seek additional capital to fund our operations, including through the sale of equity or debt financings. To the extent that we raise additional capital through the future sale of equity, the ownership interest of our stockholders will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our existing common stockholders. The incurrence of debt financing would result in debt service obligations and the instruments governing such debt could provide for operating and financing covenants that would restrict our operations.

Use of Funds

Our historical uses of cash have primarily consisted of cash used for operating activities, such as expansion of our sales and marketing operations, research and development activities and other working capital needs, and cash used in investing activities, such as property and equipment expenditures to install infrastructure in customer cities in order to deliver our solutions.

On October 3, 2018, we acquired certain technology, referred to as HunchLab, and related assets from Azavea Inc. The purchase consideration totaled $2.5 million, consisting of $1.7 million in cash and a contingent earnout payable in cash for up to $750,000 based on HunchLab's revenues generated over the three-year period following the acquisition date.

In September 2017, we voluntarily repaid our outstanding borrowing of $13.5 million under the 2015 Term Note. This resulted in a loss on early extinguishment of debt of $0.2 million for prepayment fees and other miscellaneous fees, and $0.3 million for the write-off of a portion of our unamortized debt issuance costs.

Credit Facility

On September 27, 2018, we entered into the Umpqua Credit Agreement, which allows us to borrow up to $10.0 million under a revolving loan facility. We intend to use the revolving loan facility for general working capital purposes.

Prior to the repayment of all our outstanding indebtedness under the 2015 Term Note in September 2017, we were a party to a Loan and Security Agreement with Orix Growth Capital, LLC (the "Orix Loan Agreement"), which allowed us to borrow up to $15.0 million. In September 2017, our credit facility with Orix Growth Capital, LLC pursuant to the Orix Loan Agreement was terminated in connection with such repayment.

Cash Flows

Comparison of Years Ended December 31, 2018, 2017 and 2016

The following table presents a summary of our cash flows for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net cash provided by (used in):			
Operating activities	$ (1,386)	$ 3,387	$ 2,257
Investing activities	(10,203)	(6,506)	(4,554)
Financing activities	2,437	18,751	2,008
Net change in cash and cash equivalents	$ (9,152)	$ 15,632	$ (289)

As of December 31, 2018, 2017 and 2016, $1.1 million, $1.0 million and $0.6 million in cash was held by our consolidated foreign subsidiary. In the year ended December 31, 2017, we used $0.5 million of these funds to pay our U.S. parent company for services delivered in the year ended December 31, 2016 under an intercompany license agreement.

Operating Activities

For standard customer deployments, we typically achieve cashflow breakeven, on a direct variable cost-basis, in less than a year from the date of execution of the contract. Our net loss and cash flows provided by operating activities are significantly influenced by our increase in headcount to support our growth, increase in legal and outside services fees, sales and marketing expenses, and our ability to bill and collect in a timely manner.

Operating activities used $1.4 million in 2018 and provided $3.4 million and $2.3 million in 2017 and 2016, respectively. The use of cash for 2018 was primarily driven by changes in accounts receivable and our net loss of $2.7 million and offset by changes in deferred revenue, stock-based compensation, and depreciation and amortization. The generation of cash for 2017 was primarily driven by changes in accrued expenses and deferred revenue, depreciation and amortization and remeasurement of warrant liability, partially offset by changes in accounts receivable and our net loss of $10.0 million.

The generation of cash in 2016, was primarily from $5.8 million in cash provided as a result of changes in operating assets and liabilities, and non-cash charges aggregating $3.3 million which was offset by our net loss of $6.9 million.

Investing Activities

Our investing activities consist primarily of capital expenditures to install our solutions in customer coverage areas, purchases of property and equipment, and investment in intangible assets.

Investing activities used $10.2 million, $6.5 million and $4.6 million in the years ended December 31, 2018, 2017 and 2016, respectively, primarily for property and equipment expenditures to install our solutions in customer coverage areas and business acquisition in the year ended December 31, 2018. We completed our acquisition of the HunchLab assets for approximately $1.7 million in cash at closing.

Financing Activities

Cash generated by financing activities includes net proceeds from the exercise of stock options and warrants, employee stock purchase plan, proceeds from our IPO, borrowings under our term loan pursuant to the Orix Loan Agreement, and, offset by payment of indebtedness, debt issuance and financing costs.

Financing activities provided $2.4 million in the year ended December 31, 2018, primarily from $1.5 million from the exercise of stock options and warrants, and $0.9 million proceeds from employee stock purchase plan.

Financing activities provided $18.8 million in the year ended December 31, 2017, primarily from $32.4 million in net proceeds, excluding underwriting discounts and commissions, from our IPO and $1.5 million in borrowing under our 2015 Term Note (see Note 9, *Financing Arrangements*, to our consolidated financial statements included elsewhere in this Annual Report in Form 10-K, for details regarding the 2015 Term Note), offset in part by $13.5 million in repayment of our 2015 Term Note and $1.9 million in payments for costs associated with our IPO.

Financing activities provided $2.0 million in cash primarily from proceeds from our term loan pursuant to the Orix Loan Agreement of $2.0 million in the year ended December 31, 2016.

Contractual Obligations and Commitments

The following table summarizes our commitments to settle contractual obligations as of December 31, 2018.

	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years	Total
			(in thousands)		
Operating lease (1)	$ 352	$ 661	$ —	$ —	$ 1,013
Data center arrangements (2)	$ 213	$ 71	$ —	$ —	$ 284

(1) Operating lease payments include total future minimum rent payments under a non-cancelable operating lease agreement as described in Note 17, *Commitments and Contingencies.*

(2) Data center arrangements include total future minimum payments under the non-cancelable contracts as described in Note 17, *Commitments and Contingencies.*

The commitment amounts in the table above are associated with contracts that are enforceable and legally binding and that specify all significant terms, including fixed or minimum services to be used, fixed, minimum or variable price provisions and the approximate timing of the actions under the contracts. The table does not include purchase obligations that we can cancel without a significant penalty. These purchase obligations are cancellable at any time, however, we may be required to pay costs incurred through the cancellation date. Historically, we have rarely cancelled these agreements.

Off-Balance Sheet Arrangements

At December 31, 2018, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities, that were established for the purpose of facilitating off-balance sheet arrangements. We do not engage in off-balance sheet financing arrangements. In addition, we do not engage in trading activities involving non-exchange traded contracts.

Critical Accounting Policies and Estimates

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles ("GAAP"). The preparation of our consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of revenues, assets, liabilities, costs and expenses. We base our estimates and assumptions on historical experience and other factors that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates. Our most critical accounting policies are summarized below. See Note 3, *Basis of Presentation and Summary of Significant Accounting Policies*, to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a description of our other significant accounting policies.

Convertible Preferred Stock Warrant Liability — Warrants to purchase shares of convertible preferred stock are classified as liabilities on the consolidated balance sheet at fair value upon issuance because the underlying shares of convertible preferred stock are redeemable at the option of the holders upon the occurrence of certain deemed liquidation events considered not solely within our control, which may therefore obligate us to transfer assets at some point in the future. The convertible preferred stock warrants are subject to remeasurement to fair value at each balance sheet date and any change in fair value is recognized as a component of other expense, net in the consolidated statement of operations. The liability is adjusted for changes in fair value until the earlier of the exercise of expiration of the warrants, or the completion of a deemed liquidation event. The convertible preferred stock warrant liabilities increase or decrease each period based on the fluctuations of the fair value of the underlying security. The liability was reclassified to additional paid-in-capital upon the closing of our IPO in June 2017.

Revenue Recognition — Effective January 1, 2018, we adopted Topic 606*, Revenue from Contracts with Customers ("Topic 606")*. This standard outlines a single comprehensive model for entities to use in accounting for revenues arising from contracts with customers that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services. Topic 606 was adopted on a modified retrospective basis and the new standard was applied only to new contracts entered into after January 1, 2018, and contracts that were not completed as of January 1, 2018. For additional information on the impact to previously reported results, see Note 3 of Notes to Consolidated Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Stock-Based Compensation — We recognize stock-based compensation expense for stock-based compensation awards granted to our employees, directors, and consultants that can be settled in shares of our common stock. Compensation expense for stock-based compensation awards granted is based on the grant date fair value estimate for each award as determined by our board of directors. We recognize these compensation costs on a straight-line basis over the requisite service period of the award, which is generally four years.

Restricted stock unit awards are valued using the last reported stock price on the date of grant.

We estimate the fair value of stock option awards at the date of grant using the Black-Scholes option pricing model, which was developed for use in estimating the value of traded options that have no vesting restrictions and are freely transferable. The fair values generated by the model may not be indicative of the actual fair values of our awards as it does not consider other factors important to those stock-based payment awards, such as continued employment, periodic vesting requirements and limited transferability.

Business Acquisition — We allocate the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. When determining the fair values of assets acquired and liabilities assumed, management makes significant estimates and assumptions, especially with respect to intangible assets. Critical estimates in valuing such intangible assets include, but not limited to, future expected cash flows from customer relationships and developed technology; and discount rates.

Goodwill — Goodwill is tested for impairment at the reporting unit level (operating segment or one level below an operating segment) on an annual basis (October 1 for us) and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value. These events or circumstances could include a significant change in the business climate, legal factors, operating performance indicators, competition, or sale or disposition of a significant portion of a reporting unit. Application of the goodwill impairment test requires judgment, including the identification of reporting units and determination of the fair value of each reporting unit. The fair value of each reporting unit is estimated primarily through the use of a discounted cash flow methodology. This analysis requires significant judgments, including estimation of future cash flows, which is dependent on internal forecasts, estimation of the long-term rate of growth for our business, estimation of the useful life over which cash flows will occur, and determination of our weighted average cost of capital. The estimates used to calculate the fair value of a reporting unit change from year to year based on operating results, market conditions, and other factors. Changes in these estimates and assumptions could materially affect the determination of fair value and goodwill impairment.

Recently Adopted Accounting Pronouncements

Effective January 1, 2018, we adopted Topic 606. This standard outlines a single comprehensive model for entities to use in accounting for revenues arising from contracts with customers that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services. Topic 606 was adopted on a modified retrospective basis and the new standard was applied only to new contracts entered into after January 1, 2018, and contracts that were not completed as of January 1, 2018. The cumulative effect of this adoption of Topic 606 as of January 1, 2018 resulted in a reduction to accumulated deficit of $2.9 million, a reduction of short-term and long-term deferred revenue of $1.2 million and the capitalization of commissions in assets of $1.8 million.

In January 2016, the Financial Accounting Standards Board (“FASB”) issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, which provides targeted improvements to the recognition, measurement, presentation and disclosure of financial assets and financial liabilities. Specific accounting areas addressed include equity investments and financial liabilities reported under the fair value option and valuation allowance assessment resulting from unrealized losses on available-for-sale securities. This ASU also changes certain presentation and disclosure requirements for financial instruments. This ASU is to be applied by means of a cumulative effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. We adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any impact on the consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15 *, Statement of Cash Flows (Topic 230)*: *Classification of Certain Cash Receipts and Cash Payments*, addressing eight specific cash flow issues in an effort to reduce diversity in practice. We adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any material impact on the consolidated statements of cash flows.

In October 2016, the FASB issued ASU 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*. The guidance requires entities to recognize the income tax impact of an inter-entity sale or transfer of an asset other than inventory when the sale or transfer occurs, rather than when the asset has been sold to an outside party. The guidance will require a modified retrospective application with a cumulative catch-up adjustment to opening retained earnings. We adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any impact on the consolidated financial statements.

In November 2016, the FASB issued ASU 2016-18, *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 this ASU as of January 1, 2018. The adoption of this ASU did not have any material impact on the consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, *Scope of Modification Accounting*, which amends the scope of modification accounting for share-based payment arrangements and provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under ASC 718, *Compensation – Stock Compensation*. We adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any impact on the consolidated financial statements.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU 2016-02, *Leas*es ("*Topic 842"*). There have been further amendments, including practical expedients, with the issuance of ASU 2018-01 in January 2018, ASU 2018-11 in July 2018 and ASU 2018-20 in December 2018. The amended guidance requires the recognition of lease assets and lease liabilities on the balance sheet for those leases with terms in excess of 12 months and currently classified as operating leases. Disclosure of key information about leasing arrangements will also be required. We elected the optional transition method which allows entities to continue to apply historical accounting guidance in the comparative periods presented in the year of adoption.

At transition, lessees and lessors may elect to apply a package of practical expedients permitting entities not to reassess: (i) whether any expired or existing contracts are or contain leases; (ii) lease classification for any expired or existing leases and (iii) whether initial direct costs for any expired or existing leases qualify for capitalization under the amended guidance. These practical expedients must be elected as a package and consistently applied. We have elected to apply the package of practical expedients upon adoption.

We identified our operating lease for its corporate headquarters office impacted by the new standard and are currently in the process of updating our business processes and related policies, systems and controls to support recognition and disclosure under the new standard.

Upon adoption of the amended guidance, we expect to recognize right-of-use assets and related lease liabilities of approximately $0.8 million for our contracts which contain an operating lease. We currently do not expect the amended guidance to have any other material impacts on our consolidated financial statements.

In July 2017, the FASB issued ASU 2017-11*, Earnings Per Share ("Topic 260"), Distinguishing Liabilities from Equity ("Topic 480"), Derivatives and Hedging ("Topic 815").* The amendments in Part I of ASU 2017-11 change the classification analysis of certain equity-linked financial instruments (or embedded features) with down round features. When determining whether certain financial instruments should be classified as liabilities or equity instruments, a down round feature no longer precludes equity classification when assessing whether the instrument is indexed to an entity's own stock. The amendments also clarify existing disclosure requirements for equity-classified instruments. The amendments in Part I of this ASU are effective for us as of January 1, 2019. The amendments in Part II of ASU 2017-11 replace the indefinite deferral of certain guidance in Topic 480 with a scope exception. The amendments in Part II of ASU 2017-11 do not require any transition guidance. We do not expect the adoption of this ASU to have any impact on the consolidated financial statements.

Item 7A. QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign exchange rates as well as, to a lesser extent, inflation.

Interest Rate Risk

We are exposed to interest rate risk in the ordinary course of our business. Our cash includes cash in readily available checking and money market accounts. These securities are not dependent on interest rate fluctuations that may cause the principal amount of these assets to fluctuate.

We had cash of $10.2 million as of December 31, 2018, which consists entirely of bank deposits. To date, fluctuations in interest income have not been significant.

We do not enter into investments for trading or speculative purposes and have not used any derivative financial instruments to manage our interest rate risk exposure.

Foreign Currency Exchange Risk

We have foreign currency risks related to our revenues and operating expenses denominated in currencies other than our functional currency, the U.S. dollar, principally the South African Rand. Movements in foreign currencies in which we transact business could significantly affect future net earnings. For example, if the average value of the South African Rand had been 10% higher relative to the U.S. dollar during 2018, 2017 or 2016, it would not have resulted in a significant impact to our results of operations for the years ended December 31, 2018, 2017 or 2016. To date, we have not engaged in any hedging strategies. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in foreign currency rate.

