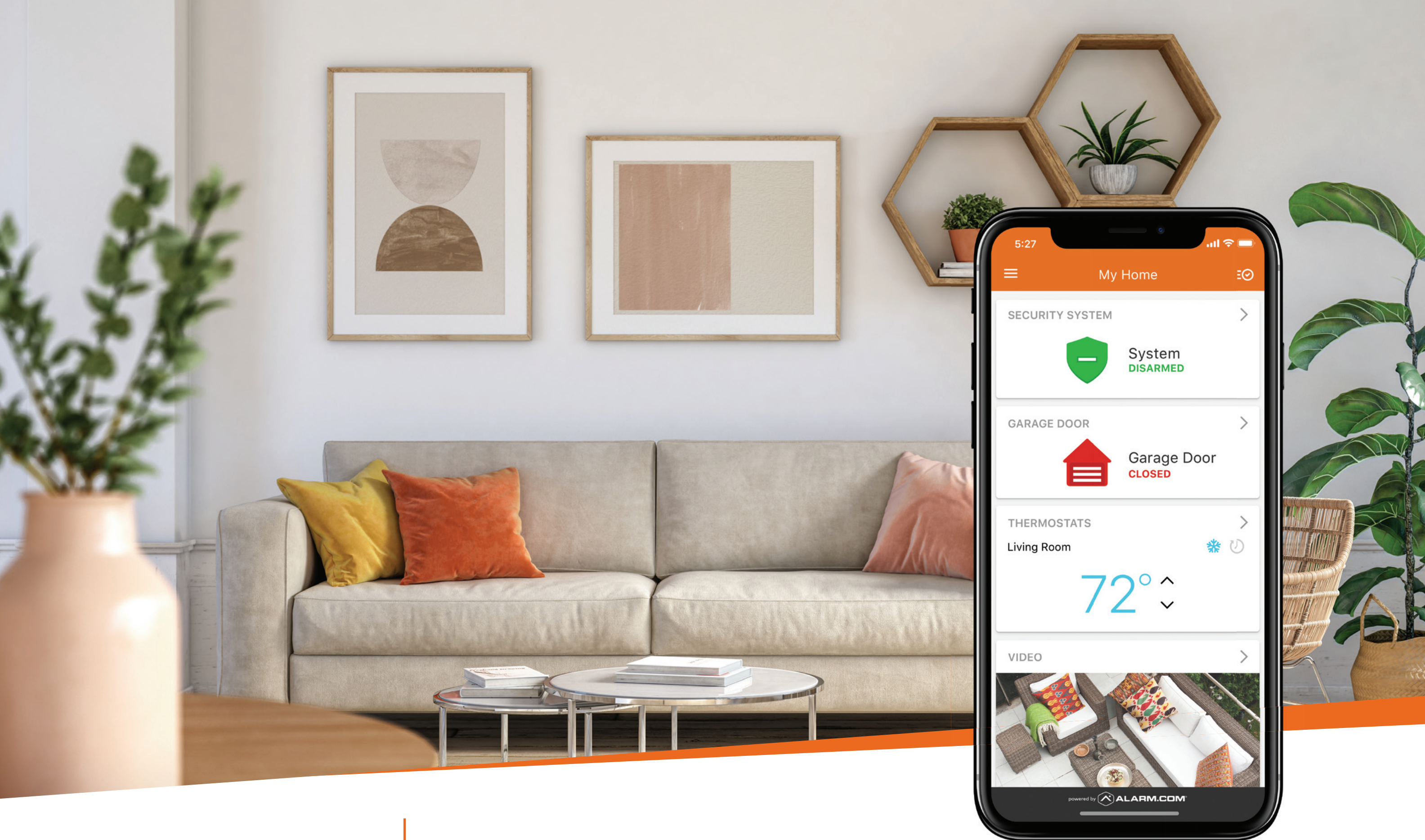
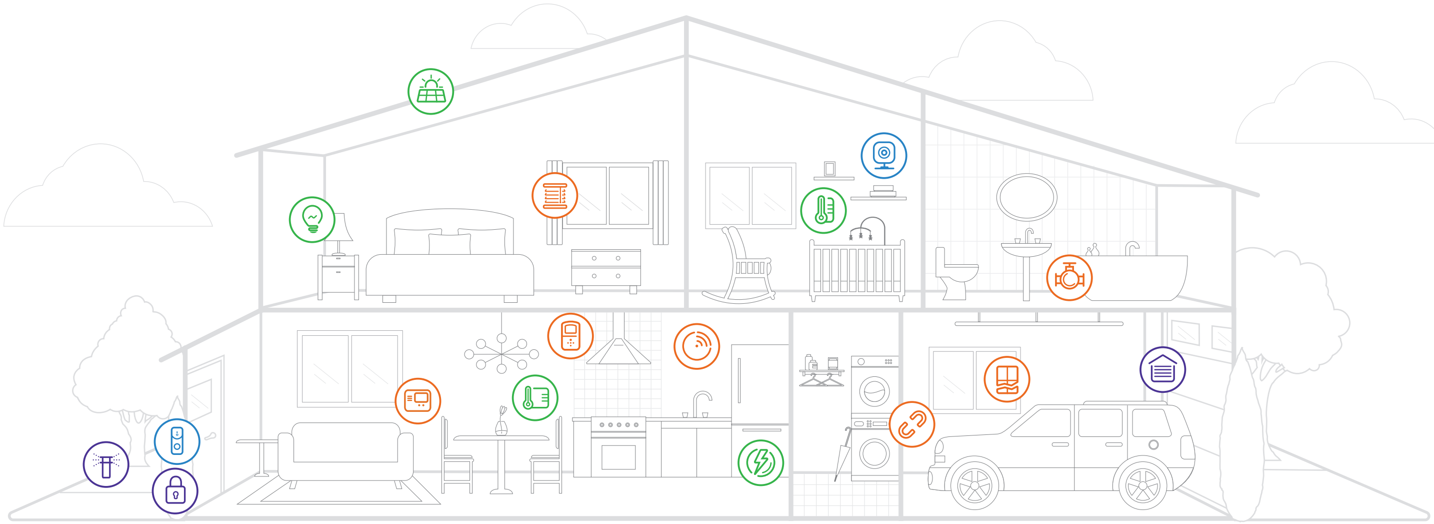


ALARM.COM®

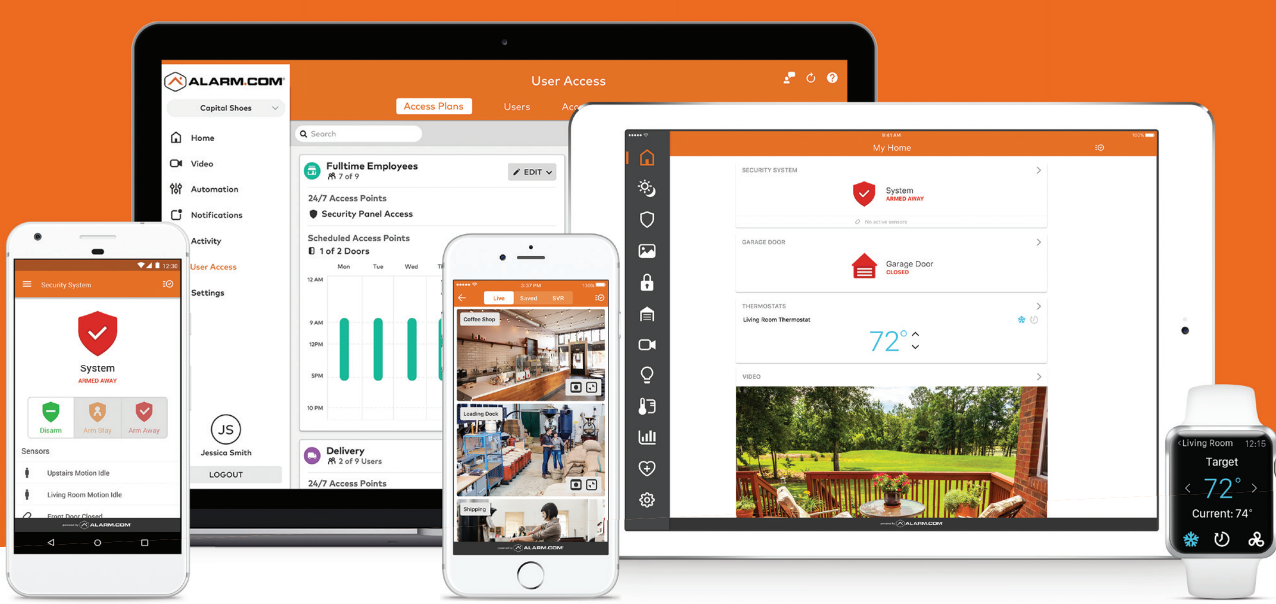
2019 Annual Report



Interactive Security • Video • Energy Management • Intelligent Automation • Wellness

SERVICE PROVIDER SOLUTIONS

Alarm.com Academy • Business Intelligence Tools • Customer Connections • Home Builder Program
Marketing Portal • MobileTech Application • Remote Toolkit • Partner Portal • Web Services



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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2019

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: 001-37461

ALARM.COM®

ALARM.COM HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware	**26-4247032**
(State or other jurisdiction of incorporation)	(IRS Employer Identification No.)
8281 Greensboro Drive Suite 100 Tysons Virginia	**22102**
(Address of principal executive offices)	(Zip Code)

Tel: (877) 389-4033
(Registrant's telephone number, including area code)

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, $0.01 par value per share	**ALRM**	**The Nasdaq Stock Market LLC**

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

Large Accelerated Filer	☑	Accelerated Filer	☐
Non-Accelerated Filer	☐	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 as of June 28, 2019 was $1.7 billion, based on a closing price of $53.50 per share of the registrant's common stock as reported on The Nasdaq Global Select Market. For purposes of this computation, all officers, directors, and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed to be an admission that such officers, directors or 10% beneficial owners are, in fact, affiliates of the registrant.