Inflation Risk

We do not believe that inflation has had a material effect on our business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, we may not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of ShotSpotter, Inc.:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of ShotSpotter, Inc. (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive loss, convertible preferred stock and stockholders' equity/(deficit), and cash flows, for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of their operations and their 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.

Basis for Opinion

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

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

Our audits included performing procedures to assess the risks of material misstatement of the 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. We believe that our audits provide a reasonable basis for our opinion.

/s/ Baker Tilly Virchow Krause, LLP

We have served as the Company's auditor since 2016.

Minneapolis, Minnesota
March 4, 2019

ShotSpotter, Inc.

Consolidated Balance Sheets
(In thousands, except share and per share data)

	December 31,	
	2018	2017
Assets		
Current assets		
Cash and cash equivalents	$ 10,218	$ 19,567
Accounts receivable and unbilled revenue	15,267	3,928
Prepaid expenses and other current assets	1,527	839
Restricted cash	60	30
Total current assets	27,072	24,364
Property and equipment, net	16,504	11,596
Goodwill	1,379	—
Intangible assets, net	242	95
Other assets	1,922	143
Total assets	$ 47,119	$ 36,198
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 1,307	$ 1,627
Deferred revenue, short-term	23,102	15,780
Accrued expenses and other current liabilities	4,427	3,815
Total current liabilities	28,836	21,222
Deferred revenue, long-term	1,060	2,710
Other liabilities	76	104
Total liabilities	29,972	24,036
Commitments and contingencies (Note 17)		
Stockholders' equity		
Preferred stock: $0.005 par value; 20,000,000 shares authorized; no shares issued and outstanding as of December 31, 2018 and 2017	—	—
Common stock: $0.005 par value; 500,000,000 shares authorized; 10,864,722 and 9,827,129 shares issued and outstanding as of December 31, 2018 and 2017, respectively	55	48
Additional paid-in capital	114,618	109,708
Accumulated deficit	(97,377)	(97,595)
Accumulated other comprehensive income (loss)	(149)	1
Total stockholders' equity	17,147	12,162
Total liabilities and stockholders' equity	$ 47,119	$ 36,198

See accompanying notes to consolidated financial statements.

ShotSpotter, Inc.

Consolidated Statements of Operations
(In thousands, except share and per share data)

	Year Ended December 31,		
	2018	2017	2016
Revenues	$ 34,753	$ 23,763	$ 15,507
Costs			
Cost of revenues	14,846	11,370	9,549
Impairment of property and equipment	686	793	—
Total costs	15,532	12,163	9,549
Gross profit	19,221	11,600	5,958
Operating expenses			
Sales and marketing	8,377	6,179	4,475
Research and development	4,987	4,159	4,093
General and administrative	8,425	5,595	2,362
Total operating expenses	21,789	15,933	10,930
Operating loss	(2,568)	(4,333)	(4,972)
Other income (expense), net			
Remeasurement of convertible preferred stock warrant liability	—	(3,725)	(524)
Loss on early extinguishment of debt	—	(479)	—
Interest income (expense), net	82	(1,114)	(1,317)
Other expense, net	(252)	(169)	(47)
Total other income (expense), net	(170)	(5,487)	(1,888)
Loss before income taxes	(2,738)	(9,820)	(6,860)
Provision (benefit) for income taxes	(13)	160	—
Net loss	$ (2,725)	$ (9,980)	$ (6,860)
Net loss per share, basic and diluted	$ (0.26)	$ (1.61)	$ (4.28)
Weighted average shares used in computing net loss per share, basic and diluted	10,569,007	6,197,775	1,602,402

See accompanying notes to consolidated financial statements.

ShotSpotter, Inc.

Consolidated Statements of Comprehensive Loss
(In thousands)

	Year Ended December 31,		
	2018	2017	2016
Net loss	$ (2,725)	$ (9,980)	$ (6,860)
Other comprehensive income (loss):			
Change in foreign currency translation adjustment	(150)	3	(2)
Comprehensive loss	$ (2,875)	$ (9,977)	$ (6,862)

See accompanying notes to consolidated financial statements.

ShotSpotter, Inc.

Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity/(Deficit)
(In thousands, except share data)

	Series B-1 Convertible Preferred Stock		Series A-2 Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity/ (Deficit)
	Shares	Amount	Shares	Amount	Shares	Par Value				
Balance at December 31, 2015	3,848,023	$ 22,075	1,176,423	$ 20,000	1,583,601	$ 8	$ 30,295	$ (80,755)	$ —	$ (50,452)
Exercise of stock options					33,395		25			25
Stock-based compensation							83			83
Other comprehensive loss									(2)	(2)
Net loss								(6,860)		(6,860)
Balance at December 31, 2016	3,848,023	$ 22,075	1,176,423	$ 20,000	1,616,996	$ 8	$ 30,403	$ (87,615)	$ (2)	$ (57,206)
Issuance of common stock upon IPO, net $3.0 million in commissions and discounts					3,220,000	16	32,410			32,426
IPO costs							(1,870)			(1,870)
Conversion of convertible preferred stock of common stock upon IPO	(3,848,023)	(22,075)	(1,176,423)	(20,000)	4,689,753	23	42,052			42,075
Reclassification of preferred stock warrant liability into additional paid in capital upon IPO							5,711			5,711
Exercise of stock options					74,984		55			55
Issuance of common stock in connection with cashless exercise of warrants					191,263	1				1
Issuance of common stock from ESPP purchase					34,133		319			319
Stock-based compensation							628			628
Other comprehensive income									3	3
Net loss								(9,980)		(9,980)
Balance at December 31, 2017	—	$ —	—	$ —	9,827,129	$ 48	$ 109,708	$ (97,595)	$ 1	$ 12,162
Exercise of stock options					609,985	3	547			550
Issuance of common stock in connection with exercise of warrants					296,691	1	987			988
Issuance of common stock from ESPP purchase					83,605	—	909			909
Issuance of										

common stock from RSU's vested					47,312	3	(1)			2
Stock-based compensation							2,468			2,468
Other comprehensive income									(150)	(150)
Cumulative effect of change in accounting principle								2,943		2,943
Net loss								(2,725)		(2,725)
Balance at December 31, 2018	—	$ —	—	$ —	10,864,722	$ 55	$ 114,618	$ (97,377)	$ (149)	$ 17,147

See accompanying notes to consolidated financial statements.

ShotSpotter, Inc.

Consolidated Statements of Cash Flows
(In thousands)

	Year Ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net loss	$ (2,725)	$ (9,980)	$ (6,860)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	3,917	3,121	2,551
Impairment of property and equipment	686	793	—
Stock-based compensation	2,468	628	83
Amortization of debt issuance costs	—	132	131
Remeasurement of convertible preferred stock warrant liability	—	3,725	524
Loss on early extinguishment of debt	—	479	—
Loss on disposal of property and equipment	4	—	27
Changes in operating assets and liabilities:			
Accounts receivable	(11,224)	(1,518)	255
Prepaid expenses and other assets	(766)	(247)	(90)
Accounts payable	(346)	291	410
Accrued expenses and other current liabilities	(246)	1,535	1,049
Deferred revenue	6,846	4,428	4,177
Net cash provided by (used in) operating activities	(1,386)	3,387	2,257
Cash flows from investing activities:			
Purchase of property and equipment	(8,444)	(6,430)	(4,476)
Investment in intangible and other assets	(48)	(76)	(78)
Business acquisition	(1,711)	—	—
Net cash used in investing activities	(10,203)	(6,506)	(4,554)
Cash flows from financing activities:			
Proceeds from initial public offering, net of commissions and discounts	—	32,426	—
Proceeds from notes payable	—	1,500	2,000
Repayment of notes payable	—	(13,500)	—
Payment of debt issuance costs	—	(30)	(17)
Payment on debt extinguishment costs	—	(149)	—
Payment of line of credit costs	(10)	—	—
Payments of initial public offering costs	—	(1,870)	—
Proceeds from exercise of stock options	550	55	25
Proceeds from exercise of warrants	988	—	—
Proceeds from employee stock purchase plan	909	319	—
Net cash provided by financing activities	2,437	18,751	2,008
Increase (decrease) in cash, cash equivalents and restricted cash	(9,152)	15,632	(289)
Effect of exchange rate on cash and cash equivalents	(167)	70	30
Cash, cash equivalents and restricted cash at beginning of year	19,597	3,895	4,154
Cash, cash equivalents and restricted cash at end of period	$ 10,278	$ 19,597	$ 3,895
Supplemental cash flow disclosures:			
Cash paid for interest	$ —	$ 1,235	$ 1,186
Supplemental disclosure of non-cash financing activities:			
Estimated fair value of contingent consideration	$ 750	$ —	$ —
Conversion of convertible preferred stock into common stock	$ —	$ 42,075	$ —
Reclassification of convertible preferred stock warrant liability into additional paid-in capital	$ —	$ 5,711	$ —
Deferred offering costs included in other assets	$ 249	$ —	$ —
Line of credit costs included in other assets	$ 91	$ —	$ —
Issuance of warrants in connection with the issuance of notes payable	$ —	$ 111	$ —

See accompanying notes consolidated financial statements.

Note 1. Organization and Description of Business

ShotSpotter, Inc. (the "Company") provides precision-policing solutions for law enforcement to help deter gun violence and make cities, campuses and facilities safer. The company's flagship product, ShotSpotter Flex, is the leading outdoor gunshot detection, location and forensic system trusted by more than 95 cities. ShotSpotter Missions (formerly HunchLab) uses artificial intelligence-driven analysis to help strategically plan patrol missions and tactics for maximum crime deterrence. The Company offers its solutions on a SaaS-based subscription model to its customers.

The Company's principal executive offices are located in Newark, California. The Company has one subsidiary, ShotSpotter (Pty) Ltd. formed in South Africa.

Note 2. Initial Public Offering

In June 2017, the Company completed its initial public offering ("IPO") in which the Company sold 3,220,000 shares of its common stock at a price of $11.00 per share. The Company received net proceeds of $32.4 million, excluding underwriting discounts and commissions, which was recorded to additional paid-in capital. The Company's common stock commenced trading on the Nasdaq Capital Market on June 7, 2017 under the trading symbol "SSTI."

- Immediately prior to the IPO, all outstanding Series B-1 convertible preferred stock warrants were remeasured at fair value using the Black-Scholes model, resulting in a loss of $3.7 million, which was recorded in other expense, net.
- Upon the closing of the IPO, the entire balance of $5.7 million in convertible preferred stock warrant liability was reclassified to additional paid-in capital. All preferred stock warrants were converted into common stock warrants. In addition, the Company issued to the lead underwriter in the IPO a warrant to purchase up to 84,000 shares of its common stock. See Note 14, *Convertible Preferred Stock Warrants and Common Stock Warrants*, for further details regarding the warrants.
- Upon the closing of the IPO, all shares of the then-outstanding convertible preferred stock were converted into 4,689,753 shares of common stock. This resulted in a reclassification of $42.1 million to additional paid-in capital.
- Offering costs incurred by the Company were approximately $1.9 million, excluding underwriting commissions and discounts, which was recorded to additional paid-in capital.

Note 3. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States of America ("U.S. GAAP") and applicable rules and regulations of the Securities and Exchange Commission ("SEC") regarding financial reporting. The consolidated financial statements include the results of the Company and its wholly-owned subsidiary, ShotSpotter (Pty) Ltd. All significant intercompany transactions have been eliminated during consolidation.

In the opinion of management, the accompanying consolidated financial statements reflect all normal recurring adjustments necessary to present fairly the financial position, results of operations, comprehensive loss, equity statement and cash flows for the full year 2018.

June 2017 Amended and Restated Certificate of Incorporation

Prior to the IPO, the Company's Board of Directors (the "Board") and stockholders approved an amendment (the "Charter Amendment") to the Pre-IPO Certificate (as defined below) and an amended and restated certificate of incorporation ("Post-IPO Certificate") that became effective on June 12, 2017. The Charter Amendment increased the number of authorized shares of common stock from 8,600,000 to 500,000,000. Under the Post-IPO Certificate, the Company is authorized to issue two classes of stock to be designated Common Stock and Preferred Stock. See Note 11, *Capital Stock*, for further details regarding these classes of stock.

March 2017 Amendment and Restatement of Certificate of Incorporation

On March 27, 2017, the Company's Board and stockholders approved an amendment and restatement of the Company's then-existing certificate of incorporation (as so amended and restated, the "Pre-IPO Certificate") to provide, among other changes, that each share of Series A-2 convertible preferred stock would automatically convert into 0.715548 shares of common stock upon the consummation of an initial public offering of the Company's capital stock. All share and per share data related to balance sheet and net loss information in the accompanying consolidated financial statements and their related notes have been retroactively adjusted to give effect to the application of this conversion feature when presenting the Series A-2 convertible preferred stock on an as-converted basis.

The Pre-IPO Certificate also provided for (1) an increase in the total number of authorized shares to 14,550,000 and (2) an increase in the number of authorized shares of common stock to 8,600,000, in each case to accommodate the new conversion feature for the outstanding shares of Series A-2 convertible preferred stock.

Reverse Stock Split and Amendment to Certificate of Incorporation

In December 2016, the Board and stockholders approved an amendment and restatement of the Company's then amended and restated certificate of incorporation to effect a one-for-17 reverse stock split of the outstanding shares of the Company's capital stock, such that each 17 shares of capital stock issued and outstanding, automatically and without any action on the part of the respective holders thereof, combined into one share of the same class and series of capital stock.

All share and per share data in the accompanying consolidated financial statements and their related notes for all periods presented have been retroactively adjusted to give effect to the reverse stock split.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and reported amounts of revenues and expenses during the reporting period. On an ongoing basis, management evaluates its significant estimates including the valuation of accounts receivable, the useful lives of tangible and intangible assets, fair values of intangible assets and goodwill, stock-based compensation expense, preferred stock warrant liabilities, and accounting for income taxes. Management bases its estimates on historical experience and on various other market-specific and relevant assumptions it believes to be reasonable under the circumstances. Actual results could differ from those estimates and such differences could be material to the Company's financial position and results of operations.

Revenue Recognition

The Company generates substantially all of its revenues from the sale of gunshot detection subscription services, in which gunshot data generated by Company-owned sensors and software is sold to customers through a cloud-based hosting application for a specified contract period. Typically, the initial contract period is one to five years in length. The subscription contract is generally noncancelable without cause. Generally, these service arrangements do not provide the customer with the right to take possession of the hardware or software supporting the subscription service at any time. A small portion of the Company's revenues are generated from the delivery of setup services to install Company-owned sensors in the customer's coverage area and other services including training and license to integrate with third-party applications.