As of February 18, 2020, there were 48,747,310 outstanding shares of the registrant's common stock, $0.01 par value per share.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant’s proxy statement to be filed with the Securities and Exchange Commission pursuant to Regulation 14A in connection with the registrant’s 2020 Annual Meeting of Stockholders, which will be filed subsequent to the date hereof, are incorporated by reference into Part III of this Form 10-K. Such proxy statement will be filed with the Securities and Exchange Commission not later than 120 days following the end of the registrant’s fiscal year ended December 31, 2019.

ALARM.COM HOLDINGS, INC.
ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2019

TABLE OF CONTENTS

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K, or this Annual Report, contains "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that reflect our current expectations regarding future events, our strategy, future operations, future financial position, future revenues, projected costs, prospects, plans and objectives of management. The forward-looking statements are contained principally in Part I, Item 1. "Business," Part I, Item 1A. "Risk Factors," and Part II, Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations," but are also contained elsewhere in this Annual Report. Forward-looking statements include any statement that does not directly relate to a current or historical fact. In some cases, 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. These 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 prospectus, we caution you that these statements are based on a combination of facts and factors currently known to us and our expectations of the future, about which we cannot be certain. Forward-looking statements include statements about:

- our ability to continue to increase revenue, maintain existing subscribers and sell new services to new and existing subscribers;
- our ability to add new service provider partners, maintain existing service provider partner relationships and increase the productivity of our service provider partners;
- the effects of increased competition as well as innovations by new and existing competitors in our market;
- our ability to adapt to technological change and effectively enhance, innovate and scale our solution;
- our ability to effectively manage or sustain our growth;
- potential acquisitions and integration of complementary business and technologies;
- our ability to maintain, or strengthen awareness of, our brand;
- perceived or actual security, integrity, reliability, quality or compatibility problems with our solutions, including related to security breaches in our systems, our subscribers' systems, unscheduled downtime, or outages;
- statements regarding future revenue, hiring plans, expenses, capital expenditures, capital requirements and stock performance;
- our ability to attract and retain qualified employees and key personnel and further expand our overall headcount;
- our ability to develop relationships with service provider partners in order to expand internationally;
- our ability to stay abreast of new or modified laws and regulations that currently apply or become applicable to our business both in the United States and internationally;
- our ability to maintain, protect and enhance our intellectual property;
- costs associated with defending intellectual property infringement and other claims; and
- other risks detailed below in Item 1A. "Risk Factors."

You should refer to Item 1A. "Risk Factors" section of this Annual Report 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 will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame or at all. 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, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Annual Report.

Except as otherwise indicated herein or as the context otherwise requires, references in this Annual Report to "Alarm.com," the "company," "we," "us," "our" and similar references refer to Alarm.com Holdings, Inc. and, where appropriate, our consolidated subsidiaries.

PART I.

ITEM 1. BUSINESS

Overview

Alarm.com is the leading platform for the intelligently connected property. We offer a comprehensive suite of cloud-based solutions for smart residential and commercial properties, including interactive security, video monitoring, intelligent automation, energy management and wellness solutions. Millions of property owners depend on our technology to intelligently secure, automate and manage their residential and commercial properties. In the last year alone, our platforms processed more than 200 billion data points generated by over 100 million connected devices. We believe that this scale of subscribers, connected devices and data operations makes us the leader in the connected property market.

Our solutions are delivered through an established network of over 9,000 trusted service providers, who are experts at selling, installing and supporting our solutions. We primarily generate Software-as-a-Service, or SaaS, and license revenue through our service provider partners, who resell these services and pay us monthly fees. We also generate hardware and other revenue, primarily from our service provider partners and distributors. Our hardware sales include connected devices that enable our services, such as video cameras, video recorders, gateway modules and smart thermostats.

We enter into contracts with our service provider partners that establish pricing for access to our platform solutions and for the sale of hardware. These service provider contracts typically have an initial term of one year, with subsequent renewal terms of one year. Our service provider partners typically enter into contracts with our subscribers, which our service provider partners have indicated range from three to five years in length. Our service provider partners are free to market and sell our products under their own guidelines at prices to the consumer that they establish independently. We believe that our network of service providers and the length of our service relationships with residential and commercial property owners, combined with our robust SaaS platforms and approximately 20 years of operating experience, contribute to a compelling business model.

We have experienced significant growth since our company's inception in 2000. We generated total revenue of $502.4 million, $420.5 million and $338.9 million in 2019, 2018 and 2017, respectively. Our SaaS and license revenue was $337.4 million, $291.1 million and $236.3 million in 2019, 2018 and 2017, respectively, representing a compound annual growth rate of 19.5%. We also generated net income attributable to common stockholders of $53.5 million, $21.5 million and $29.2 million in 2019, 2018 and 2017, respectively, as well as Adjusted EBITDA, a non-GAAP metric, of $108.3 million, $93.1 million and $71.6 million in 2019, 2018 and 2017, respectively. See footnote 4 to the table contained in the section of this Annual Report titled "Selected Financial Data" for a reconciliation of Adjusted EBITDA to net income, the most directly comparable financial measures calculated and presented in accordance with accounting principles generally accepted in the United States, or GAAP.

Our Solutions and Integrated Platforms

Our solutions are designed to make both residential and commercial properties safer, smarter and more efficient. Our technology platforms support all participants in what we refer to as the connected property market. This market includes the residential and commercial property owners who subscribe to our services, the hardware partners who manufacture devices that integrate with our platforms and the service provider partners who install and maintain our solutions.

Our service provider partners can deploy our interactive security, video monitoring, intelligent automation, energy management and wellness solutions as stand-alone offerings or as combined solutions to address the needs of a broad range of customers. Our subscribers can seamlessly connect to their property through our family of mobile apps, websites and engagement platforms like voice control through Amazon Echo and Google Home, wearable devices like the Apple Watch and TV applications such as Apple TV and Amazon Fire TV.

Subscriber Solutions

Interactive Security

Interactive security is the entry point for most of our smart home and business subscribers. Our dedicated, two-way cellular connection between the property and our platforms is designed to be tamper resistant and to meet the high reliability standards for life safety services. Our solution integrates with central stations used by our service providers to monitor 24 hours a day, seven days a week, and coordinate emergency response as needed. Subscribers can use our services to control and monitor their security systems, as well as connected security devices including motion sensors, door locks, garage doors, thermostats and video cameras. The capabilities associated with this solution include:

- *Alarm Transmission.* We transmit alarm signals from monitored properties through our platforms to over 1,000 third-party central monitoring stations staffed 24 hours a day, seven days a week with live operators ready to initiate emergency response.

- *Always-On Monitoring.* Whether the security system is armed or disarmed, we continuously monitor sensors in the property and can keep subscribers aware of system events in all kinds of situations.

- *Insights Engine.* Our proprietary machine learning algorithms help safeguard connected properties by learning the unique activity patterns at the property and automatically notifying the subscriber of unexpected activity. Facial recognition technology enhances unexpected activity alerts by enabling certain security panels with built-in cameras to proactively monitor for unauthorized sharing or theft of an authorized user's security system codes.

- *Real-Time Alerts.* Notifications for any type of system event are delivered through push notifications, short message service, or SMS, or email, based on the subscriber's preference.

- *Wellness.* Our technology intelligently monitors quality of life through a suite of connected sensors and devices, and delivers proactive insights into activities of daily living. With alerts about changes in behavior that can indicate emerging quality of life issues, family members and homecare and senior living providers can address issues before they escalate and deliver more efficient care.

Video Monitoring

Our high definition video monitoring solution can provide a direct view into the property, capture footage of critical events and provide visual peace of mind. We offer indoor and outdoor camera solutions for residential and commercial properties at varying price points. We also provide a doorbell video camera solution that supports two-way audio with guests at the door, as well as video management software and cameras for enterprise commercial applications through our OpenEye business.

The capabilities associated with our video monitoring solution include:

- *Video Analytics:* Our video analytics engine provides object classification and object tracking technology that can distinguish between people, vehicles and animals, determine an object's direction of movement and measure the duration of activity. Subscribers can selectively control and manage notifications and assign virtual zones and multi-directional "tripwires" so they can monitor their properties for highly specific activity.

- *Live Streaming*. Subscribers can securely access live video feeds through the web and mobile apps at any time.

- *Smart Clip Capture*. Our video solutions can automatically record clips based on object or motion detection or system events, such as an alarm, a door opening or someone disarming the security panel.

- *Secure Cloud Storage*. Video clips are uploaded to our cloud-based storage system for secure storage and remote viewing.

- *Video Alerts*. Smart clips can be automatically sent via SMS, push notifications or email as soon as they are recorded.

- *Continuous High Definition Recording.* Onsite recording up to 24 hours a day, seven days a week is enabled through our Stream Video Recorder, or SVR, and can be played back securely, from anywhere, through the web and mobile apps.

- *Commercial Video Surveillance.* Our commercial video surveillance offering provides leading commercial-grade network cameras to support a wide range of business needs, enabling multi-camera installations with continuous recording, cloud-based storage and mobile access. Our OpenEye solution supports enterprise-level requirements such as advanced forensic video search, point of sale system integration and customer site mapping, as well as large-scale camera deployments.

Intelligent Automation and Energy Management

Our solution provides enhanced monitoring and control for a large ecosystem of connected devices, including thermostats, lights, locks, power meters, shades and other devices. Increasing awareness of energy usage and providing intelligent control over connected devices enables subscribers to create personalized automation rules and schedules. We believe our solutions can reduce energy waste as well as increase comfort and convenience for our subscribers. The capabilities associated with this solution include:

- *Scenes.* A customizable scenes button within the Alarm.com app provides the ability to adjust multiple devices in the property with a single command. For example, a homeowner leaving the house can arm the security system, lock the front door, close the garage door and adjust the thermostat with a single command.

- *Smart Thermostat Schedules.* Machine learning algorithms analyze system activity patterns to recommend thermostat schedules that increase energy efficiency when the property is not likely to be occupied.

- *Responsive Savings*. Smart thermostats connected to our platforms can automatically respond to sensors and other devices in the property to conserve energy. For example, when the security system is armed away, an arming state used when the property is not occupied, the thermostat can automatically adjust to save energy.

- *Precision Comfort.* Remote temperature sensors enable a subscriber to manage comfort in a specific area within their property. For example, a homeowner can set a desired temperature for a child's nursery to improve the child’s comfort. Subscribers can easily customize detailed schedules and rules to have the right temperature in the right location at the right time.

- *Energy Usage Monitoring.* Real-time and historical energy usage and solar energy production data for the entire property and individual devices can give subscribers greater insight into the property’s energy profile and encourage more efficient use of energy-consuming devices.

- *HVAC Monitoring Service*. Our Heating, Ventilation and Air Conditioning, or HVAC, monitoring service works with select high-efficiency heating and cooling systems and allows HVAC contractors to remotely monitor and manage sophisticated residential and light commercial heating and cooling systems.

- *Whole Home Water Safety Solution.* Our comprehensive whole home water safety solution protects properties from a full range of water-related damage. Integrated with Alarm.com’s Smart Water Valve + Meter, our solution can monitor usage, detect both low- and high-volume leaks and automatically shut off the property’s water supply. Working with other connected devices in the Alarm.com ecosystem, our solution can also alert the homeowner about conditions that can lead to frozen and burst pipes, intelligently manage humidity levels and notify homeowners if a sump pump fails.

- *Geo-Services.* Geo-Services use a phone’s geo-location to determine when to notify a subscriber of specific system conditions, or to automatically adjust system settings. Subscribers who enable Geo-Services can be notified if they leave home and forgot to lock a door, close the garage door, arm their security system or close a window. Additionally, smart thermostats and lights can be automatically adjusted based on the subscriber's location. Subscribers can create multiple geo-fences and customize the opt-in feature to meet their specific needs.

- *Demand Response Programs*. Utilities can reduce or shift power consumption during peak demand periods by accessing connected thermostats and other connected devices and appliances that participate in the utility's program. Managed at scale, these voluntary programs can significantly reduce costs for utilities. In addition to enabling subscribers to participate in these programs through our energy management solution, our EnergyHub subsidiary aggregates a diverse set of smart thermostats, connected water heaters, batteries and electric vehicles, enabling utilities to leverage these devices as an enterprise-grade, grid resource through EnergyHub's SaaS platform.

Commercial Solutions

In addition to our residential solutions, we offer Alarm.com for Business, a security solution for small and medium businesses, ranging from single-site to multi-location businesses. Alarm.com for Business combines intelligent intrusion detection, video surveillance, access control and energy management into a single solution through Alarm.com's app and online interfaces. Our Smarter Access Control solution, part of the unified Alarm.com for Business platform, helps solve many of the challenges faced by small business owners, with an array of always-on operational tools that can improve management and control. Our solution enhances and simplifies business operations, streamlines security, saves energy and provides insights into customer habits. Additionally, our business insights tools provide actionable intelligence, including open and close trends by location, peak periods of activity and customer traffic and energy savings opportunities. Key benefits of the commercial offering include:

- *Daily Safeguards.* Smarter business security keeps subscribers' properties and business locations secure with automatic arming at a certain time each day or after a certain period of inactivity.

- *Commercial Grade Video Solutions.* Connected commercial cameras communicate with the security system, capturing clips as activity occurs, and clips are uploaded to our cloud-based storage system for secure storage and remote viewing. Subscribers can receive real-time alerts and instantly view footage through the web or mobile apps if the alarm goes off, a door is unlocked, or unexpected activity occurs outside of normal business hours. Business owners can assess the situation and take appropriate action at any time of day and from any location.

- *Energy Savings.* Our smarter thermostat helps subscribers reduce energy costs automatically, even if someone forgets to adjust the temperature when they're closing up at the end of the day, generating a return on investment.

- *Protection for Valuables and Inventory.* Quick notifications keep business owners in the know about individuals entering or exiting the back office, the supply room, or any other specific rooms or doors.

- *Multi-site Management and Access Control.* Commercial subscribers with multiple business locations and access points can easily manage Alarm.com's commercial video and access control solutions from a single dashboard and customize video feeds to seamlessly monitor multiple properties and use sophisticated rules, user permissions and schedules to manage access across multiple locations and security partitions. Business owners and managers can easily add and delete access for new employees and departing employees in a few clicks and provide limited access for third parties such as delivery personnel, without calling the alarm company or worrying about spare keys.

- *Operational Insights.* Visibility into activity patterns and trends can help business owners make smarter decisions around staffing, promotions, energy use and more. Reports show activity patterns across the business, helping owners spot new opportunities for staffing, traffic flow and promotions.

- *Early Problem Identification.* Unexpected activity alerts provide business owners and managers with the early identification of activity such as unexpected entry after hours, or doors propped open that could cause energy waste or safety concerns, helps business owners quickly respond to problematic situations. Alarm.com provides a time stamped log of which users armed or disarmed the system or entered the property using their keycard.

- *Simple to Use.* Alarm.com's smartphone app is intuitive to use, with visibility and control of every solution available within a single dashboard.

- *Professionally Supported.* Smarter business security powered by Alarm.com is supported by our authorized service provider partners from start to finish, with installation, configuration and technical support included. Our service provider partners are trained and equipped with Alarm.com's advanced digital tools.

- *Easy to Maintain.* Alarm.com's solutions are cloud-based, so no additional IT resources are needed.

Our OpenEye enterprise commercial video management solution complements the Alarm.com for Business platform and extends our market to address the unique requirements of large commercial and national account customers such as universities, banks, national retail chains and property management companies. OpenEye offers Video Surveillance as a Service, or VSaaS, as well as cameras, recorders and other peripherals designed for video applications. Key benefits of the OpenEye solution include:

- *Intelligent Cloud Architecture.* OpenEye's hybrid architecture intelligently combines local recording with managed cloud services. It provides long-term storage of high-resolution video, low bandwidth consumption and a full suite of centralized management capabilities that include remote viewing, administration and health reporting for deployments that can include thousands of video cameras.

- *Enterprise-Level Capabilities.* Capabilities such as advanced forensic video search, point of sale system integration and customer site mapping address the specific needs of enterprise-level subscribers and allow loss prevention officers, business analysts and other IT resources to employ video as a key operational and management tool.