The Company generally invoices customers for 50% of the total contract value when the contract is fully executed and for the remaining 50% when the subscription service is operational and ready to go live – that is, when the customer has acknowledged the completion of all the deliverables in the signed customer acceptance form. The Company generally invoices subscription service renewals for 100% of the total contract value when the renewal contract is executed. For the public safety solution, the pricing model is based on a per-square-mile basis. For security solutions, the pricing model is on a customized-site basis. As a result of the process for invoicing contracts and renewals upon execution, cash flows from operations and accounts receivable can fluctuate due to timing of contract execution and timing of deployment.

Prior to the adoption of Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers (Topic 606),* the Company recognized revenue in accordance with Accounting Standard Codification ("ASC") 605, *Revenue Recognition*, and, accordingly, when all of the following criteria were met:

- Persuasive evidence of an arrangement exists;
- Delivery has occurred or services have been rendered;
- The sales price is fixed or determinable; and
- Collection of the related receivable is reasonably assured.

Under ASC 605, the Company recognized subscription revenues ratably over the subscription period committed by the customer and commencing when the subscription service was fully operational and ready to go live, that is, upon completion of all deliverables stated in the signed customer acceptance form, assuming all other revenue recognition criteria were met. The Company recognized revenues from setup fees ratably based on the expected customer relationship period, typically over five years, which could extend beyond the initial contract period. In determining the expected customer relationship period, the Company considered specific customer details and renewal history with similar customers. If a customer declined to renew its subscription prior to the end of five years, then the remaining setup fees were immediately recognized.

Effective January 1, 2018, after the adoption of Topic 606, the Company recognizes revenue upon the satisfaction of performance obligations. At contract inception, the Company assesses the services promised in its contracts with customers and identifies a performance obligation for each promise to transfer to the customer a good or service (or bundle of services) that is distinct. To identify the performance obligations, the Company considers all of the services promised in the contract regardless of whether they are explicitly stated or are implied by customary business practices. The Company determined that the subscription services, training, and licenses to integrate with third-party applications are each distinct services that represent separate performance obligations. The setup activities are not distinct from the subscription service and are combined into the subscription service performance obligation. However, setup fees may provide a material right to the customer that has influence over the customers' decision to renew. All setup fees are assessed on a quantitative and qualitative basis to determine whether they represent a distinct performance obligation. The total contract value is allocated to each performance obligation identified based on the standalone selling price of the service. Discounts are allocated pro-rata to the identified performance obligations. For contracts that have an original duration of one year or less, the Company uses the practical expedient applicable to such contracts and does not consider the time value of money.

Revenues from subscription services are recognized ratably, on a straight-line basis, over the term of the subscription. Revenues from material rights are recognized ratably over the period in which they are determined to provide a material right to the customer, which is generally three years. Revenues from training and licenses to integrate with third-party applications are recognized upon delivery which generally occurs when the subscription service is operational and ready to go live and these amounts are immaterial.

Subscription renewal fees are recognized ratably over the term of the renewal, which is typically one year. While most customers elect to renew their agreements, in some cases, they may not be able to obtain the proper approvals or funding to complete the renewal prior to expiration. For these customers, the Company stops recognizing subscription revenues at the end of the current contract term, even though services may continue to be provided for a period of time until the renewal process is completed. Once the renewal is complete, the Company recognizes subscription revenues for the period between the expiration of the term of the agreement and the completion of the renewal process in the month in which the renewal is executed. If a customer declines to renew its subscription prior to the end of three years, then the remaining fees from material rights, if any, are immediately recognized.

As of January 1, 2018, upon the adoption of Topic 606, the Company had total short-term and long-term deferred revenue of $17.3 million. During the year ended December 31, 2018, the Company recognized $9.7 million in revenue from the beginning deferred revenue and $24.8 million from new billings, and added $41.4 million to total short-term and long-term deferred revenue from new billings.

As of December 31, 2018, the Company has estimated remaining performance obligations for contractually committed revenues of $29.3 million, $20.9 million, $14.3 million, and $700,000 that will be recognized during the years ended December 31, 2019, 2020, 2021, and 2022 through 2024, respectively. The timing of revenue recognition includes estimates of go live dates for contracts not yet live. Contractually committed revenue includes deferred revenue as of December 31, 2018 and amounts under contract that will be invoiced after December 31, 2018.

During the year ended December 31, 2018, the Company recognized revenues of $33.9 million from customers in the United States and $0.9 million from a customer in South Africa.

Topic 606 also requires the capitalization of certain incremental costs of obtaining a contract, which impacts the period in which the Company records sales commissions expense. Historically, the Company recognized sales commissions expense upfront. Under Topic 606, the Company is required to capitalize these expenses. As there are not commensurate commissions earned on renewals of the subscription services, the Company concluded that the capitalized commissions are related to subscription services provided under both the initial contract and renewal periods. Therefore, the amortization period for the capitalized commissions is the customer life, which is determined to be five years. As the capitalized commissions are related to subscription services that are transferred over the customer's life, the Company amortizes the capitalized commissions on a straight-line basis of five years. For commissions that are earned on renewal contracts with an original duration of one year or less, the Company uses the practical expedient applicable to such commissions and recognizes the commissions immediately as expense instead of capitalizing. Amortization of capitalized commissions was $0.5 million for the year ended December 31, 2018 and was included in sales and marketing expense in the consolidated statements of operations.

Costs

Costs include the cost of revenues and charges for impairment of property and equipment. Cost of revenues primarily includes depreciation expense associated with capitalized customer acoustic sensor networks, communication expenses, costs related to hosting our service application, costs related to operating our Incident Review Center (the “IRC”), providing remote and on-site customer support and maintenance and forensic services, certain personnel and related costs of operations, stock-based compensation and allocated overhead, which includes information technology, facility and equipment depreciation costs.

Advertising and Promotion Costs

Advertising and promotion costs are expensed as incurred. Advertising and promotion costs were $0.6 million for the year ended December 31, 2018 and $0.5 million for each of the years ended December 31, 2017 and 2016, and were included in sales and marketing expense in the consolidated statements of operations.

Research and Development Costs

Research and development costs are expensed as incurred and consisted primarily of salaries and benefits, consultant fees, certain facilities costs, and other direct costs associated with the continued development of the Company’s solutions.

Cash and Cash Equivalents

Cash and cash equivalents include all cash and highly liquid investments with an original maturity of three months or less.

At December 31, 2018 and 2017, the Company’s cash and cash equivalents consisted of cash deposited in financial institutions.

Restricted Cash

At December 31, 2018 and 2017, restricted cash consisted of certificates of deposit held at a financial institution as collateral for credit cards and letters of credit held by the Company.

Foreign Currency

The functional currency for the Company's foreign subsidiary, ShotSpotter (Pty) Ltd., is the local currency (South African Rand). The assets and liabilities of the subsidiary are translated into U.S. dollars using the exchange rate at the end of each balance sheet date. Revenues and expenses are translated at the average exchange rates for the period. Gains and losses from translations are recognized in foreign currency translation included in accumulated other comprehensive loss in the accompanying consolidated balance sheets. Foreign currency exchange gains and losses are recorded in other expense, net, in the accompanying consolidated statements of operations.

Accounts Receivable, net and Unbilled Revenue

Accounts receivable, net consist of trade accounts receivables from the Company's customers, net of allowance for doubtful accounts if deemed necessary. Accounts receivable are recorded as the invoiced amount. The Company does not require collateral or other security for accounts receivable. Unbilled revenue consists of revenue recognized in advance of invoicing the customer.

The Company periodically evaluates the collectability of its accounts receivable and provides an allowance for potential credit losses based on the Company's historical experience. At December 31, 2018 and 2017, the Company did not have an allowance for potential credit losses as there were no estimated credit losses.

Concentrations of Risk

Credit Risk — Financial instruments that potentially subject the Company to concentration of credit risk consisted primarily of restricted cash, cash and cash equivalents and accounts receivable from trade customers. The Company maintains its cash deposits at three domestic and one international financial institutions. The Company is exposed to credit risk in the event of default by a financial institution to the extent that cash and cash equivalents are in excess of the amount insured by the Federal Deposit Insurance Corporation. The Company generally places its cash and cash equivalents with high-credit quality financial institutions. To date, the Company has not experienced any losses on its cash and cash equivalents.

Concentration of Accounts Receivable — At December 31, 2018, one customer accounted for 77%, of the Company's account receivable. Fluctuations in accounts receivable result from timing of the Company's execution of contracts and collection of related payments. At December 31, 2017, three customers accounted for 18%, 18% and 14% of the Company's accounts receivable.

Concentration of Revenues — For the year ended December 31, 2018, two customers accounted for 22% and 15% of the Company's revenues. For the year ended December 31, 2017, one customer accounted for 18% of the Company's revenue. For the year ended December 31, 2016, two customers each accounted for 12% of the Company's revenues.

Concentration of Suppliers — The Company relies on a limited number of suppliers and contract manufacturers. In particular, a single supplier is currently the sole manufacturer of the Company's proprietary sensors.

Business Acquisitions

The Company allocates the fair value of purchase consideration to the tangible assets acquired, liabilities assumed and intangible assets acquired based on their estimated fair values. The excess of the fair value of purchase consideration over the fair values of these identifiable assets and liabilities is recorded as goodwill. When determining the fair values of assets acquired and liabilities assumed, management makes significant estimates and assumptions, especially with respect to intangible assets. Acquisition-related expenses are recognized separately from the business combination and are recognized as general and administrative expense as incurred.

Goodwill

Following the acquisition of HunchLab (see Note 7, *Business Acquisitions*), the Company recorded goodwill for the first time in October 2018. Goodwill is tested for impairment at the reporting unit level (operating segment or one level below an operating segment) on an annual basis (October 1) and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value. These events or circumstances could include a significant change in the business climate, legal factors, operating performance indicators, competition, or sale or disposition of a significant portion of a reporting unit. Since inception through December 31, 2018, the Company did not have any goodwill impairment.

Intangible Assets

Intangible assets consisted of acquired patents and capitalized legal fees related to obtaining patents, as well as customer relationships as a result from the Company's acquisition of HunchLab in 2018 (see Note 7, *Business Acquisitions*). Patent assets are stated at costs, less accumulated amortization. Customer relationships are recorded at fair value as of the date of the acquisition. Intangible assets are amortized on a straight-line basis, over their expected useful lives, which range from three years for patents and seven years for customer relationships.

Property and Equipment, net

Property and equipment, net, is stated at cost, less accumulated depreciation and amortization. The Company depreciates property and equipment using the straight-line method over their estimated useful lives, ranging from three to five years. Leasehold improvements are amortized over the shorter of the asset's useful life or the remaining lease term. Costs incurred to develop software for internal use and for the Company's solutions are capitalized and amortized over such software's estimated useful life. Internally developed software costs capitalized during all periods presented have not been material. Property and equipment, net also includes software technology resulting from the Company's acquisition of HunchLab, which is recorded at fair value as of the date of the acquisition, amortized on the straight-line basis over five years.

Accounting for Impairment of Long-Lived Assets

The Company annually reviews long-lived assets for impairment or whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparing the carrying amount of the asset to the future undiscounted net cash flows which the asset is expected to generate. If such assets are determined to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds the future undiscounted net cash flows arising from the assets. Assets to be disposed of are reported at the lower of their carrying amounts or fair value less cost to sell. During the year ended December 31, 2018, the Company recognized impairment expense of $0.7 million for the impairment of property and equipment primarily related to the remaining book value of indoor sensor inventory and indoor sensor networks installed at certain security customers. During the year ended December 31, 2017, the Company recognized impairment expense of $0.8 million for the impairment of property and equipment primarily related to the remaining net book value for deployed equipment that was presumed destroyed by hurricanes in September 2017. The Company did not record any impairment of long-lived assets during the year ended December 31, 2016.

Royalty Expense

In 2009, the Company entered into a license agreement with a third party relating to a patented gunshot digital imaging system that facilitates integration with certain third-party systems. The terms of the license agreement require the Company to pay a one-time fee of $5,000 for each license sold to a customer allowing the customer to integrate their ShotSpotter service with a third-party application, such as a video management system, with a minimum annual amount due of $75,000. In 2018, 2017, and 2016, the Company incurred only the $75,000 minimum amount. The license agreement renews automatically on each subsequent year unless it is terminated in accordance with the agreement.

The royalty fee due for each license sold to a customer is capitalized as property and equipment and amortized over the estimated useful life. The difference in royalty fees capitalized in property and equipment and the minimum annual payment is classified as general and administrative expense in the consolidated statements of operations and was $35,000, $60,000 and $35,000 for the years ended December 31, 2018, 2017, and 2016, respectively.

Convertible Preferred Stock Warrants

The Company issued warrants exercisable for shares of Series B-1 convertible preferred stock, or for shares of common stock upon the automatic conversion of all outstanding series of preferred stock into common stock. These warrants were classified as a preferred stock warrant liability in the consolidated balance sheets, rather than stockholders' equity, as they met the criteria to be classified as a derivative liability. The convertible preferred stock warrants were subject to remeasurement to fair value at each balance sheet date and any change in fair value is recognized as a component of other expense, net, in the consolidated statements of operations. The Company estimates the fair value of the warrants using an option pricing method ("OPM") or probability weighed expected return method ("PWERM") that incorporates the use of OPM, to allocate the estimated value of the Company. The OPM treats classes of stock as call options on a company's enterprise value with exercise prices based on the liquidation preferences of convertible preferred stock. The OPM prices the call option using the Black-Scholes model. The PWERM relies on a forward-looking analysis to predict the possible future value of a company by weighing discrete future outcomes. Upon the closing of the IPO in 2017, the convertible preferred stock warrant liability was reclassified to additional paid-in capital. All preferred stock warrants were converted into common stock warrants.

Fair Value Measurements

The Company uses a three-level hierarchy for fair value measurements based on the nature of inputs used in the valuation of an asset or liability as of the measurement date. The three-level hierarchy prioritizes, within the measurement of fair value, the use of market-based information over entity-specific information. Fair value focuses on an exit price and is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The inputs or methodology used for valuing financial instruments are not necessarily an indication of the risks associated with investing in those financial instruments. The three-level hierarchy for fair value measurements is defined as follows:

Level I — Inputs to the valuation methodology are quoted prices (unadjusted) for identical assets or liabilities in active markets.

Level II — Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.

Level III — Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

An asset's or a liability's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

Stock-Based Compensation

The Company generally grants options to purchase shares of its common stock to its employees and directors for a fixed number of shares with an exercise price equal to the fair value of the underlying shares at the grant date. Fair value is determined by the Board. The Company accounts for these options under ASC Topic 718, Compensation—Stock Compensation. Accordingly, all stock option grants are accounted for using the fair value method, and stock-based compensation expense is recognized as the underlying options vest. The Company uses the Black-Scholes option pricing model to measure the fair value of its stock options.