- *Large-Scale Video Deployments.* Centrally managed recorder firmware, system diagnostics and configuration capabilities allow enterprise commercial customers to actively manage large-scale camera deployments. OpenEye's user interface is optimized for guard or command stations and other settings where video from multiple cameras is viewed and searched simultaneously on secure workstations or video walls.

Service Provider Solutions

We also offer a comprehensive suite of enterprise-grade business management solutions for our service provider partners. We are committed to helping our service provider partners grow their businesses, efficiently manage their customer bases and maximize the value of their Alarm.com accounts. We believe these services strengthen our partnerships with service providers as they build their businesses on our platforms. Capabilities associated with these solutions include:

- *Service Provider Portal.* Our permission-based online portal provides account management, sales, marketing, training and support tools. Through this portal, our service provider partners can activate and manage their Alarm.com customer accounts, order equipment, access invoices and billing, remotely program customer systems, obtain sales and marketing services and engage in training.

- *Installation and Support.* The ease of installation and cost of supporting connected property solutions are critical considerations for our service provider partners. We support the end-to-end process for deploying and managing our solutions with tools that make installation and support more efficient.

        - ***MobileTech Application and Remote Toolkit.*** Our installation and troubleshooting mobile app, designed for service provider technicians, facilitates the successful installation, programming and support of equipment while either on-site at subscribers' properties or while working remotely. Service provider technicians and customer service personnel can access a collection of remote system management tools and panel settings through the Remote Toolkit using the MobileTech application and our service provider portal, including service appointment reminders, device notes, quick links and MobileTech Podcasts. These features help to increase accuracy of installations, decrease time spent on-site and reduce support calls and return visits, which saves subscribers and service providers money while increasing subscriber satisfaction.

        - ***Smart Gateway.*** The Smart Gateway allows service provider partners to create a private and secure Wi-Fi network infrastructure specifically for a subscriber's property that is dedicated to Alarm.com video cameras. It is designed to streamline camera installation and reduce common support issues caused by a subscriber's unmanaged Wi-Fi network, and to enable Alarm.com's service provider partners to more efficiently deploy video cameras and services with better connectivity and maximized wireless spectrum for performance.

    - *Business Management.* Our services deeply integrate with our service provider partners' offerings and provide increased business insight into their customer base and key business health metrics.

        - ***Web Services.*** Our web services allow our service provider partners to integrate their existing customer management software and tools with our platforms. This creates a unified interface for our service provider partners to seamlessly perform functions like creating a new customer account or upgrading a service plan.

        - ***Business Intelligence.*** Our powerful business intelligence tools provide service providers with crucial insights into the performance of their Alarm.com subscriber account base. Business Intelligence provides key operational metrics related to account plan adoption, attrition and service quality to help service provider partners grow their business and improve customer retention.

        - ***Customer Relationship Management (CRM):*** Our SecurityTrax offering enhances our platforms with a cloud-based CRM and enterprise resource planning solution. Expressly developed for security service providers, SecurityTrax automates business processes across the entire customer lifecycle for more efficient customer management and support operations.

    - *Sales, Marketing & Training.* Our comprehensive customer lifecycle sales and marketing services are available to help our service provider partners effectively market and sell our solutions.

        - ***Marketing Portal.*** We provide a broad suite of marketing and sales tools and resources for our service provider partners, including our MobileSales app, co-brandable landing pages, mobile optimized websites with integrated lead capture, social media, videos, images, collateral, direct mail and event materials.

        - ***Alarm.com Academy.*** We offer comprehensive in-person training programs to our service provider partners. Additionally, we offer online courses through a learning management system, enabling our service provider partners to access training on the full suite of Alarm.com solutions anytime.

        - ***Customer Connections.*** We help our service provider partners maximize the value of existing accounts by offering targeted in-app messaging and e-mail communications to existing subscribers. These campaigns are designed to increase engagement, drive upsell opportunities and enable referrals for our service provider partners.

    - *Home Builder Program.* Our home builder program includes hardware and service plans designed to facilitate partnerships between home builders and our service provider partners. Home builders can rapidly deploy a full-range of our smart home solutions in new communities and model homes, while minimizing risks and costs by depending on our nationwide network of service provider partners for hardware installation and ongoing support.

Benefits of Our Solutions

Residential and commercial properties are ripe for reinvention. The intersection of significant technology trends, like the broad adoption of mobile devices, the emergence of the Internet of Things, or IoT, the power of big data and the extensibility of the cloud, makes the connected property possible. Security systems, thermostats, door locks, video cameras, lights, garage doors and other devices that were once inert can now be intelligent and connected. Our intelligently connected property solutions provide a wealth of benefits to our subscribers and our service provider partners.

Benefits to Subscribers:

- ***Single Connected Platform.*** Our cloud-based platforms provide subscribers with a single point of integrated control across a diverse ecosystem of IoT devices. Solutions are easily personalized to suit the individual subscriber's needs.

- ***Reliable Network Communications.*** Our platforms utilize a highly secure, highly reliable, dedicated cellular connection which mitigates common vulnerabilities of systems that are connected via the phone line or wired networks, such as power outages, cut phone lines, or broadband connectivity issues.

- ***Intelligent and Actionable.*** Our platforms aggregate real-time, multi-point data about property activity and system status. We have developed a highly scalable data analytics engine to deliver unique features and capabilities based on insights derived from this growing set of data. For example, learning detailed activity patterns in a property enables our platforms to proactively alert the subscriber about unexpected events. Our platforms continue to learn and adapt to become more personalized over time.

- ***Broad Device Compatibility.*** Our platforms support a wide variety of connected devices and communications protocols, allowing seamless integration and automation of many devices, as well as the addition of new devices in the future.

- ***Accessible and Affordable.*** Our platforms offer an affordable alternative to expensive automation systems, legacy residential and commercial control products and disparate point product solutions.

- ***Trusted Provider***. We have established a reputation and brand as a trusted and reliable technology provider. We respect the privacy of our subscribers and do not sell their data. Our reputation is strengthened through our network of over 9,000 service provider partners, who have significant expertise in the delivery of our SaaS platforms and suite of solutions.

Benefits to Service Provider Partners:

- ***New Revenue Generation Opportunities.*** Our solutions help broaden our service provider partners' offerings beyond traditional security to also include comprehensive smart residential and commercial solutions like intelligent automation, video monitoring and energy management. They can access new market opportunities and drive incremental recurring monthly revenue by expanding their offerings with our solutions. We offer training, tools and other resources to help our service provider partners fully leverage the breadth and depth of our platforms.

- ***Expanded Set of Value-Added Services.*** We provide value-added services to our service provider partners, including training, marketing, installation and support tools and business intelligence analytics. This support helps our service provider partners more efficiently acquire, install and support their customers on our platforms.

- ***Improved Service Provider Economics.*** Our cloud-based platforms can help reduce our service provider partners' service delivery and support costs. Remote Toolkit enables our service provider partners to remotely configure, support and upgrade their customer's hardware or software, eliminating the cost of an in-person service call for many routine support issues. In addition, we believe our service provider partners can generate more revenue from each subscriber by providing services beyond traditional security.

- ***Broad Device Interoperability.*** We have an open platform which allows service provider partners to respond to market innovation and consumer demands for connected devices. Device hardware is deeply integrated into our platforms to provide a more cohesive experience than stand-alone products deliver. For example, in 2019, we launched: Smart Gateway, a private and secure Wi-Fi network infrastructure; an HVAC monitoring service and the integration of a range of new security control panels. Our platforms also support various broadly adopted communications protocols commonly used in many automation devices, including Z-Wave, Wi-Fi and cellular. Our open platforms and interoperability give our service provider partners a wide selection of devices to suit their customers' needs now and in the future.

- ***Dedicated Service Provider Support.*** We operate support centers focused on providing timely support to our service providers and their technicians. We are focused on ensuring our service providers receive fast and reliable service to address the broad needs of subscribers across a wide range of devices and solutions.

Competitive Advantages

We believe the benefits we can deliver to our subscribers and our service provider partners create a significant competitive advantage in the connected property market.

- ***Scale of Subscriber Base and Service Provider Coverage.*** Our platforms currently support millions of residential and commercial subscribers and we have over 9,000 service provider partners who market, sell and support Alarm.com solutions. In 2019, our platforms processed more than 200 billion data points generated by over 100 million connected devices. We believe the combination of the size of our subscriber base, service provider network and the volume of data generated by the integrated devices on our platforms creates a competitive advantage for us.

- ***Security Grade, Cloud-Based Architecture.*** We built our platforms with a cloud-based, multi-tenant architecture that allows for real-time updates and upgrades. Our platforms were purpose-built from the ground up with life safety standards at the core.