Stock-based compensation for options granted to non-employees is measured on the date of performance at the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measured. Compensation for options granted to non-employees is periodically remeasured as the underlying options vest.

Prior to the IPO, given the absence of a public trading market for the Company's common stock, the Board considered numerous objective and subjective factors to determine the fair value of the Company's common stock each time stock option grants were approved. The factors include, but are not limited to: (i) the valuation of the Company's common stock by an unrelated third party; (ii) the Company's results of operations, financial position and capital resources; (iii) current economic indicators and outlook; (iv) competition for the Company's solutions; and (v) the Company's marketing methods.

The Company estimated the grant date fair value of its common stock options using the following assumptions:

Expected Term — The expected term represents the period that the stock-based compensation awards are expected to be outstanding. Since the Company did not have sufficient historical information to develop reasonable expectations about future exercise behavior, the Company used the simplified method to compute expected term, which reflects the weighted-average of time-to-vesting.

Risk-Free Interest Rate — The risk-free interest rate is based on the yield on U.S. Treasury yield curve in effect at the grant date.

Expected Volatility — Since the Company does not have a long trading history of its common stock, the expected volatility is derived from the average historical volatilities of publicly traded companies that are reasonably comparable to the Company's own operations.

Dividend Yield — Expected dividend yield is based on our dividend policy at the time the options were granted. We do not plan to pay any dividends in the foreseeable future. Consequently, we have historically used an expected dividend yield of zero.

After the IPO, the Company uses the market closing price of its common stock as traded on the Nasdaq Capital Market to determine fair value.

The Company generally grants unvested restricted stock unit awards to non-employee directors for a fixed number of shares and a fixed vesting date. The restricted stock unit awards are valued using the closing price on the date of grant.

Forfeitures are recognized as and when they occur.

Segment Information

The Company has one operating segment with one business activity, providing gunshot detection systems. The Company's chief operating decision maker is its Chief Executive Officer, who manages operations on a consolidated basis for purposes of allocating resources.

Income Taxes

The Company records income taxes in accordance with the liability method of accounting. Deferred taxes are recognized for the estimated taxes ultimately payable or recoverable based on enacted tax law. The Company establishes a valuation allowance to reduce the deferred tax assets when it is more likely than not that a deferred tax asset will not be realizable. Changes in tax rates are reflected in the tax provision as they occur.

In accounting for uncertainty in income taxes, the Company recognizes the financial statement benefit of a tax position only after determining that the relevant tax authority would more likely than not sustain the position following an audit. For tax positions meeting the more likely than not threshold, the amount recognized in the consolidated financial statements is the largest benefit that has a greater than 50 percent likelihood of being realized upon ultimate settlement with the relevant tax authority. The Company recognizes interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense.

Net Loss per Share Attributable to Common Stockholders

Basic net loss per share is calculated by dividing net loss by the weighted-average number of common shares outstanding during the period. Diluted net loss per share is computed by dividing net loss by the weighted-average number of common shares and common stock equivalents outstanding during the period. Common stock equivalents are only included when their effect is dilutive. Common stock equivalents and unvested restricted stock units are potentially dilutive securities and include convertible preferred stock, warrants and outstanding stock options. These potentially dilutive securities are excluded from the computation of diluted net loss per share if their inclusion would be anti-dilutive. For all periods presented, there is no difference in the number of shares used to compute basic and dilutive shares outstanding due to the Company's net loss position.

Accounting Pronouncements Recently Adopted

Effective January 1, 2018, the Company adopted Topic 606. This standard outlines a single comprehensive model for entities to use in accounting for revenues arising from contracts with customers that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services. Topic 606 was adopted on a modified retrospective basis and the new standard was applied only to new contracts entered into after January 1, 2018, and contracts that were not completed as of January 1, 2018. The cumulative effect of this adoption of Topic 606 as of January 1, 2018 resulted in a reduction to accumulated deficit of $2.9 million, a reduction of short-term and long-term deferred revenue of $1.2 million, an increase in accrued expenses and other current liabilities of $0.1 million, and the capitalization of commissions in assets of $1.8 million.

The impact from the adoption of Topic 606 was as follows:

	Year Ended December 31, 2018		
	As Reported	**Effect of Change Increase/ (Decrease)**	**Amounts Without Adoption of Topic 606**
Revenues	$ 34,753	$ 392	$ 34,361
Costs	$ 15,532	$ —	$ 15,532
Gross profit	$ 19,221	$ 392	$ 18,829
Sales and marketing expense	$ 8,377	$ (438)	$ 8,815
Operating loss	$ (2,568)	$ (830)	$ (3,398)
Net loss	$ (2,725)	$ (830)	$ (3,555)

	As of December 31, 2018		
	As Reported	**Effect of Change Increase/ (Decrease)**	**Amounts Without Adoption of Topic 606**
Assets			
Prepaid expenses and other current assets	$ 1,527	$ 629	$ 898
Other assets	$ 1,922	$ 1,560	$ 362
Total assets	$ 47,119	$ 2,189	$ 44,930
Liabilities			
Deferred revenue, short term	$ 23,102	$ 1,043	$ 22,059
Accrued expenses and other current liabilities	$ 4,427	$ 82	$ 4,345
Total current liabilities	$ 28,836	$ 1,125	$ 27,711
Deferred revenue, long term	$ 1,060	$ (913)	$ 1,973
Total liabilities	$ 29,972	$ 212	$ 29,760

In January 2016, the Financial Accounting Standards Board ("FASB") issued ASU 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, which provides targeted improvements to the recognition, measurement, presentation and disclosure of financial assets and financial liabilities. Specific accounting areas addressed include equity investments and financial liabilities reported under the fair value option and valuation allowance assessment resulting from unrealized losses on available-for-sale securities. This ASU also changes certain presentation and disclosure requirements for financial instruments. This ASU is to be applied by means of a cumulative effect adjustment to the balance sheet as of the beginning of the fiscal year of adoption. The Company adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any impact on the Company's consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230)*: *Classification of Certain Cash Receipts and Cash Payments*, addressing eight specific cash flow issues in an effort to reduce diversity in practice. The Company adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any material impact on the Company's consolidated statements of cash flows.

In October 2016, the FASB issued ASU 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*. The guidance requires entities to recognize the income tax impact of an inter-entity sale or transfer of an asset other than inventory when the sale or transfer occurs, rather than when the asset has been sold to an outside party. The guidance will require a modified retrospective application with a cumulative catch-up adjustment to opening retained earnings. The Company adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any impact on the Company's consolidated financial statements.

In November 2016, the FASB issued ASU 2016-18, *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. The Company adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any material impact on the Company's consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, *Scope of Modification Accounting*, which amends the scope of modification accounting for share-based payment arrangements and provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under ASC 718, *Compensation – Stock Compensation*. The Company adopted this ASU as of January 1, 2018. The adoption of this ASU did not have any impact on the Company's consolidated financial statements.

Recent Accounting Pronouncements Not Yet Effective

In February 2016, the FASB issued ASU 2016-02, *Leases* (Topic 842). This standard requires lessees to recognize right-of-use assets and corresponding liabilities for all leases with an initial term in excess of 12 months. ASU 2016-02 is to be adopted using a modified retrospective approach, including a number of practical expedients, that requires leases to be measured and recognized under the new guidance at the beginning of the earliest period presented. ASU 2016-02 is effective for the Company as of January 1, 2019. The Company is currently evaluating the effect this ASU will have on its consolidated financial statements and related disclosures. The Company expects the assets leased under its operating lease for its corporate headquarters office will be capitalized on the balance sheet upon adoption of this ASU. There have been further amendments, including practical expedients, with the issuance of ASU 2018-01 in January 2018, ASU 2018-11 in July 2018 and ASU 2018-20 in December 2018. The amended guidance requires the recognition of lease assets and lease liabilities on the balance sheet for those leases with terms in excess of 12 months and currently classified as operating leases. Disclosure of key information about leasing arrangements will also be required. The Company elected the optional transition method which allows entities to continue to apply historical accounting guidance in the comparative periods presented in the year of adoption.

At transition, lessees and lessors may elect to apply a package of practical expedients permitting entities not to reassess: (i) whether any expired or existing contracts are or contain leases; (ii) lease classification for any expired or existing leases and (iii) whether initial direct costs for any expired or existing leases qualify for capitalization under the amended guidance. These practical expedients must be elected as a package and consistently applied. The Company has elected to apply the package of practical expedients upon adoption.

The Company identified its operating lease for its corporate headquarters office impacted by the new standard and is currently in the process of updating its business processes and related policies, systems and controls to support recognition and disclosure under the new standard.

Upon adoption of the amended guidance, the Company expects to recognize right-of-use assets and related lease liabilities of approximately $0.8 million for its contracts which contain an operating lease. The Company currently does not expect the amended guidance to have any other material impacts on our consolidated financial statements.

In July 2017, the FASB issued ASU 2017-11 , *Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480), Derivatives and Hedging (Topic 815).* The amendments in Part I of ASU 2017-11 change the classification analysis of certain equity-linked financial instruments (or embedded features) with down round features. When determining whether certain financial instruments should be classified as liabilities or equity instruments, a down round feature no longer precludes equity classification when assessing whether the instrument is indexed to an entity's own stock. The amendments also clarify existing disclosure requirements for equity-classified instruments. The amendments in Part I of this ASU are effective for the Company as of January 1, 2019. The amendments in Part II of ASU 2017-11 replace the indefinite deferral of certain guidance in Topic 480 with a scope exception. The amendments in Part II of ASU 2017-11 do not require any transition guidance. The Company does not expect the adopting of this ASU to have any impact on its consolidated financial statements.

Note 4. Fair Value Measurements

Prior to the IPO, the Company's convertible preferred stock warrant liability was measured on a recurring basis and was classified within Level III of the fair value hierarchy because some of the inputs used in its measurement were neither directly or indirectly observable. The valuation methodology and underlying assumptions in the fair value determination are discussed in Note 3, *Basis of Presentation and Summary of Significant Accounting Policies*, and Note 14, *Convertible Preferred Stock Warrants and Common Stock Warrants*.

Immediately prior to the IPO, the convertible preferred stock warrant liability was remeasured to fair value, resulting in a loss of $3.7 million which was recorded in other expense, net. Upon the closing of the IPO, the entire balance of $5.7 million in convertible preferred stock warrant liability was reclassified to additional paid-in capital.

There were no transfers into or out of Level III during the year ended December 31, 2018. The changes in the fair value of the convertible preferred stock warrant liability and changes in the fair value of contingent consideration are summarized below (in thousands):

	Fair Value Measurements at Reporting Date Using Level III Inputs
Fair value at December 31, 2015	$ 1,351
Change in fair value recorded in other expense, net	524
Fair value at December 31, 2016	$ 1,875
Issuance of convertible preferred stock warrants	111
Change in fair value recorded in other expense, net	3,725
Reclassification of unexercised warrant into additional paid-in capital upon the IPO	(5,711)
Fair value at December 31, 2017	$ —
Contingent consideration	750
Fair value at December 31, 2018	$ 750

As of the acquisition date of HunchLab (see Note 7, *Business Acquisitions*) and at December 31, 2018, the Company estimated, based on management's estimates of (i) the probability of achieving the relevant revenue targets and (ii) the timing of achieving such targets, that the fair value of the contingent consideration approximates the maximum amount payable.

Note 5. Intangible Assets, net

Intangible assets, net, consisted of the following (in thousands):

	December 31, 2018		
	Gross	Accumulated Amortization	Net
Patents	$ 997	$ (909)	$ 88
Customer relationship	160	(6)	154
	$ 1,157	$ (915)	$ 242

	December 31, 2017		
	Gross	Accumulated Amortization	Net
Patents	$ 949	$ (854)	$ 95

Amortization expense during the years ended December 31, 2018, 2017 and 2016 was $61,000, $47,000 and $37,000, respectively.

Note 6. Details of Certain Consolidated Balance Sheet Accounts

Prepaid expenses and other current assets (in thousands):

	December 31,	
	2018	2017
Prepaid software and licenses	$ 388	$ 407
Prepaid insurance	275	211
Other prepaid expenses	169	137
Deferred commissions	629	—
Other	66	84
	$ 1,527	$ 839

Other assets (in thousands):

	December 31,	
	2018	2017
Deferred commissions	$ 1,560	$ —
Other	362	143
	$ 1,922	$ 143

Property and equipment, net (in thousands):

	December 31,	
	2018	2017
Deployed equipment	$ 24,767	$ 17,091
Computer equipment	1,272	1,123
Software	1,239	312
Furniture and fixtures	210	165
Leasehold improvements	234	202
Construction in progress	953	1,456
	$ 28,675	$ 20,349
Accumulated depreciation and amortization	(12,171)	(8,753)
	$ 16,504	$ 11,596

Accrued expenses and other current liabilities (in thousands):

	December 31,	
	2018	2017
Payroll liabilities	$ 1,859	$ 1,697
Accrued employee paid time off	558	469
Accrued commissions	43	199
Accrued ESPP	143	115
Royalties payable	130	125
Professional fees	396	328
Sales/ use tax payable	273	406
Contingent consideration	750	—
Other	275	476
	$ 4,427	$ 3,815

Note 7. Business Acquisitions

On October 3, 2018, the Company acquired certain technology, referred to as HunchLab, and related assets from Azavea Inc., a Philadelphia-based technology company. The purchase consideration totaled $2.5 million, consisting of $1.7 million in cash and a contingent earnout payable in cash for up to $750,000 based on HunchLab's revenues generated over the three-year period following the acquisition date. The Company determined the acquisition-date fair value of the contingent consideration liability based on the likelihood of meeting revenue forecasts.

The following table presents the purchase price allocation (in thousands):

Accounts receivable	$ 114
Prepaid expense	4
Deferred revenue, short term	(120)
Accounts payable	(26)
Software technology	950
Customer relationships	160
Goodwill	1,379
Total purchase consideration	$ 2,461

Goodwill primarily represents the value of cash flows from future customers. The Company expects to deduct goodwill and identifiable technology and intangible assets for tax purposes, a portion of which will commence upon settlement of contingent consideration and contingent liabilities.

The following table presents the components of the identifiable technology and intangible assets and the estimated useful lives (in thousands):

	Fair Value	Useful Life
Software technology	$ 950	5 years
Customer relationships	160	7 years
Total identifiable technology and intangible assets	$ 1,110	

The Company valued customer relationships and the software technology using the income approach. Significant assumptions include forecasts of revenues, cost of revenue, research and development expense, sales and marketing expense, general and administrative expense and estimated customer attrition rates. The Company discounted the cash flows at 25.5%, reflecting the risk profile of the assets.

Acquisition-related expenses totaled $0.2 million, which are included in general and administrative expense.

The Company has not presented separate results of operations since closing or combined pro forma financial information of the Company and HunchLab since the beginning of fiscal 2017, as results of operations for HunchLab are immaterial.

Note 8. Impairment of Property and Equipment

During the year ended December 31, 2018, the Company recognized impairment expense of $0.7 million for the impairment of property and equipment primarily related to the remaining book value of indoor sensor inventory and indoor sensor networks installed at certain security customers. Management concluded that the impairment charges were required because the Company have made the strategic decision to no longer include indoor coverage as part of its service offering.

During the year ended December 31, 2017, the Company recognized impairment expense of $0.8 million for the impairment of property and equipment primarily relating to the remaining net book value of deployed equipment in Puerto Rico and the U.S. Virgin Islands. Management concluded that the impairment charges were required because the equipment was presumed destroyed by the hurricanes in September 2017.

During the year ended December 31, 2017, the Company also recognized $0.9 million in revenues relating to the remaining deferred set-up fees to be recognized primarily on contracts with customers in Puerto Rico and the U.S. Virgin Islands. Management concluded that the revenues associated with these contracts was required to be accelerated because the contracts with customers in Puerto Rico and the U.S. Virgin Islands were expired at the time of the hurricanes and all subscription services were fully delivered.

Note 9. Financing Arrangements

Credit Agreement

On September 27, 2018, the Company entered into a Credit Agreement with Umpqua Bank (the “Umpqua Credit Agreement”), which allows the Company to borrow up to $10.0 million under a revolving loan facility (the “Revolving Facility”). The Company intends to use the Revolving Facility for general working capital purposes. Borrowings under the Umpqua Credit Agreement are secured by substantially all of the assets of the Company. The Umpqua Credit Agreement includes a letter of credit subfacility of up to $3.0 million. Any amounts outstanding under the letter of credit subfacility reduce the amount available for the Company to borrow under the Revolving Facility.

Borrowings under the Umpqua Credit Agreement bear interest, at the Company's option, at a rate equal to either (1) a base rate, which fluctuates daily and is the greater of (a) the prime rate in effect as of any date of determination and (b) the daily LIBOR rate as of such date of determination plus 1.0% per annum, or (2) a LIBOR rate, which can be for a period of 30, 60 or 90 days at the Company's option and is equal to the published rate in the Wall Street Journal for such 30-, 60- or 90-day period two business days prior to the commencement of such period, in each case plus 2.0% per annum. The Company will be required to repay all amounts outstanding under the Umpqua Credit Agreement on September 27, 2020 or earlier if the Umpqua Credit Agreement is terminated prior to such date. The Umpqua Credit Agreement also includes an uncommitted incremental facility provision that would allow the Company, subject to satisfaction of certain conditions, including approval by Umpqua Bank, to increase the Revolving Facility up to a total of $25.0 million.

Under the Umpqua Credit Agreement, the Company is subject to various negative covenants that limit, subject to certain exclusions, the Company's ability to incur indebtedness, make loans, invest in or secure the obligations of other parties, pay or declare dividends, make distributions with respect to the Company's securities, redeem outstanding shares of the Company's stock, create subsidiaries, materially change the nature of its business, enter into related party transactions, engage in mergers and business combinations, the acquisition or transfer of Company assets outside of the ordinary course of business, grant liens or enter into collateral relationships involving company assets or reincorporate, reorganize or dissolve the Company.

There were no borrowings outstanding as of December 31, 2018.

Notes Payable- 2015 Term Note

Borrowings under the 2015 Term Note bore interest at the greater of: (i) the average prime rate in effect during each month or (ii) the average three-month LIBOR rate during such month, plus 2.5% per annum, plus 7.5% with a minimum rate of 11%, with interest only payments through October 2017, followed by 36 equal monthly installments of principal and interest through October 2020, the maturity date. The weighted average interest rate during the year ended December 31, 2017 was and 11.54%.

For the year ended December 31, 2017 and 2016, the Company recognized interest expense of $1.1 million and $1.2 million, respectively, based on the outstanding balance during the period.

During the year ended December 31, 2017 and 2016, amortization of debt issuance costs was $132,000 and $131,000, respectively. Amortization of debt issuance costs is recorded in interest expense in the consolidated statements of operations.

Borrowings under the 2015 Term Note were secured by substantially all of the assets of the Company. Additionally, the terms of the 2015 Term Note included certain financial covenants and various negative covenants.

In March 2017, the Company amended the 2015 Term Note. In connection with the amendment of the 2015 Term Note, the Company issued a warrant to purchase 76,704 shares of Series B-1 preferred stock at an exercise price of $5.8667 per share; however, the terms of the warrant provided that upon the completion of a public offering in which the Company raises at least $25.0 million in net proceeds, the number of shares underlying the warrant would be reduced to 61,363 shares. Consistent with these terms, upon the closing of the IPO, the number of shares underlying this warrant was reduced to 61,363 shares, and the warrant became exercisable for common stock.

In September 2017, the Company voluntarily repaid all outstanding borrowings under the 2015 Term Note. The Company recorded to other expense, net, a loss of $0.2 million, consisting of prepayment fees and miscellaneous fees, and wrote-off $0.3 million of unamortized debt issuance costs from the early extinguishment of debt.

Note 10. Related Party Transactions

During the year ended December 31, 2018, the Company did not have any related party transactions. During the years ended December 31, 2017 and 2016, the Company recognized approximately $700,000, and $200,000 in revenue, respectively, from a reseller who was also an investor. As of December 31, 2017, and 2016, the amount of accounts receivable due from this reseller was immaterial.

Note 11. Income Taxes

The domestic and foreign components of net loss were as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Domestic	$ (3,083)	$ (10,125)	$ (6,744)
Foreign	345	305	(116)
Net loss	$ (2,738)	$ (9,820)	$ (6,860)

The provision for income tax consists of the following (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Current:			
Federal	$ —	$ —	$ —
State	—	—	—
Foreign	(13)	160	—
Total	(13)	160	—
Deferred:			
Federal	—	—	—
State	—	—	—
Foreign	—	—	—
Total	—	—	—
Total tax expense	$ (13)	$ 160	$ —

A reconciliation of income taxes at the statutory federal income tax rate to net income taxes included in the accompanying consolidated statements of operations is as follows (in thousands):

	December 31,		
	2018	2017	2016
Income tax at statutory rate	$ (575)	$ (3,339)	$ (2,331)
Change in valuation allowance	1,595	(8,354)	2,146
Change in tax rate	—	9,788	—
Change in deferreds	7	(39)	—
State tax	(309)	536	9
Mark-to-market on warrants	—	1,267	178
Stock-based compensation	(615)	84	24
Research and development credit	(220)	(62)	(88)
Foreign rate differential	(86)	56	40
Subpart F - transition tax	81	68	—
Lobbying	78	79	—
Other	31	76	22
Total	$ (13)	$ 160	$ —

Temporary differences that gave rise to significant portions of the Company's deferred tax assets and liabilities as of December 31, 2018 and 2017 were as follows (in thousands):

	Year Ended December 31,	
	2018	2017
Deferred tax assets:		
Net operating losses	$ 21,461	$ 20,139
Credits	1,969	1,654
Accruals and reserves	285	643
Deferred revenue and contract costs	458	464
Gross deferred tax assets	24,173	22,900
Valuation allowance	(23,710)	(22,789)
Net deferred tax assets	463	111
Deferred tax liabilities:		
Fixed assets and intangibles	(545)	(111)
Total deferred tax liabilities, net	$ (82)	$ —

Realization of deferred tax assets is dependent upon future taxable income, if any, the timing and amount of which are uncertain. Management has determined that the deferred tax assets are not realizable on a more likely than not basis. Accordingly, deferred tax assets have been fully offset by a valuation allowance. The valuation allowance increased by $0.9 million during the year ended December 31, 2018.

As of December 31, 2018, we had federal net operating loss carryforwards of approximately $85.4 million, of which $80.6 million will expire between 2026 through 2037, if not utilized, and $4.8 million which do not expire. As of December 31, 2018, we also had state NOLs of approximately $54.3 million, which will expire, if not utilized, in 2019 through 2038.

As of December 31, 2018, the Company had available for carryover research and experimental credits for federal and California income tax purposes of approximately $1.5 million and $1.5 million, respectively, which are available to reduce future income taxes. The federal research and experimental tax credits will begin to expire, if not utilized, in 2026. The California research and experimental tax credits carry forward indefinitely until utilized.

Section 382 of the Internal Revenue Code of 1986 (the "Code"), as amended, and similar California regulations impose substantial restrictions on the utilization of net operating losses and tax credits in the event of an "ownership change" of a corporation. Accordingly, the Company's ability to utilize net operating losses and credit carryforwards may be limited as the result of such an "ownership change" as defined in the Code.

Uncertain Tax Positions

The Company applied FASB ASC 740-10-50, *Accounting for Uncertainty in Income Tax,* which prescribes a recognition threshold and measurement attributes for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The Company classifies interest and penalties as a component of tax expense.

The Company had unrecognized tax benefits of approximately $0.7 million as of December 31, 2018, all of which was offset by a full valuation allowance. No interest or penalties have been accrued as of December 31, 2018.

A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows (in thousands):

Balance as of December 31, 2016	$	574
Increases for current year tax positions		46
Increases for prior year tax positions		—
Balance as of December 31, 2017		620
Increases for current year tax positions		114
Increases for prior year tax positions		—
Balance as of December 31, 2018	$	734

Unrecognized tax benefits may change during the next 12 months for items that arise in the ordinary course of business. The Company does not anticipate a material change to its unrecognized tax benefits over the next 12 months that would affect the Company's effective tax rate.

The Company files income tax returns in federal, various state and U.S. territory jurisdictions, and South Africa. The statute of limitations remains open for fiscal years 2005 through 2017 in the United States and the various state and the U.S. territory jurisdictions. Years beyond the normal statute of limitations remain open to audit by tax authorities due to tax attributes generated in earlier years which are being carried forward and may be audited in subsequent years when utilized.

On December 22, 2017, the 2017 Tax Cut and Jobs Act (the Act) was enacted into law and the new legislation contains several key tax provisions, including a one-time mandatory transition tax on accumulated foreign earnings and a reduction of the corporate income tax rate to 21% effective January 1, 2018, among others. We are required to recognize the effect of the tax law changes in the period of enactment, such as determining the estimated transition tax, re-measuring our U.S. deferred tax assets and liabilities at a 21% rate as well as reassessing the net realizability of our deferred tax assets and liabilities. The one-time transition tax does not generate a tax liability as the deemed distribution is offset by tax attributes. The provisional amount related to the re-measurement of our deferred tax balance is a reduction of approximately $9.8 million. Due to the corresponding valuation allowance fully offsetting deferred taxes, there is no income statement impact.

In December 2017, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (SAB 118) which allows companies to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. Since the Tax Act was passed late in the fourth quarter of 2017, and ongoing guidance and accounting interpretation was yet to be issued, our accounting of the deferred tax re-measurements were incomplete as of December 31, 2017. The 2017 Federal corporate income tax return was filed in fourth quarter of 2018. The final analysis and impact of the Act is reflected in the tax provision and related tax disclosures for the year ended December 31, 2018. There were no material differences to the originally estimated $9.8 million remeasurement of deferred tax assets.

In January 2018, the FASB released guidance on the accounting for tax on the global intangible low-taxed income ("GILTI") provisions of the Act. The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The guidance indicates that either accounting for deferred taxes related to GILTI inclusions or treating any taxes on GILTI inclusions as period cost are both acceptable methods subject to an accounting policy election. For the year ended December 31, 2018, the Company has elected to treat any potential GILTI inclusions as a period cost.

Note 12. Capital Stock

Convertible Preferred Stock

Immediately prior to the IPO, the Company had the following outstanding convertible preferred stock:

	Shares Authorized	Shares Issued and Outstanding	Aggregate Liquidation Preference (in thousands)
Series B-1	4,773,000	3,848,023	$ 22,575
Series A-2	1,177,000	1,176,423	20,000
			$ 42,575

Upon the closing of the IPO, all shares of convertible preferred stock then outstanding were automatically converted into an aggregate of 4,689,753 shares of common stock, resulting in the reclassification of the related redeemable convertible preferred stock into $23,000 of common stock and $42.1 million into additional paid-in capital.

As of December 31, 2018, there were no shares of convertible preferred stock outstanding.

Common Stock

The Company is authorized to issue 500,000,000 shares of common stock with a par value of $0.005 per share. At December 31, 2018 and 2017, there were 10,864,722 and 9,827,129 shares of common stock issued and outstanding, respectively. Holders of common stock have voting rights equal to one vote per share of common stock held and are entitled to receive any dividends as may be declared from time to time by the Board.

Prior to the IPO, common stock was subordinate to Series B-1 convertible preferred stock with respect to dividend rights and subordinate to Series B-1 and A-2 convertible preferred stock with respect to rights upon certain deemed liquidation events of the Company.

At December 31, 2018, shares of common stock reserved for future issuance were as follows:

	December 31, 2018
Options outstanding	820,186
Shares available for future grant	1,248,424
Unvested restricted stock units	110,764
Warrants to purchase common stock	163,713
Total	2,343,087

Preferred Stock

The Company is authorized to issue 20,000,000 shares of preferred stock, with a par value of $0.005, as provided in the Post-IPO Certificate. As of December 31, 2018, there were no shares of preferred stock issued and outstanding.

Note 13. Net Loss per Share

The following table summarizes the computation of basic and diluted net loss per share (in thousands, except share and per share data):

	Year Ended December 31,		
	2018	2017	2016
Numerator:			
Net loss	$ (2,725)	$ (9,980)	$ (6,860)
Denominator:			
Weighted-average shares outstanding, basic and diluted	10,569,007	6,197,775	1,602,402
Net loss per share	$ (0.26)	$ (1.61)	$ (4.28)

The following potentially dilutive shares outstanding at the end of the periods presented were excluded in the calculation of diluted net loss per share as the effect would have been anti-dilutive:

	Year Ended December 31,		
	2018	2017	2016
Options to purchase common stock	820,186	1,294,128	1,130,141
Unvested restricted stock units	110,764	47,312	—
Warrants to purchase Series B-1 convertible preferred or common stock	163,713	468,278	680,027
Series B-1 convertible preferred stock (as-converted)	—	—	3,848,023
Series A-2 convertible preferred stock (as-converted)	—	—	841,730
Total	1,094,663	1,809,718	6,499,921

Note 14. Convertible Preferred Stock Warrants and Common Stock Warrants

Immediately prior to the Company's IPO, all outstanding Series B-1 convertible preferred stock warrants were remeasured to their fair value, using the Black-Scholes model. Refer to Note 3, *Basis of Presentation and Summary of Significant Accounting Policies*, for a description of the valuation method. The final remeasurement of the convertible preferred stock warrant liability resulted in a $3.7 million loss which was recorded to other expense, net.