- ***Highly Scalable Data Analytics Engine.*** We processed more than 200 billion data points in 2019. As consumer preferences shift towards more proactive, intelligence-based features, we believe that our investments in proprietary analytics give us a competitive advantage.

- ***Trusted Brand.*** We believe that our leading position in our space is an indicator that we have developed a trusted brand with service providers and consumers for innovative and reliable technology and service. Our iOS and Android mobile apps have each been downloaded millions of times and both apps consistently have impressive user ratings.

- ***Commitment to Innovation.*** We are a pioneer in the intelligently connected property market and we continue to make significant investments in innovative research and development. Our investment has resulted in 276 issued patents as of December 31, 2019 and numerous patent applications pending which we believe can help ensure that our technology remains competitively differentiated and legally protected.

Growth Strategy

We intend to maintain our leadership position by continuing to develop and deploy innovative technologies and by expanding our ecosystem of partners. Our key growth strategies include:

- ***Drive SaaS and license revenue growth and add new service providers.*** We will continue to focus on helping our service provider partners succeed in driving adoption of our full suite of services. We offer sales and marketing resources to help our service provider partners become more effective in selling our solutions and we will continue to make significant investments to support our service provider network. In addition, we plan to continue to expand our network of service provider partners.

- ***Upgrade traditional security customers to our solutions.*** We believe there is a significant opportunity for our service provider partners to expand adoption of our connected solutions within their customer base. We intend to leverage our status as a trusted provider to drive consumer interest in our offerings and enable our service provider partners to upgrade their legacy security customers to our connected property solutions.

- ***Continue to invest in our platforms.*** As a pioneer in connected home and business solutions, we have made significant investments in building our platforms over the last 20 years. We intend to continue to invest heavily to add additional innovative offerings and broaden our suite of solutions. As the market for IoT grows and more devices become connected, we are building technology and partnerships to connect these devices to our platforms.

- ***Expand international presence.*** We are investing in international expansion because we believe there is a significant global market opportunity for our products and services. Today, our products are currently localized and available in approximately 40 countries outside of North America, including Australia, Belgium, Brazil, Chile, Columbia, Iceland, Ireland, Netherlands, New Zealand, Norway, South Africa, Sweden and Turkey. We intend to continue to grow our number of international subscribers by strengthening our presence in existing markets and expanding to additional markets.

- ***Expand into the small and medium business market segment.*** We believe there is significant opportunity to expand our products and services to small and medium businesses, ranging from single-site to multi-location enterprises. We intend to leverage many of our existing solutions, including our Alarm.com for Business solution, to provide such businesses with visibility into their key operational activities, keep businesses secure, provide facility access to employees and vendors remotely and manage their energy costs.

- ***Channel expansion.*** Today, many consumers purchase connected devices through a security service provider. Continued growth in the connected property market has invited new participants into the space that can complement our current partner ecosystem. We intend to continue to develop partnerships with heating, ventilation and air conditioning installers, property management companies, utility companies, insurance providers and other services companies to expand avenues into residential and commercial properties.

- ◦ ***Pursue selective strategic acquisitions.*** We may selectively pursue future acquisitions of businesses, technologies, or products that complement our platforms or align with our overall growth strategy. Such acquisitions could expand our team and/or technology portfolio to help us add new features to our platforms, accelerate the pace of our innovation or help us access attractive markets.

Market Opportunity

Our addressable market consists of both residential and commercial properties. Our residential subscribers are typically owners of single-family homes and our commercial subscribers often include retail businesses, restaurants, schools and universities, commercial facilities and professional offices.

We believe there is an opportunity to significantly increase the adoption of our solutions as more residential and commercial property owners adopt intelligently connected property solutions and as the major technology trends of mobile access, the IoT, big data and cloud technology continue to create opportunities to connect people with their properties in new ways. According to research data published by IHS Markit in 2019, the global installed base for smart home devices reached 684 million in 2018 and will exceed 4 billion in 2023. During this period, IHS Markit also forecasts strong growth for professional service provider channels as consumers look toward more services and a do-it-for-me approach, compared with purely do-it-yourself. We believe that the trends highlight a significant opportunity for market participants, including Alarm.com and our service provider partners.

Our Technology

Cloud Services Platform

Our internal engineering teams have designed and developed our core technology. As an industry leader, we believe we have robust cloud service platforms for the intelligently connected property. Our cloud services platforms manage communication with the system at the property, intelligently direct alerts and notifications, learn patterns and identify anomalies and manage video processing and storage. Additionally, our platforms enable device integrations through application program interfaces, or APIs, and offer our service provider partners extensive workflow efficiency services.

Since our inception, we have utilized a multi-tenant SaaS platform architecture to enable rapid innovation in a scalable environment. Our platforms are architected to scale and our technology team has developed proprietary cloud-based applications to support our service provider partners and subscribers. Security and life safety are mission critical components of our service offering; thus, we are committed to high reliability standards. We operate our Alarm.com cloud services platform through two redundant network operations centers located in Phoenix, Arizona and Ashburn, Virginia. Each center is designed to run the entire Alarm.com platform independent of the other.

Cybersecurity

The solutions we provide rely on technology and data, and cybersecurity is a crucial part of our business. We conduct our business in the United States and are expanding internationally in various other countries. Conducting expanded international operations subjects us to additional risks, including our exposure to cyber-attacks. We dedicate substantial resources to the protection of our data, systems and infrastructure. We have implemented and continue to maintain a comprehensive information security program consisting of policies, procedures, and technology designed to maintain the privacy, security and integrity of our data, confidential information, systems and networks. Among other things, the program includes controls designed to limit and monitor access to our systems, networks and data, prevent inappropriate or unauthorized access or modification, and monitor for threats or vulnerability.

Hardware and Manufacturing

We are involved in designing and manufacturing various types of hardware that enable our solutions, including:

- ◦ *Cellular Communication Modules.* We offer cellular communications modules that are tightly integrated with security system control panels, sensors and other devices. We regularly pioneer technical advances in this space, including the expansion of our deployment of security services hardware with 4G LTE cellular network connections. All of our modules, designed by our device engineering team and manufactured in the United States by a contract manufacturing partner, provide a dedicated and fully managed two-way cellular connection between the subscriber’s property and our cloud platforms. The modules run our proprietary firmware and enable:
    - Real-time analysis of system events reported by security sensors and other devices.
    - Local automation rule execution.
    - The management of message transmissions to our cloud platforms for further processing.

- *Image Sensor*. Our image sensor, designed by our device engineering team and manufactured in the United States by a contract manufacturing partner, is a wireless, battery-operated, passive infrared motion sensor that captures images based on various system triggers. These images are transmitted by our cellular communications module to our cloud platforms. Subscribers can securely view images through our website and mobile apps, as well as customize their notification settings to have new images automatically sent via SMS and email.

- *Video Cameras*. We offer a suite of high definition, Internet Protocol, or IP, video cameras to enable our video monitoring services. Our indoor, outdoor, and video doorbell cameras include options for night vision capabilities as well as wireless or Power over Ethernet communication features. We also offer a network video recording device, the SVR, for on premise, continuous video recording seamlessly connected to our cloud platforms for remote playback through our user interfaces. Our video cameras and SVRs are specified to our platforms through proprietary software.

- *Alarm.com Smart Thermostat*. Our Smart Thermostat combines elegant design, sophisticated cloud services and advanced energy management features. It was designed by our Building 36 and device engineering teams to work in concert with other devices in the connected property. It communicates with the Alarm.com communications module via Z-wave and supports both battery power and common wire power installation.

    - Remote temperature sensors can pair with our Smart Thermostat to enable temperature set points for any room in the property, not just the room where the thermostat is installed. Our Smart Thermostat supports multiple remote temperature sensors for precise temperature control for a residential or commercial property.

    - We designed our Smart Thermostat to be easy to install and support remotely. The MobileTech app assists in proper wiring and installation and Remote Toolkit enables remote access to the thermostat settings for easy troubleshooting and support.

Research and Development

We invest substantial resources in research and development to enhance our platforms and applications, support our technology infrastructure, develop new capabilities and conduct quality assurance testing. We expect to invest significantly in continued research and development efforts to expand the capabilities of our technology. Our research and development of new products and services is a multidisciplinary effort across our product management, program management, software engineering, device engineering, quality engineering, configuration management and network operations teams. As of December 31, 2019, we had 621 employees engaged in research and development functions.

Service Provider Network

Our trusted service provider partner network is key in driving the adoption of connected home and commercial solutions. Our solutions are sold, installed, and serviced by a network of independent licensed, professional service provider partners. Our channel network currently consists of over 9,000 active service provider partners, including smaller local providers, larger regional providers and national service providers with thousands of employees. We have also seen growth in other areas of our channel network, including new providers in the intelligent automation, HVAC, property management and insurance markets.