Upon the closing of the IPO, the entire balance of $5.7 million in convertible preferred stock warrant liability was reclassified to additional paid-in capital. All convertible preferred stock warrants were converted into common stock warrants. In addition, the Company issued to the lead underwriter in the IPO a warrant to purchase up to 84,000 shares of its common stock.

During the year ended December 31, 2018, certain warrants were exercised on a cashless basis and converted into 25,145 shares of common stock.

At December 31, 2016, the Company had the following Series B-1 convertible preferred stock warrants issued and outstanding (in thousands, except share and per share data):

Warrant Class	Shares	Fair Value	Issuance Date	Price per Share	Expiration Date
Series B-1	25,568	$ 303	June 2012	$ 5.8667	June 2022
Series B-1	167,428	$ 263	July 2012	$ 5.8667	July 2019
Series B-1	145,801	$ 46	August 2012	$ 5.8667	August 2019
Series B-1	10,517	$ 19	November 2012	$ 5.8667	November 2022
Series B-1	156,851	$ 929	February 2014	$ 0.1700	February 2021
Series B-1	173,862	$ 315	September 2015	$ 5.8667	September 2025
Total	680,027	$ 1,875			

At December 31, 2018 and 2017, the Company had the following common stock warrants issued and outstanding:

Warrant Class	Shares		Issuance Date	Price per Share	Expiration Date
	2018	2017			
Common stock warrant	3,766	165,925	July 2012	$ 5.8667	July 2019
Common stock warrant	25,231	61,502	August 2012	$ 5.8667	August 2019
Common stock warrant	50,716	156,851	February 2014	$ 0.1700	February 2021
Common stock warrant (1)	84,000	84,000	June 2017	$ 13.2000	June 2020
	163,713	468,278			

(1) This warrant was issued to the Company's lead underwriter in connection with the IPO.

In March 28, 2017, in connection with the amendment of the 2015 Term Note (see Note 9, *Financing Arrangements* for details regarding the amendment of the 2015 Term Note), the Company issued a warrant to purchase 76,704 shares of Series B-1 preferred stock at an exercise price of $5.8667 per share which was reduced to 61,363 shares upon the completion of the Company's IPO because greater than $25 million in proceeds were raised. The Company determined the fair value of the warrants on the date of issuance to be $111,000. The warrants were immediately exercisable.

In June 2017, in connection with its public offering, the Company issued a warrant to purchase 84,000 shares of common stock to its lead underwriter (the "June 2017 Warrant"). The Company determined the fair value of the June 2017 Warrant on the date of issuance to be $0.3 million. The June 2017 Warrant was immediately exercisable.

Note 15. Equity Incentive Plans

2017 Equity Incentive Plan

In May 2017, the Board and the Company's stockholders approved the 2017 Equity Incentive Plan (the "2017 Plan"), which became effective in connection with the IPO. The 2017 Plan provides for the issuance of stock options, restricted stock units and other awards to employees, directors and consultants of the Company. A total of 2,413,659 shares of the Company's common stock were initially reserved for issuance under the 2017 Plan, which is the sum of (1) 900,000 shares, (2) the number of shares reserved for issuance under the 2005 Plan at the time the 2017 Plan became effective and (3) shares subject to stock options or other stock awards under the 2005 Plan that would have otherwise been returned to the 2005 Plan (up to a maximum of 1,314,752 shares). The number of shares of common stock reserved for issuance under the 2017 Plan will automatically increase on January 1 of each year, beginning on January 1, 2018 by the lesser of (1) 5% of the number of shares of the Company's capital stock outstanding on December 31st of the preceding calendar year or (2) such number of shares as determined by the Board. In accordance with the evergreen provision, the number of shares of common stock reserved for issuance under our 2017 Plan was automatically increased on January 1, 2018 by 491,356 shares, which was equal to 5% of the total number of shares of capital stock outstanding on December 31, 2017. As a result of the adoption of the 2017 Plan, no further grants may be made under the 2005 Plan.

Incentive Stock Options may only be granted to Company employees and may only be granted with an exercise price not less than the fair value of the common stock, or not less than 110% of fair value when the grant is issued to a person who, at the time of grant, owns stock representing more than 10% of the voting power of all classes of stock. Non-statutory stock options may be granted to Company employees, directors and consultants, and may be granted at a price per share not less than fair value on the date of the grant. The Board determines the fair value of the Company's common stock.

Options granted under the 2005 Plan and 2017 Plan generally vest over four years and expire no later than 10 years from the grant date. The 2005 Plan and 2017 Plan grants the Board discretion to determine when the options granted will become exercisable. The 2005 Plan and 2017 Plan allows for the exercise of unvested options with repurchase rights over the restricted common stock issued. The Company records proceeds from early exercises as a liability and reclassifies the amount to equity as the repurchase right lapses. At December 31, 2018, 2017, and 2016, there were no unvested options resulting from early exercises.

Aggregate intrinsic value represents the difference between the Company's estimated or actual fair value of its common stock and the exercise price of outstanding "in-the-money" options. The aggregate intrinsic value of options exercised was $12.6 million, $0.8 million and $23,000 during the years ended December 31, 2018, 2017 and 2016, respectively. Based on the fair market value of the Company's common stock at December 31, 2018, 2017 and 2016, the total intrinsic value of all outstanding options was $19.3 million, $15.9 million and $2.5 million, respectively.

At December 31, 2018 and 2017, total unrecognized stock-based compensation cost related to unvested stock options was $3.3 million, and $0.8 million, respectively, which will be recognized ratably over a weighted-average period of 3.3 years and 3.2 years for each period.

Cash received from the exercise of stock options during the years ended December 31, 2018, 2017 and 2016 was $0.6 million, $55,000 and $25,000, respectively.

No income tax benefits from stock-based compensation arrangements have been recognized in the consolidated statements of operations.

The fair value of stock option grants is set forth below and was determined using the Black-Scholes option pricing model with the following assumptions:

	Year Ended December 31,		
	2018	**2017**	**2016**
Fair value of common stock	$23.72-$47.39	$3.06-$19.56	$0.85-$3.06
Expected term (in years)	6	5-6	2-10
Risk-free interest rate	2.60%-3.00%	1.85%-2.29%	0.75%-1.77%
Expected volatility	64%-67%	55%	55%
Expected dividend yield	—	—	—

In February 2005, the Company adopted the 2005 Stock Plan, as amended in January 2010 and November 2012 (the "2005 Plan"). Under the 2005 Plan provisions, the Company was authorized to grant incentive stock options, non-qualified stock options, stock appreciation rights, restricted stock units, and shares of restricted stock.

Following the effectiveness of the 2017 Plan in connection with the IPO, no further grants will be made under the 2005 Plan.

A summary of stock option activities under the 2005 Plan and 2017 Plan during 2016, 2017 and 2018 is as follows:

	Number of Options Outstanding	Weighted Average Exercise Price
Outstanding at December 31, 2015	938,250	$ 0.90
Granted	272,769	$ 1.27
Exercised	(33,395)	$ 0.75
Canceled	(47,483)	$ 4.14
Outstanding at December 31, 2016	1,130,141	$ 0.86
Granted	261,476	$ 5.52
Exercised	(74,984)	$ 0.74
Canceled	(22,505)	$ 1.52
Outstanding at December 31, 2017	1,294,128	$ 1.79
Granted	157,078	$ 33.70
Exercised	(609,985)	$ 0.90
Canceled	(21,035)	$ 6.78
Outstanding at December 31, 2018	820,186	$ 8.44

Stock options outstanding, exercisable and vested were as follows:

Outstanding at December 31, 2018	Weighted-average Remaining Contractual Life (years)	Exercisable and Vested as of December 31, 2018	Weighted-average Remaining Contractual Life (years)	Weighted-average Exercise Price
820,186	7.17	439,927	5.99	1.66

Outstanding at December 31, 2017	Weighted-average Remaining Contractual Life (years)	Exercisable and Vested as of December 31, 2017	Weighted-average Remaining Contractual Life (years)	Weighted-average Exercise Price
1,294,128	6.22	883,959	5	0.85

Outstanding at December 31, 2016	Weighted-average Remaining Contractual Life (years)	Exercisable and Vested as of December 31, 2016	Weighted-average Remaining Contractual Life (years)	Weighted-average Exercise Price
1,130,141	6.29	842,261	5.32	0.74

During the year ended December 31, 2018, the company granted non-employee directors restricted stock unit (“RSU”) awards totaling 17,881 shares of common stock, with vesting terms of approximately 12 months. The fair value of $28.45 per unit was calculated using the closing stock price on the date of grants.

During the year ended December 31, 2018, the Company granted executive management RSU awards totaling 92,883 shares of common stock, with vesting terms of 35% upon the first anniversary and 21.667% on each of the three subsequent anniversaries. The weighted average fair value of $17.87 per unit was calculated using the closing stock price on the grant dates.

During the year ended December 31, 2017, the company granted non-employee directors RSU awards totaling 47,312 shares of common stock, with vesting terms of approximately seven to ten months. The fair value of $11.50 to $16.96 per unit was calculated using the closing stock price on the date of grants.

At December 31, 2018 and 2017, total unrecognized stock-based compensation cost related to RSUs was $1.4 million, and $0.3 million, respectively, which will be recognized ratably over a weighted-average period of 2.7 years and 0.4 years for each period.

Our equity-based incentive plans include stock options, restricted stock units and other stock awards. The number of shares available for grant under these plans was 1,248,424 as of December 31, 2018.

2017 Employee Stock Purchase Plan

In May 2017, the Board and the Company's stockholders adopted the 2017 Employee Stock Purchase Plan ("2017 ESPP"), which became effective in connection with the Company's IPO. The 2017 ESPP allows eligible employees to purchase shares of the Company's common stock in an offering at a discount of the then-current trading price, up to the lesser of (1) 85% of the fair market value of the common stock on the first day of the IPO or (2) 85% of the fair market value of the common stock on the purchase date. The 2017 ESPP permits the maximum discounted purchase price permitted under U.S. tax rules, including a "lookback."

The 2017 ESPP initial offering period runs for approximately 24 months in length, and contains four 6-month purchase periods. An employee's purchase rights terminate immediately upon termination of employment or other withdrawal from the 2017 ESPP. No participant will have the right to purchase shares of common stock in an amount that has a fair market value of more than $25,000 determined as of the first day of the applicable purchase period, for each calendar year.

There are 200,000 shares of common stock reserved for issuance under the 2017 ESPP. In addition, the 2017 ESPP contains a provision which provides for an automatic annual share increase on January 1 of each year, in an amount equal to the lesser of (1) 2% of the total number of shares of common stock outstanding on December 31st of the preceding calendar year, (2) 150,000 shares or (3) such number of shares as determined by the Board. In accordance with the evergreen provision, the number of shares of common stock reserved for issuance under our 2017 ESPP was automatically increased on January 1, 2018 by 150,000 shares.

The Company accounts for employee stock purchases made under its 2017 ESPP using the estimate grant date fair value of accounting in accordance with ASC 718, *Stock Compensation*. The Company values ESPP shares using the Black-Scholes model.

There were 83,605 shares issued during 2018 and 232,262 shares available under the 2017 ESPP as of December 31, 2018.

Total stock-based compensation expense associated with the 2005 Plan, 2017 Plan and 2017 ESPP is recorded in the consolidated statements of operations and was allocated as follows (in thousands):

	Year Ended December 31,		
	2018	2017	2016
Costs	$ 316	$ 75	$ 11
Sales and marketing	770	133	7
Research and development	272	69	18
General and administrative	1,110	351	47
Total	$ 2,468	$ 628	$ 83

Stock-based compensation expense is recognized over the award's expected vesting schedule. Forfeitures are recognized as and when they occur.

Note 16. Benefit Plan

The Company sponsors a 401(k) plan to provide defined contribution retirement benefits for all eligible employees. Participants may contribute a portion of their compensation to the plan, subject to the limitations under the Internal Revenue Code. The Company is allowed to make 401(k) matching contributions as defined in the plan and as approved by the Board. The Company did not make any contributions to the plan during the years ended December 31, 2018, 2017 and 2016.

Note 17. Commitments and Contingencies

The Company leases its principal executive offices in Newark, California, under a non-cancelable operating lease which expires in 2021. The Company recognizes rent expense on a straight-line basis over the expected lease term. The difference between cash payments required and rent expense is recorded as deferred rent. Total rent expense was $0.6 million for the year ended December 31, 2018 and $0.4 million for each of the years ended December 31, 2017 and 2016. The company also has data center non-cancelable contracts, that exceed one year.

The following is a schedule of future minimum datacenter arrangements and lease payments under the non-cancelable commitments at December 31, 2018 (in thousands):

	Data Center Arrangements	Operating Lease
2019	$ 213	$ 352
2020	71	357
2021	—	304
Total	$ 284	$ 1,013

Contingencies

On November 6, 2017 three individuals, Ken Fisher, Kevin Baxter and Fred Holmes (the “Contractors”), filed a complaint with the Superior Court of California, County of Alameda, alleging breach of contract, a breach of the implied covenant of good faith and fair dealing and violation of Section 17200 et seq. of the California Business and Professions Code, purportedly predicated on an alleged breach of Section 10b-5 of the Securities Exchange Act of 1934. On October 4, 2018, the parties reached a binding settlement. The Contractors filed a Notice of Unconditional Settlement on October 9, 2018, which gives them 45 days from October 4, 2018 to file a request for dismissal. The Contractors filed a request for dismissal on October 24, 2018 and such dismissal was entered as requested on October 24, 2018.

On August 28, 2018, Silvon S. Simmons (the "Plaintiff") amended a complaint against the City of Rochester, New York and various city employees, filed in the United States District Court, Western District of New York, to add the Company and employees as a defendant. The amended complaint alleges conspiracy to violate plaintiff's civil rights, denial of the right to a fair trial, and malicious prosecution. The Plaintiff claims that ShotSpotter colluded with the City of Rochester to fabricate and create gunshot alert evidence to secure Plaintiff's conviction. On the basis of the allegations, the Plaintiff has petitioned for compensatory and punitive damages and other costs and expenses, including attorney's fees. The Company believes that the Plaintiff's claims are without merit and are disputing them vigorously.

The Company may become subject to legal proceedings, as well as demands and claims that arise in the normal course of business. Such claims, even if not meritorious, could result in the expenditure of significant financial and management resources. The Company makes a provision for a liability relating to legal matters when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. These provisions are reviewed and adjusted to include the impacts of negotiations, estimated settlements, legal rulings, advice of legal counsel, and other information and events pertaining to a particular matter.

An unfavorable outcome on any litigation matters could require payment of substantial damages, or, in connection with any intellectual property infringement claims, could require the Company to pay ongoing royalty payments or could prevent the Company from selling certain of our products. As a result, a settlement of, or an unfavorable outcome on, any of the matters referenced above or other litigation matters could have a material adverse effect on the Company's business, operating results, financial condition and cash flows.

Note 18. Subsequent Events

For the audited consolidated financial statements, management evaluated subsequent events through March 4, 2019, which is the date these consolidated financial statements were issued.

Item 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

Item 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management has evaluated, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures (as defined in Rules 13-a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2018, our disclosure controls and procedures were effective to provide reasonable assurance that the information we are required to file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

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

Inherent Limitations on Effectiveness of Controls

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) and Rule 15d-15(f) of the Exchange Act. Internal control over financial reporting consists of policies and procedures that: (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets; (2) are designed and operated to provide reasonable assurance regarding the reliability of our financial reporting and our process for the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements. Our management evaluated the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control - Integrated Framework (2013). Based on the results of our evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2018.

Item 9B. OTHER INFORMATION

None.

PART III.

We will file a definitive Proxy Statement for our Annual Meeting (our "Proxy Statement") with the SEC, pursuant to Regulation 14A, not later than 120 days after the end of our fiscal year. Accordingly, certain information required by Part III has been omitted under General Instruction G(3) to Form 10-K. Only those sections of the Proxy Statement that specifically address the items set forth herein are incorporated by reference.

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this Item 10 is incorporated herein by reference to the sections of our Proxy Statement under the captions "Information Regarding the Board of Directors and Corporate Governance", "Executive Officers".

Item 11. EXECUTIVE COMPENSATION

The information required by this Item 11 is incorporated herein by reference to the sections of our Proxy Statement under the caption "Executive and Director Compensation".

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item 12 is incorporated herein by reference to the sections of our Proxy Statement under the caption "Security Ownership of Certain Owners and Management".

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this Item 13 is incorporated herein by reference to the sections of our Proxy Statement under the captions "Transactions with Related Persons and Indemnification", "Information Regarding The Board Of Directors and Corporate Governance".

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item 14 is incorporated herein by reference to the section of our Proxy Statement under the caption "Principal Accountant Fees and Services".

PART IV.

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a)(1) Consolidated Financial Statements

We have filed the consolidated financial statements listed in the Index to Consolidated Financial Statements, Schedules, and Exhibits included in Part II, Item 8, “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K.

(a)(2) Financial Statements Schedules

All financial statements schedules have been omitted because they are not applicable, not material, or the required information is shown in the Index to Consolidated Financial Statements included in Part II, Item 8, “Financial Statements and Supplementary Data” of this Annual Report on Form 10-K.

(a)(3) Exhibits

See the Exhibit Index below in this Annual Report on Form 10-K. The exhibits listed in the Exhibit Index below are filed or incorporated by reference as part of this Annual Report on Form 10-K.

Item 16. FORM 10-K SUMMARY

None.

Exhibit Index

Exhibit Number	Exhibit Description	Incorporated by Reference				Filed Herewith
		Form	File No.	Exhibit	Filing Date	
3.1	Amended and Restated Certificate of Incorporation	8-K	001-38107	3.1	June 13, 2017	
3.2	Amended and Restated Bylaws	8-K	001-38107	3.2	June 13, 2017	
4.1	Form of Common Stock Certificate	S-1/A	333-217603	4.1	May 19, 2017	
4.2	Investors' Rights Agreement, by and among ShotSpotter, Inc. and the investors listed on Exhibit A thereto, dated July 12, 2012	S-1	333-217603	4.2	May 2, 2017	
4.3	Form of Warrant to purchase shares of Series B-1 Preferred Stock issued to Motorola Solutions, Inc. in connection with the sale of Series B-1 Preferred Stock in August 2012	S-1	333-217603	4.4	May 2, 2017	
4.4	Form of Warrant to purchase shares of Series B-1 Preferred Stock issued to certain stockholders in connection with the sale of Series B-1 Preferred Stock in February 2014	S-1	333-217603	4.6	May 2, 2017	
4.5	Form of Warrant to Purchase Shares of Common Stock issued to Roth Capital Partners, LLC in June 2017	10-Q	001-38107	10.1	August 14, 2017	
10.1(#)	ShotSpotter, Inc. Nonemployee Director Compensation Policy	10-Q	001-38107	10.1	November 14, 2017	

10.2(#)	ShotSpotter, Inc. Amended and Restated 2005 Stock Plan	S-1	333-217603	10.1	May 2, 2017	
10.3(#)	Forms of Option Agreement and Option Grant Notice under the Amended and Restated 2005 Stock Plan	S-1	333-217603	10.2	May 2, 2017	
10.4(#)	ShotSpotter, Inc. 2017 Equity Incentive Plan	S-1/A	333-217603	10.3	May 19, 2017	
10.5(#)	Forms of Option Agreement and Option Grant Notice under the 2017 Equity Incentive Plan	S-1/A	333-217603	10.4	May 19, 2017	
10.6(#)	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Restricted Terms and Conditions under the 2017 Equity Incentive Plan	S-1/A	333-217603	10.5	May 19, 2017	
10.7(#)	ShotSpotter, Inc. 2017 Employee Stock Purchase Plan	S-1/A	333-217603	10.6	May 19, 2017	
10.8(#)	Form of Restricted Stock Unit Grant Notice for Directors	10-Q	001-38107	10.6	August 14, 2017	
10.9(#)	Form of Indemnification Agreement by and between ShotSpotter, Inc.	S-1	333-217603	10.7	May 2, 2017	
10.10(#)	Offer Letter between ShotSpotter, Inc. and Ralph A. Clark, dated March 13, 2017	S-1	333-217603	10.8	May 2, 2017	
10.11(#)	Offer Letter between ShotSpotter, Inc. and Alan R. Stewart, dated March 13, 2017	S-1	333-217603	10.9	May 2, 2017	
10.12(#)	Offer Letter between ShotSpotter, Inc. and Joseph O. Hawkins, dated March 13, 2017	S-1	333-217603	10.10	May 2, 2017	
10.13(#)	Offer Letter between ShotSpotter, Inc. and Paul S. Ames, dated March 13, 2017	S-1	333-217603	10.11	May 2, 2017	
10.14(#)	Offer Letter between ShotSpotter, Inc. and Gary T. Bunyard, dated March 13, 2017	S-1	333-217603	10.12	May 2, 2017	
10.15(#)	Offer Letter between ShotSpotter, Inc. and Sam Klepper, dated March 2, 2018	10-Q	333-217603	10.1	May 10, 2018	
10.16(#)	Offer Letter between ShotSpotter, Inc. and Nasim Golzadeh, dated February 20, 2019					X
10.17	Lease Agreement between BMR-Pacific Research Center LP and ShotSpotter, Inc., dated August 14, 2012	S-1	333-217603	10.14	May 2, 2017	
10.18	First Amendment to Lease Agreement between BMR-Pacific Research Center LP and ShotSpotter, Inc., dated September 3, 2014	S-1	333-217603	10.15	May 2, 2017	
10.19	Second Amendment to Lease Agreement between BMR-Pacific Research Center LP and ShotSpotter, Inc., dated December 15, 2016	S-1	333-217603	10.16	May 2, 2017	

10.20	Credit Agreement between Umpqua Bank and ShotSpotter, Inc., dated September 27, 2018	10-Q	333-217603	10.1	November 14, 2018	
23.1	Consent of Baker Tilly Virchow Krause, LLP, Independent Registered Public Accounting Firm for ShotSpotter, Inc.					X
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.					X
32.1*	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					X
32.2*	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.					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

# Indicates management contract or compensatory plan.

* Furnished herewith and not deemed to be “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and shall not be deemed to be incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

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, thereto duly authorized.

SHOTSPOTTER, INC.

Date: March 4, 2019

By: /s/ Ralph A. Clark
Ralph A. Clark
President and Chief Executive Officer

Date: March 4, 2019

By: /s/ Alan R. Stewart
Alan R. Stewart
Chief Financial Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Ralph A. Clark and Alan R. Stewart, jointly and severally, his attorneys-in-fact, each with the power of substitution, for him in any and all capacities, to sign any amendments to this report, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Ralph A. Clark Ralph A. Clark	President, Chief Executive Officer and a Director (Principal Executive Officer)	March 4, 2019
/s/ Alan R. Stewart Alan R. Stewart	Chief Financial Officer (Principal Financial and Accounting Officer)	March 4, 2019
/s/ Pascal Levensohn Pascal Levensohn	Director	March 4, 2019
/s/ Thomas T. Groos Thomas T. Groos	Director	March 4, 2019
/s/ Randall Hawks, Jr. Randall Hawks, Jr.	Director	March 4, 2019
/s/ Marc Morial Marc Morial	Director	March 4, 2019
/s/ William J. Bratton William J. Bratton	Director	March 4, 2019

Exhibit 10.16

February 20, 2019

Nasim Golzadeh

Dear Nasim:

On behalf of ShotSpotter, Inc. (the "Company"), I am pleased to offer you the position of Senior Vice President, Customer Support & Professional Services, reporting to Ralph Clark, President & Chief Executive Officer, with duties and responsibilities customarily associated with such position, including, but not limited to, those duties and responsibilities that the Company's Board of Directors (the "**Board**") may determine from time to time. You will devote your full business efforts and time to the Company. Further, you agree not to actively engage in any other employment, occupation, or consulting activity related to the business of the Company for any direct or indirect remuneration during your employment with the Company without the prior written approval of the Board. Based on the duties you will perform for the Company, your position will be classified as exempt. Your principal place of business for the performance of your duties and responsibilities will be the Company's corporate headquarters in Newark, California, provided, however, that the Company may from time to time require you to travel temporarily to other locations (domestic and international) in connection with the Company's business. This Letter Agreement (the "**Letter Agreement**") sets out the terms of your employment with the Company, and it shall take effect as of your start date.

You will receive an annual salary of $260,000.00 which calculates to $10,833.33 per semi-monthly pay period, less any and all applicable taxes and other withholdings, to be paid in accordance with the Company's normal payroll practices. Your base salary will be subject to annual review by the Board or its Compensation Committee, and any adjustments will be made based upon the Company's normal performance review practices.

You will be eligible to earn an annual performance bonus with a target amount of $50,000.00 (the " **Target Amount**") for each full fiscal year that you are employed by the Company, which will be pro-rated based on a partial year of service in 2019. The Target Amount is subject to review and adjustment by the Board or its Compensation Committee in its sole discretion. Any annual performance bonus shall be awarded based on objective or subjective performance criteria determined by the Board or its Compensation Committee in its sole discretion after consultation with you. The Board or its Compensation Committee will determine in its sole discretion the extent to which you and the Company have achieved the performance criteria upon which the bonus is based and the amount of the bonus, which could be below the Target Amount (and may be $0). Any annual performance bonus awarded for any given fiscal year will be paid to you on the date on which annual performance bonuses are paid to all other senior executives of the Company, but in no event later than the date that is two and one-half months following the end

of the fiscal year for which the bonus is earned and no longer subject to a substantial risk of forfeiture. You must be employed on the date any bonus is paid in order to earn the bonus. Thus, if your employment ends for any reason prior to the payment date, you will not be eligible for, and will not receive, any bonus.

You will be eligible to earn commissions under an annual incentive plan to be approved by the Chief Executive Officer, with a target amount of $25,000.00 (the “Target Amount”) based on revenue driven by Professional Services. The Target Amount is subject to review and adjustment by the Chief Executive Officer in his sole discretion. Any commission shall be awarded based on objective or subjective performance criteria determined by the Chief Executive Officer in his sole discretion after consultation with you.

Furthermore, you shall also be eligible for a one-time signing bonus of $15,000.00, less any and all applicable taxes and other withholdings. This bonus will be paid in one lump sum on the first pay date after you start employment with the Company. In the event that you resign from the Company for any reason within 12 months after your date of hire, you will be responsible for reimbursing the Company for the entire $15,000.00 signing bonus. By your signature on this Letter Agreement, you authorize the Company to withhold $15,000.00 from any severance and other final pay you receive upon termination of employment, should you resign from your position within 12 months after your date of hire.

You will be entitled to participate in all employee benefit plans and arrangements and fringe benefits and programs that may be provided to senior executives of the Company from time to time while you are employed by the Company, subject to plan terms and generally applicable Company policies. The Company may provide benefits, payroll, and other human resource management services through a professional employer organization, in which case such professional employer organization will be considered your employer of record for these benefits and payroll purposes. (The term for this relationship is “co-employment.”)

Subject to approval by the Board, the Company will grant you (a) an option to purchase 50,000 shares of the Company’s common stock, at an exercise price equal to the fair market value of one share of Common Stock on the grant date and (b) restricted stock units for that number of shares equal to $280,000.00 divided by the fair market value of one share of Common Stock on the grant date. The option and restricted stock units will be governed by the terms of the Company’s 2017 Equity Incentive Plan (the “Plan”) and the associated option and restricted stock unit grant documentation.

The option will vest as to 25% of the shares subject to the option on the first anniversary of the grant date and as to 1/36 of the remaining shares each month thereafter, subject to your continuing employment with the Company. The option will be subject to the terms and conditions of the Company’s 2017 Equity Incentive Plan and standard form of stock option agreement, which you will be required to sign as a condition of receiving the option. The restricted stock unit will vest as to 25% of the shares on the first anniversary of your first date of employment and as to 1/3 of the remaining shares each anniversary thereafter, subject to your continuing employment with the Company. Notwithstanding the foregoing, in the event that you are terminated by the Company without Cause (as defined below), or due to your death or disability, and such termination occurs

prior to a Change in Control (as defined in the Plan) or more than 12 months following a Change in Control , then if you sign and do not revoke a standard release of claims in a form acceptable to the Company or its successor entity (a "**Release**"), and such Release becomes effective in accordance with its terms within 60 days following the effective date of termination (such date that the Release becomes effective is referred to as the " **Release Effective Date**"), then you shall receive the following:

1. Effective as of your termination date, additional monthly vesting of the unvested shares subject to the option and restricted stock units that would have vested pursuant to the vesting schedule set forth above during the six months following your termination date if you had remained employed through such period; and

2. Payment to you of your monthly base salary for a period of 6 months following your termination date, to be paid periodically in accordance with the Company's normal payroll policies, commencing on the Company's first regularly scheduled payroll date occurring after the Release Effective Date.

In addition, notwithstanding the foregoing, in the event that, within 12 months following a Change in Control, your employment is terminated by the Company without Cause (as defined below), or due to your death or disability, or you resign your position with the Company for Good Reason (as defined below), then if you sign and do not revoke a Release, and such Release becomes effective in accordance with its terms within 60 days following the effective date of termination, then you shall receive the following:

1. Effective as of your termination date, 100% of the unvested shares subject to the option and restricted stock units will immediately vest; and

2. Payment to you of your monthly base salary for a period of 6 months following your termination date, to be paid periodically in accordance with the Company's normal payroll policies, commencing on the Company's first regularly scheduled payroll date occurring after the Release Effective Date.