We believe this highly trusted, established network is a core strength that enables an efficient and scalable customer acquisition model, allowing us to focus on technology innovation. We also believe that the combination of our solutions and our service provider partners' expertise is the most effective way to drive mass market adoption of the intelligently connected property.

The traditional security and home automation market is highly fragmented with approximately 15,000 security dealers nationally. According to the February 2020 Barnes Buchanan Conference Report, the top 5 dealers represented approximately 34% of all industry recurring monthly revenue in 2019. The distribution of revenue among our service provider partners is reflective of the industry overall. Monitronics International, Inc., rebranded and now doing business as Brinks Home Security, represented greater than 10% but not more than 15% of our revenue in 2017. ADT LLC represented greater than 15% but not more than 20% of our revenue in 2017, 2018 and 2019.

Subscribers

Our platforms currently support millions of residential and commercial subscribers. We define the number of subscribers as the number of residential or commercial properties to which we are delivering at least one of our solutions. A subscriber who subscribes to one of our service level packages as well as one or more of our a la carte add-ons is counted as one subscriber. Our number of subscribers does not include the customers of our service provider partners to whom we license our intellectual property, as they do not utilize one of our SaaS platforms. Our subscriber acquisition cost payback period has historically been one year or less.

Sales and Marketing

The goal of our sales team is to help our service provider partners succeed in selling, installing and supporting our full suite of solutions. Our sales team is also responsible for recruiting new service provider partners to Alarm.com. We also have a global business development team dedicated to establishing new service provider and distribution relationships in international markets.

Our marketing team is focused on empowering our service provider partners to effectively promote and sell our solutions. We design, develop and provide end-to-end marketing services including tools and content for lifecycle marketing to help our service providers build awareness, create interest, activate subscribers, develop and maintain the ongoing customer relationship, increase customer engagement, and generate upsell and referral opportunities. While we offer tools and services to assist our service providers when they are marketing to potential subscribers, we do not control or influence the marketing activities performed by our service providers, as they are free to select the marketing tools they believe will be the most effective. Our contracts with our service providers require that they comply with all applicable rules and laws when engaging in marketing activities. We also offer comprehensive training opportunities through our Alarm.com Academy, including in-person training courses and an online learning management system.

We believe our sales and marketing approach enables us to expand our breadth of service providers, provide highly customized services and scale quickly. As of December 31, 2019, we had 391 employees engaged in sales and marketing functions.

Service Provider Support

We support the full suite of software and hardware products on the Alarm.com platform through a highly trained and experienced team of professionals based in the United States. We primarily support our service provider partners. Our service provider partners, in turn, support their customers, who are our subscribers. To that end, subscribers occasionally reach us directly with support needs and we either assist the subscriber directly or, when appropriate, route the subscriber to the appropriate service provider partner for additional assistance.

We offer high-quality support to our service providers via phone, web ticketing and email. With every interaction, our team is committed to exceptional customer satisfaction and industry-leading response times. We use a tiered structure to efficiently escalate and resolve issues of varying complexity and to scale our support organization as we grow. Our staff is multilingual and we continue to grow our language capabilities to support our international expansion.

Our Competition

The market in which we participate for connected property solutions is fragmented, highly competitive and constantly evolving. We expect competition to continue from existing competitors as well as potential new market entrants in the interactive security, video monitoring, intelligent automation and energy management markets. Our current competitors include providers of other technology platforms for the connected property with interactive security, including Alula (formed following the merger of ipDatatel, LLC and Resolution Products, LLC), Avigilon Corporation, Brivo Inc., Digital Monitoring Products Inc., Eagle Eye Networks Inc., Honeywell International Inc., Resideo Technologies Inc., Telular Corporation (acquired by AMETEK, Inc.), SecureNet Technologies, LLC, United Technologies Corporation, and Verkada Inc., which sell solutions to service providers, cable operators, technology retailers and other residential and commercial automation providers. We also compete with interactive, monitored security solutions sold directly to subscribers by firms like Scout and SimpliSafe. In addition, our service provider partners compete with security solutions sold directly to subscribers, as well as managed service providers, such as cable television, telephone and broadband companies like AT&T Inc., Charter Communications, Inc. and Comcast, and providers of point products, including Google Inc.'s Nest Labs, Inc. which offers the Nest Secure security system as well as a smart thermostat, the Nest Protect smart smoke detector and video cameras. Amazon.com offers Amazon Home Services security packages with bundled equipment and professional installation, and Amazon Key, a security camera and smart lock integration feature. Ring Inc., owned by Amazon.com, offers a connected video doorbell, video cameras and an integrated security system, Ring Alarm. Samsung's SmartThings offers a security system and a home automation and awareness hub. Arlo Technologies, Inc. offers connected video cameras, a connected video doorbell, and smart security devices. Apple Inc. offers a feature that allows some manufacturers' connected devices and accessories to be controlled through its HomeKit service available in Apple's iOS operating system. Additionally, Canary and other companies offer all in one video monitoring and awareness devices. In addition, we may compete with other large technology companies that offer control capabilities among their products, applications and services, and have ongoing development efforts to address the broader connected home market.

Many of our competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, technical, sales, marketing, distribution and other resources than we have. We expect to encounter new competitors as we enter new markets as well as increased competition, both domestically and internationally, from other established and emerging residential and commercial security monitoring, video monitoring and automation, wellness, and energy management companies as well as large technology companies. In addition, there may be new technologies that are introduced that reduce demand for our solutions or make them obsolete. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties and rapidly acquire significant market share, or they may acquire third-party technology or solution providers that we partner with and choose not to offer those solutions on our platforms. Increased competition could also result in price reductions and loss of market share, any of which could result in lower revenue and negatively affect our ability to grow our business. We believe the principal competitive factors in the connected property market include the following:

- simplicity and ease of use;
- ability to offer persistent awareness, control, and intelligent automation;
- breadth of features and functionality provided;
- flexibility of the solutions and ability to personalize for the individual consumer;
- compatibility with a wide selection of third-party devices;
- pricing, affordability, and accessibility;
- sales reach and local installation and support capabilities; and
- brand awareness and reputation.

We believe that we compete favorably with respect to each of these factors. Additionally, we believe that our cloud-based software platforms, intelligently connected property solutions, and proven scalability help further differentiate us from competitors. Nevertheless, our competitors may have substantially greater financial, technical and other resources, greater brand recognition, larger sales and marketing budgets and broader distribution channels than we do.

Our Intellectual Property

Our success and ability to compete effectively depend in part on our ability to protect our proprietary technology and to establish and adequately protect our intellectual property rights. To accomplish these objectives, we rely on a combination of patent, trademark, copyright and trade secret laws in the United States and other jurisdictions, as well as license agreements, confidentiality agreements and other contractual protections.

As of December 31, 2019, we owned 265 issued United States utility patents, one issued United States design patent, seven issued Canadian patents and three issued Australian patents and these patents are scheduled to expire between 2021 and 2038. We continue to broaden our intellectual property portfolio and file patent applications and as of December 31, 2019, we had 213 pending utility patent applications and 71 provisional patent applications filed in the United States. We also had 56 pending international patent applications and 21 international patent applications pending under the Patent Cooperation Treaty. The claims for which we have sought patent protection apply to both our platforms and solutions. Our patent and patent applications generally apply to the features and functions of our platforms, and solutions and the applications associated with our platforms. We also have, and may be required to seek, licenses under patents or intellectual property rights owned by third parties, including open-source software and other commercially available software.

We also rely on several registered and unregistered trademarks to protect our brand. We have 15 registered trademarks in the United States, including Alarm.com and the Alarm.com logo and design, and six registered trademarks in Canada.

We seek to protect our intellectual property rights by requiring our employees and independent contractors involved in development to enter into agreements acknowledging that all inventions, trade secrets, works of authorship, developments, concepts, processes, improvements and other works generated by them on our behalf are our intellectual property, and assigning to us any rights, including intellectual property rights, that they may claim in those works.

We expect that products in our industry may be subject to third-party infringement lawsuits as the number of competitors grows and the functionality of products in different industry segments overlaps. We have brought infringement claims against third parties in the past and may do so in the future to defend our intellectual property position. In addition, from time to time, we may face claims by third parties that we infringe upon or misappropriate their intellectual property rights, and we may be found to be infringing upon or to have misappropriated such rights. In the future, we, or our service providers or subscribers, may be the subject of legal proceedings alleging that our solutions or underlying technology infringe or violate the intellectual property rights of others.

Employees

As of December 31, 2019, we had 1,160 full-time employees. We also engage consultants and temporary employees from time to time. None of our employees are covered by collective bargaining agreements and we consider our relations with our employees to be good.

Corporate Information

We were founded in 2000 as a business unit within MicroStrategy Incorporated. We were incorporated in 2003 under the name Alarm.com Incorporated as a majority-owned subsidiary of MicroStrategy. MicroStrategy sold all its interests in Alarm.com Incorporated in 2009 and we established Alarm.com Holdings, Inc. in connection with the sale transaction. Our principal executive offices are located at 8281 Greensboro Drive, Suite 100, Tysons, Virginia 22102. Our telephone number is (877) 389-4033. We completed our initial public offering in July 2015 and our common stock is listed on The Nasdaq Global Select Market under the symbol "ALRM."

On January 1, 2017, we acquired certain assets of ObjectVideo, Inc., or ObjectVideo, that constituted a business now called ObjectVideo Labs, LLC, or ObjectVideo Labs, including products, technology portfolio and engineering team. ObjectVideo was a pioneer in the fields of video analytics and computer vision with technology that extracts meaning and intelligence from video streams in real-time to enable object tracking, pattern recognition and activity identification. On March 8, 2017, we acquired certain assets related to the Connect business unit of Icontrol Networks, Inc., or Icontrol, and all of the outstanding equity interests of the two subsidiaries through which Icontrol conducted its Piper business. Connect provides a custom, on-premise interactive security and home automation platform for ADT Pulse® and several other service providers. Piper provides an all-in-one video and home automation hub. On October 21, 2019, we acquired 85% of the issued and outstanding capital stock of PC Open Incorporated, a Washington corporation, doing business as OpenEye. OpenEye provides cloud-managed video surveillance solutions for the enterprise commercial market.

Available Information

Our website is located at www.alarm.com and our investor relations website is located at http://investors.alarm.com. Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, are available free of charge on our investor relations website as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or the SEC. The SEC maintains an internet site that contains reports, proxy and information statements and other information. The address of the SEC's website is www.sec.gov.

Webcasts of our earnings calls and certain events we participate in or host with members of the investment community are on our investor relations website. Additionally, we provide notifications of news or announcements regarding our business and financial performance, SEC filings, investor events, and our press and earnings releases, as part of our investor relations website. Investors and others can receive real-time notifications of new information posted on our investor relations website by signing up for email alerts and RSS feeds. Further corporate governance information, including our corporate governance guidelines and board committee charters, is also available on our investor relations website under the heading "Corporate Governance." The contents of our websites are not intended to be incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our websites are intended to be inactive textual references only.

ITEM 1A. RISK FACTORS

Our business is subject to numerous risks. You should consider carefully the risks and uncertainties described below, in addition to other information contained in this Annual Report on Form 10-K as well as our other public filings with the Securities and Exchange Commission, or SEC. Any of the following risks could have a material adverse effect on our business, financial condition, results of operations and prospects and cause the trading price of our common stock to decline.

Risks Related to Our Business and Industry

Our quarterly results of operations have fluctuated and are likely to continue to fluctuate. As a result, we may fail to meet or exceed the expectations of investors or securities analysts, which could cause our stock price to decline.

Our quarterly operating results, including the levels of our revenue, gross margin, cash flow and deferred revenue, may fluctuate as a result of a variety of factors, including revenue related to the product mix that we sell, the relative sales related to our platforms and solutions and other factors which are outside of our control. If our quarterly revenue or results of operations fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Fluctuations in our results of operations may be due to a number of factors, including:

- the portion of our revenue attributable to software as a service, or SaaS, and license versus hardware and other sales;
- our ability to manage the businesses we have acquired, and to integrate and manage any future acquisitions of businesses;
- fluctuations in demand, including due to seasonality, for our platforms and solutions;
- changes in pricing by us in response to competitive pricing actions;
- our ability to increase, retain and incentivize the service provider partners that market, sell, install and support our platforms and solutions;
- the ability of our hardware vendors to continue to manufacture high-quality products and to supply sufficient products to meet our demands;
- the timing and success of introductions of new solutions, products or upgrades by us or our competitors and the entrance of new competitors;
- changes in our business and pricing policies or those of our competitors;
- the ability to accurately forecast revenue as we generally rely upon our service provider partner network to generate new revenue;
- our ability to control costs, including our operating expenses and the costs of the hardware we purchase;
- changes in U.S. trade policies, including new or potential tariffs or penalties on imported products;
- competition, including entry into the industry by new competitors and new offerings by existing competitors;
- issues related to introductions of new or improved products such as shortages of prior generation products or short-term decreased demand for next generation products;
- perceived or actual problems with the security, privacy, integrity, reliability, quality or compatibility of our solutions, including those related to security breaches in our systems, our subscribers' systems, unscheduled downtime, or outages;
- the amount and timing of expenditures, including those related to expanding our operations, including through acquisitions, increasing research and development, introducing new solutions or paying litigation expenses;
- the ability to effectively manage growth within existing and new markets domestically and abroad;
- changes in the payment terms for our platforms and solutions;
- collectibility of receivables due from service provider partners and other third parties;

- the strength of regional, national and global economies; and
- the impact of natural disasters such as earthquakes, hurricanes, fires, power outages, floods, epidemics, pandemics and other catastrophic events or man-made problems such as terrorism or global or regional economic, political and social conditions.

Due to the foregoing factors and the other risks discussed in this Annual Report on Form 10-K, you should not rely on quarter-to-quarter comparisons of our results of operations as an indication of our future performance. You should not consider our recent revenue and Adjusted EBITDA growth or results of one quarter as indicative of our future performance. See the *Non-GAAP Measures* section of Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations - Non-GAAP Measures," for a discussion of the limitations of Adjusted EBITDA and a reconciliation of Adjusted EBITDA to net income, the most comparable GAAP measurement, for the years ended December 31, 2019, 2018 and 2017.

We may not sustain our growth rate and we may not be able to manage any future growth effectively.

We have experienced significant growth and also have substantially expanded our operations in a short period of time. Our revenue increased from $208.9 million in 2015 to $502.4 million in 2019. We do not expect to achieve similar growth rates in future periods. You should not rely on our operating results for any prior quarterly or annual periods as an indication of our future operating performance. If we are unable to maintain expected revenue growth in both absolute dollars and as a percentage of prior period revenue, our financial results could suffer and our stock price could decline.

Our future operating results depend, to a large extent, on our ability to successfully manage our anticipated expansion and growth. To successfully manage our growth and obligations as a public company, we believe we must effectively, among other things:

- maintain our relationships with existing service provider partners and add new service provider partners;
- increase our subscriber base and help our service provider partners maintain and improve their revenue retention rates, while also expanding their cross-sell effectiveness;
- manage our relationships with our hardware vendors and other key suppliers;
- add, train and integrate sales and marketing personnel;
- expand our international operations; and
- continue to implement and improve our administrative, financial and operational systems, procedures and controls.

We intend to continue to invest in research and development, sales and marketing, and general and administrative functions and other areas to grow our business. We are likely to recognize the costs associated with these increased investments earlier than 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 enhancements to our existing solutions and we may fail to satisfy subscriber and service provider partner requirements, maintain the quality of our solutions, execute on our business plan or respond to competitive pressures, which could result in our financial results suffering and a decline in our stock price.

We have expanded our business rapidly in recent periods. If we fail to manage the expansion of our operations and infrastructure effectively, we may be unable to execute our business plan, maintain high levels of service or address competitive challenges adequately.

We increased our number of full-time employees from 507 as of December 31, 2015 to 1,160 as of December 31, 2019. Our growth has placed, and may continue to place, a significant strain on our managerial, administrative, operational, financial and other resources. We intend to further expand our overall business, service provider partner network, subscriber base, headcount and operations, including by acquiring other businesses. Creating and maintaining a global organization and managing a geographically dispersed workforce requires substantial management effort and significant additional investment in our infrastructure. We will be required to continue to improve our operational, financial and management controls and our reporting procedures to ensure timely and accurate reporting of our operational and financial results and we may not be able to do so effectively. As such, we may be unable to manage our expenses effectively in the future, which may negatively impact our gross profit or operating expenses in any particular quarter. If we fail to manage our anticipated growth and change in a manner that preserves the key aspects of our corporate culture, the quality of our solutions may suffer, which could negatively affect our brand and reputation and harm our ability to retain and attract service provider partners and consumers.

Events outside of our control, including public health crises, may negatively affect the operation of our business, the facilities of third parties on which we depend and consumer spending.

Our global and international operations involve certain risks, including risks related to the facilities of certain of our suppliers, contract manufacturing facilities, third-party warehouse facilities, third-party service providers or customers. Such risks can include public health crises, such as pandemics and epidemics, political instability or other events outside of our control. These types of events could have a negative effect on consumer spending in the affected regions or depending upon the severity, globally, and also could adversely affect our supply chain operations and our operating results.