You should be aware that your employment with the Company constitutes " **at-will**" employment. This means that your employment relationship with the Company may be terminated at any time with or without notice, with or without good cause or for any or no cause, at either party's option. You understand and agree that neither your job performance nor promotions, commendations, bonuses or the like from the Company give rise to or in any way serve as the basis for modification, amendment, or extension, by implication or otherwise, of your employment with the Company.

You will be entitled to paid vacation in accordance with the Company's vacation policy as applicable to the Company's executive officers, with the timing and duration of specific vacations mutually and reasonably agreed to by you and the Company.

For these purposes, "**Cause**" means: (1) your failure to perform the duties of your position (as they may exist from time to time) to the reasonable satisfaction of the Board where such failure

causes or is reasonably likely to cause a material adverse consequence on the business, properties, assets, results of operations, or condition (financial or otherwise) of the Company, after receipt of a written warning and your continued failure to cure such default to the reasonable satisfaction of the Board within 10 days following receipt of such written warning; (2) any act of dishonesty, fraud or misrepresentation taken by you in connection with your responsibilities as an employee that is intended to result in your personal enrichment; (3) your conviction or plea of no contest to felony or a crime involving moral turpitude; (4) willful misconduct by you that is injurious to the Company's reputation or business; or (5) your material breach of any covenant or condition of this Letter Agreement, the NDA Agreement (as defined below) or any other agreement between you and the Company . For purposes of this definition, an act or failure to act will be deemed "willful" if undertaken not in good faith or without reasonable belief that such action or failure to act was in the best interests of the Company.

For these purposes, "**Good Reason**" means your voluntary resignation of your employment following any one or more of the following events that occur without your consent: (1) a material reduction of your duties, position or responsibilities, or your removal from such position and responsibilities, unless you are provided with a comparable position (i.e., a position of equal or greater organizational level, duties, authority, compensation and status); provided, however, that a reduction in duties, position or responsibilities solely by virtue of the Company being acquired and made part of a larger entity (as, for example, when the Chief Executive Officer of the Company remains as such following a Change in Control but is not made the Chief Executive Officer of the acquiring corporation) shall not constitute "**Good Reason;**" (2) your principal work location is moved more than 50 miles from its current location; (3) the Company or its successor materially reduces your aggregate base salary (other than a similar reduction applicable to executives generally); or (4) the Company's material breach of any covenant of this Letter Agreement; provided, however, that, any such resignation by you shall only be deemed for Good Reason pursuant to this definition if: (1) you give the Company written notice of your intent to terminate for Good Reason within 30 days following the first occurrence of the condition(s) that you believe constitute(s) Good Reason, which notice shall describe such condition(s); (2) the Company fails to remedy such condition(s) within 30 days following receipt of the written notice (the "**Cure Period**"); and (3) you voluntarily terminate your employment within 30 days following the end of the Cure Period.

The Company will be entitled to withhold from any payment due to you hereunder any amounts required to be withheld by applicable tax laws or regulations.

As a condition of your continued employment, you are also required to sign and continue to comply with the Company's standard form of employee nondisclosure and assignment agreement ("**NDA Agreement**"), which is hereby incorporated by reference.

To ensure the rapid and economical resolution of disputes that may arise in connection with your employment with the Company, you and the Company agree that any and all disputes, claims, or causes of action, in law or equity, including but not limited to statutory claims, arising from or relating to the enforcement, breach, performance, or interpretation of this Agreement, your employment with the Company, or the termination of your employment, shall be resolved, to the fullest extent permitted by law, by final, binding and confidential arbitration in San Francisco, California conducted by JAMS or its successor, under JAMS' rules and procedures for employment disputes (which can be downloaded at http://www.jamsadr.com/rules-employment-arbitration/) . **You acknowledge that by agreeing to this arbitration procedure, both you and the Company waive the right to resolve any such dispute through a trial by jury or judge or administrative proceeding.** All claims, disputes or causes of action, by either you or the Company, must be brought in an individual capacity, and shall not be brought as a plaintiff (or claimant) or class member in any purported class or representative proceeding, nor brought in a private attorney general capacity or proceeding, nor joined or consolidated with any claims of any other person or entity. You will have the right to be represented by legal counsel at any arbitration proceeding. The arbitrator shall: (a) have the authority to compel adequate discovery for the resolution of the dispute and to award such relief as would otherwise be permitted by law; and (b) issue a written statement signed by the arbitrator regarding the disposition of each claim and the relief, if any, awarded as to each claim, the reasons for the award, and the arbitrator's essential findings and conclusions on which the award is based. The arbitrator shall be authorized to award all relief that you or the Company would be entitled to seek in a court of law. The Company shall pay all JAMS arbitration fees in excess of the administrative fees that you would be required to pay if the dispute were decided in a court of law. Nothing in this Letter Agreement is intended to prevent either you or the Company from obtaining injunctive relief in court to prevent irreparable harm pending the conclusion of any such arbitration.

It is intended that all of the cash severance payments payable under this Letter Agreement upon termination of your employment ("**Severance Benefits**") satisfy, to the greatest extent possible, the exemptions from the application of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**") and the regulations and other guidance thereunder and any state law of similar effect (collectively, "**Section 409A**") provided under Treasury Regulations Sections 1.409A-1(b)(4) and 1.409A-1(b)(9), and this Letter Agreement will be construed in a manner that complies with such exemptions. If not so exempt, this Letter Agreement (and any definitions hereunder) will be construed in a manner that complies with Section 409A, and incorporates by reference all required definitions and payment terms. No severance payments will be made under this Letter Agreement unless your termination of employment constitutes a "separation from service" (as defined under Treasury Regulation Section 1.409A-1(h) without regard to any alternative definition) (a "**Separation from Service**"). For purposes of Section 409A (including, without limitation, for purposes of Treasury Regulations Section 1.409A-2(b)(2)(iii)), your right to receive any installment payments under this Letter Agreement (whether severance payments or otherwise) shall be treated as a right to receive a series of separate payments and, accordingly, each installment payment hereunder shall at all times be considered a separate and distinct payment. If the Company determines that the severance payments provided under this Letter Agreement constitute "deferred compensation" under Section 409A and if you are a "specified employee" of the Company, as such term is defined in Section 409A(a)(2)(B)(i) of the Code, at

the time of your Separation from Service, then, solely to the extent necessary to avoid the incurrence of the adverse personal tax consequences under Section 409A, the timing of the Severance Benefits will be delayed as follows: on the earlier to occur of (a) the date that is six months and one day after your Separation from Service, and (b) the date of your death (such earlier date, the "**Delayed Initial Payment Date**"), the Company will (i) pay to you a lump sum amount equal to the sum of the Severance Benefits that you would otherwise have received through the Delayed Initial Payment Date if the commencement of the payment of the Severance Benefits had not been delayed pursuant to this paragraph, and (ii) commence paying the balance of the Severance Benefits in accordance with the applicable payment schedule set forth in this Letter Agreement. No interest shall be due on any amounts deferred pursuant to this paragraph. To the extent that any Severance Benefits are deferred compensation und er Section 409A, and are not otherwise exempt from the application of Section 409A, then, if the period during which you may consider and sign the Release spans two calendar years, the payment of any such Severance Benefit will not be made or begin until the later calendar year.

If any payment or benefit you will or may receive from the Company or otherwise (a " **280G Payment**") would (i) constitute a "parachute payment" within the meaning of Section 280G of the Code, and (ii) but for this sentence, be subject to the excise tax imposed by Section 4999 of the Code (the "**Excise Tax**"), then any such 280G Payment pursuant to this Letter Agreement or otherwise (a "**Payment**") shall be equal to the Reduced Amount. The "**Reduced Amount**" shall be either (x) the largest portion of the Payment that would result in no portion of the Payment (after reduction) being subject to the Excise Tax or (y) the largest portion, up to and including the total, of the Payment, whichever amount (i.e., the amount determined by clause (x) or by clause (y)), after taking into account all applicable federal, state and local employment taxes, income taxes, and the Excise Tax (all computed at the highest applicable marginal rate), results in your receipt, on an after-tax basis, of the greater economic benefit notwithstanding that all or some portion of the Payment may be subject to the Excise Tax. If a reduction in a Payment is required pursuant to the preceding sentence and the Reduced Amount is determined pursuant to clause (x) of the preceding sentence, the reduction shall occur in the manner (the "**Reduction Method**") that results in the greatest economic benefit for you. If more than one method of reduction will result in the Nasime economic benefit, the items so reduced will be reduced pro rata (the "**Pro Rata Reduction Method**"). Notwithstanding the foregoing, if the Reduction Method or the Pro Rata Reduction Method would result in any portion of the Payment being subject to taxes pursuant to Section 409A that would not otherwise be subject to taxes pursuant to Section 409A, then the Reduction Method and/or the Pro Rata Reduction Method, as the case may be, shall be modified so as to avoid the imposition of taxes pursuant to Section 409A as follows: (A) as a first priority, the modification shall preserve to the greatest extent possible, the greatest economic benefit for you as determined on an after-tax basis; (B) as a second priority, Payments that are contingent on future events (e.g., being terminated without cause), shall be reduced (or eliminated) before Payments that are not contingent on future events; and (C) as a third priority, Payments that are "deferred compensation" within the meaning of Section 409A shall be reduced (or eliminated) before Payments that are not deferred compensation within the meaning of Section 409A.

Unless you and the Company agree on an alternative accounting firm, the accounting firm engaged by the Company for general tax compliance purposes as of the day prior to the effective date of the change of control transaction triggering the Payment shall perform the foregoing calculations. If the accounting firm so engaged by the Company is serving as accountant or auditor for the individual, entity or group effecting the change in control transaction, the Company shall appoint a nationally recognized accounting firm to make the determinations required hereunder. The Company shall bear all expenses with respect to the determinations by such accounting firm required to be made hereunder. The Company shall use commercially reasonable efforts to cause the accounting firm engaged to make the determinations hereunder to provide its calculations, together with detailed supporting documentation, to you and the Company within 15 calendar days after the date on which your right to a 280G Payment becomes reasonably likely to occur (if requested at that time by you or the Company) or such other time as requested by you or the Company.

If you receive a Payment for which the Reduced Amount was determined pursuant to clause (x) of the paragraph above and the Internal Revenue Service determines thereafter that some portion of the Payment is subject to the Excise Tax, you shall promptly return to the Company a sufficient amount of the Payment so that no portion of the remaining Payment is subject to the Excise Tax. For the avoidance of doubt, if the Reduced Amount was determined pursuant to clause (y) in the paragraph above, you shall have no obligation to return any portion of the Payment pursuant to the preceding sentence.

In order to facilitate your work, and to ensure you are maximally efficient, the Company will provide you with a computer on which to work. We will reimburse your reasonable and documented travel and business expenses, including but not limited to your work-related telephone, and other similar charges or fees. Normal work hours at ShotSpotter are 8:00am to 5:00pm local time, Monday through Friday, although you may be asked to work other hours at other times. As a general rule, the Company makes every effort to accommodate flexibility in work hours, provided you and your direct manager reach agreement, at their sole discretion, on your schedule.

This Letter Agreement, together with the 2017 Plan, the grant documentation evidencing your options and restricted stock units and the NDA Agreement, represents the entire agreement and understanding between you and the Company concerning your employment relationship with the Company, and supersedes in its entirety any and all prior agreements and understandings concerning your employment relationship with the Company, whether written or oral.

The terms of this Letter Agreement may only be amended, canceled or discharged in writing signed by you and the Company. This Letter Agreement will be governed by the laws of the State of California.

In the event that any provision hereof becomes or is declared by a court of competent jurisdiction to be illegal, unenforceable, or void, this Letter Agreement will continue in full force and effect without such provision.

This offer of employment is made contingent upon your accepting the terms of this Letter Agreement, receipt of the accompanying non-disclosure agreement without modification (unless such modification is accepted, in writing, by ShotSpotter in advance of the Expiration Date as hereinafter defined). And as a condition of your employment, you will be required to provide the Company with documents establishing your identity and right to work in the United States. Those documents must be provided to the Company within three days after your employment start date.

Furthermore, this offer of employment is also contingent upon your responding in the affirmative by the below response date (the "**Expiration Date**"), after which the offer is no longer valid, and upon satisfactory completion of the following items and/or documentation:

1. A complete Employment Application, using the company form;
2. A satisfactory reference check; *and*
3. A satisfactory background check, your approval for which we will require.

We anticipate your start date being on or before **March 4, 2019**. Should the above terms and conditions meet with your approval, please sign and date this letter on the spaces provided below to acknowledge your acceptance of the terms of this agreement by **February 25, 2019** (the "**Expiration Date**").

Your employment is subject to the policies and procedures outlined on the company's internal intranet website, as periodically updated and amended. You may request a copy of those materials at any time prior to executing this agreement, and they are available for your reference subsequently on that site.

You acknowledge that you have had the opportunity to discuss this matter with and obtain advice from your private attorney, have had sufficient time to, and have carefully read and fully understand all the provisions of this Letter Agreement, and are knowingly and voluntarily entering into this Letter Agreement.

Sincerely,

/s/ Ralph Clark

Ralph Clark
President & CEO

I agree to and accept employment with ShotSpotter, Inc. on the terms and conditions set forth in this agreement.

Date: February 22, 2019

/s/ Nasim Golzadeh
Nasim Golzadeh

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statements on Forms S-8 (File Nos. 333-226053 and 333-218712) and Form S-3 (File No. 333-226052) of ShotSpotter, Inc. of our report dated March 4, 2019, relating to the consolidated financial statements, which appears in this annual report on Form 10-K for the year ended December 31, 2018.

/s/ BAKER TILLY VIRCHOW KRAUSE, LLP

Minneapolis, Minnesota
March 4, 2019

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Ralph A. Clark, certify that:

1. I have reviewed this Annual Report on Form 10-K of ShotSpotter, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 4, 2019

/s/ Ralph A. Clark
Ralph A. Clark
Chief Executive Officer

Exhibit 31.2

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Alan Stewart, certify that:

1. I have reviewed this Annual Report on Form 10-K of ShotSpotter, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:

    (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    (b) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    (c) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officers and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 4, 2019

/s/ Alan Stewart
Alan Stewart
Chief Financial Officer

Exhibit 32.1

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

I, Ralph A. Clark, certify pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the "Exchange Act") and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of ShotSpotter, Inc. for the year ended December 31, 2018, fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of ShotSpotter, Inc.

Date: March 4, 2019

/s/ Ralph A. Clark

Ralph A. Clark
Chief Executive Officer

Exhibit 32.2

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

I, Alan Stewart, certify pursuant to Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of ShotSpotter, Inc. for the year ended December 31, 2018, fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of ShotSpotter, Inc.

Date: March 4, 2019

/s/ Alan Stewart

Alan Stewart
Chief Financial Officer