For example, in December 2019, a novel strain of coronavirus surfaced in Wuhan, China, which has resulted in the temporary closure of many corporate offices, retail stores, and manufacturing facilities and factories across China. We anticipate there could be some disruption to our hardware supply chain due to the impact of the coronavirus on manufacturing and production in China because approximately one-third to one-half of the finished goods hardware products that we sell to our customers are imported from China, and other Alarm.com finished goods hardware products that are not manufactured in China may contain subcomponents made in China. However, as the potential impact on global supply chains from the coronavirus is difficult to predict, the extent to which the coronavirus may negatively affect our industry, our supply of finished goods hardware products, our business operations, our operating results or the duration of any potential business disruption is uncertain. Any potential impact to our results will depend to a large extent on future developments and new information that may emerge regarding the duration and severity of the coronavirus and the actions taken by authorities and other entities to contain the coronavirus or treat its impact, particularly in China and Taiwan, all of which are beyond our control. These potential impacts, while uncertain, could harm our business and adversely affect our operating results.

From time to time, we are involved in legal proceedings where a negative outcome, including an adverse litigation judgment or settlement, could expose us to monetary damages or limit our ability to operate our business, resulting in a material adverse effect on our business, financial condition, cash flows and results of operations.

We are involved and have been involved in the past in legal proceedings from time to time. For example, on June 2, 2015, Vivint filed a lawsuit against us alleging that our technology directly and indirectly infringes six patents purchased by Vivint. On December 30, 2015, a putative class action lawsuit was filed against us, alleging violations of the Telephone Consumer Protection Act, or TCPA. On October 25, 2018, we entered into a definitive settlement agreement, or the Settlement Agreement, with the plaintiffs to settle the class action lawsuit for $28.0 million, which was paid to the settlement administrator in 2019. On August 13, 2019, the U.S. District Court for the Northern District of California, or the Court, approved the Settlement Agreement. On October 22, 2019, EcoFactor, Inc., or EcoFactor, filed a complaint with the U.S. International Trade Commission, or ITC, alleging that Alarm.com's smart thermostats infringe three U.S. patents owned by EcoFactor. On November 11, 2019, EcoFactor filed a lawsuit against us in U.S. District Court, District of Massachusetts, alleging infringement of the same three patents asserted against us in the ITC. On January 31, 2020, EcoFactor filed a lawsuit against us in the U.S. District Court, Western District of Texas, alleging Alarm.com's products and services infringe four additional U.S. patents owned by EcoFactor. EcoFactor is seeking permanent injunctions, enhanced damages and attorney's fees. See the section of this Annual Report titled "Legal Proceedings" for additional information regarding each of these matters. We may not be able to accurately assess the risks related to any of these suits, and we may be unable to accurately assess our level of exposure as the results of any litigation, investigations and other legal proceedings are inherently unpredictable and expensive. Any claims against us, whether meritorious or not, could be time consuming, result in costly litigation, damage our reputation, require significant amounts of management time and divert significant resource. Companies in our industry have been subject to claims related to patent infringement, regulatory matters, and product liability, as well as contract and employment-related claims. As a result of patent infringement and other intellectual property proceedings, we have, and may be required to seek in the future, licenses under patents or intellectual property rights owned by third parties, including open-source software and other commercially available software, which can be costly, or cross-license agreements relating to our and third-party intellectual property. The outcome of legal claims and proceedings against us cannot be predicted with certainty, and a negative outcome could result in a material adverse effect on our business, financial condition, cash flows and results of operations.

Our business operates in a regulated industry.

Our business, operations and service provider partners are subject to various U.S. federal, state and local consumer protection laws, licensing regulation and other laws and regulations, and to similar laws and regulations in the other countries in which we operate. Our advertising and sales practices and that of our U.S. service provider partner network are subject to regulation by the U.S. Federal Trade Commission, or the FTC, in addition to state consumer protection laws. The FTC and the Federal Communications Commission have issued regulations that place restrictions on, among other things, unsolicited automated telephone calls to residential and wireless telephone subscribers by means of automatic telephone dialing systems and the use of prerecorded or artificial voice messages. If our service provider partners were to take actions in violation of these regulations, such as telemarketing to individuals on the "Do Not Call" registry or using automatic telephone dialing systems and prerecorded or artificial voice messages, we could be subject to fines, penalties, private actions or enforcement actions by government regulators. For example, on December 30, 2015, a putative class action lawsuit was filed against us, alleging violations of the TCPA. In connection with the Settlement Agreement we entered into with the plaintiffs, which was approved by the Court in August 2019, we paid total cash consideration of $28.0 million into a settlement fund, and, among other things, agreed to implement certain business practice changes to increase awareness of TCPA compliance. See the section of this Annual Report titled "Legal Proceedings" for additional information on this matter. Although we have taken steps to insulate ourselves from any such wrongful conduct by our service provider partners, and to contractually require our service provider partners to comply with these laws and regulations, no assurance can be given that we will not be exposed to liability as result of our service provider partners' conduct. Further, to the extent that any changes in law or regulation further restrict the lead generation activity of our service provider partners, these restrictions could result in a material reduction in subscriber acquisition opportunities, reducing the growth prospects of our business and adversely affecting our financial condition and future cash flows. In addition, most states in which we operate have licensing laws directed specifically toward the monitored security services industry. Our business relies heavily upon cellular telephone service to communicate signals. Cellular telephone companies are currently regulated by both federal and state governments. State-level privacy and data security laws in California and various other U.S. states regulate our, and our service provider partners', use, collection, and disclosure of subscribers' personal information. A number of proposed privacy bills in other U.S. states could place restrictions on how we and our service provider partners use personal information and market to consumers in those states. Changes in laws or regulations could require us to change the way we operate, which could increase costs or otherwise disrupt operations. In addition, failure to comply with any such applicable laws or regulations could result in substantial fines or revocation of our operating permits and licenses, including in geographic areas where our services have substantial penetration, which could adversely affect our business, financial condition, cash flows and results of operations. Further, if these laws and regulations were to change or if we fail to comply with such laws and regulations as they exist today or in the future, our business, financial condition, cash flows and results of operations could be materially and adversely affected.

The markets in which we participate are highly competitive and many companies, including large technology companies, broadband and security service providers and other managed service providers, are actively targeting the home automation, security monitoring, video monitoring and energy management markets. If we are unable to compete effectively with these companies, our sales and profitability could be adversely affected.

We compete in several markets, including security, video, automation, energy management and wellness solutions. The markets in which we participate are highly competitive and competition may intensify in the future.

Our ability to compete depends on a number of factors, including:

- our platforms and solutions' functionality, performance, ease of use, reliability, availability and cost effectiveness relative to that of our competitors' products;
- our success in utilizing new and proprietary technologies to offer solutions and features previously not available in the marketplace;
- our success in identifying new markets, applications and technologies;
- our ability to attract and retain service provider partners;
- our name recognition and reputation;
- our ability to recruit software engineers and sales and marketing personnel; and
- our ability to protect our intellectual property.

Consumers may prefer to purchase from their existing suppliers rather than a new supplier regardless of product performance or features. In the event a consumer decides to evaluate a new home automation, security monitoring, video monitoring, energy management, or wellness solution, the consumer may be more inclined to select one of our competitors whose product offerings are broader than those that we offer.

Our current competitors include providers of other technology platforms for the connected property with interactive security, including Alula (formed following the merger of ipDatatel, LLC and Resolution Products, LLC), Avigilon Corporation, Brivo Inc., Digital Monitoring Products Inc., Eagle Eye Networks Inc., Honeywell International Inc., Resideo Technologies Inc., Telular Corporation (acquired by AMETEK, Inc.), SecureNet Technologies, LLC, United Technologies Corporation, and Verkada Inc., which sell solutions to service providers, cable operators, technology retailers and other residential and commercial automation providers. We also compete with interactive, monitored security solutions sold directly to subscribers by firms like Scout and SimpliSafe. In addition, our service provider partners compete with security solutions sold directly to subscribers, as well as managed service providers, such as cable television, telephone and broadband companies like AT&T Inc., Charter Communications, Inc. and Comcast, and providers of point products, including Google Inc.'s Nest Labs, Inc. which offers the Nest Secure security system as well as a smart thermostat, the Nest Protect smart smoke detector and video cameras. Amazon.com offers Amazon Home Services security packages with bundled equipment and professional installation, and Amazon Key, a security camera and smart lock integration feature. Ring Inc., owned by Amazon.com, offers a connected video doorbell, video cameras and an integrated security system, Ring Alarm. Samsung's SmartThings offers a security system and a home automation and awareness hub. Arlo Technologies, Inc. offers connected video cameras, a connected video doorbell, and smart security devices. Apple Inc. offers a feature that allows some manufacturers' connected devices and accessories to be controlled through its HomeKit service available in Apple's iOS operating system. Additionally, Canary and other companies offer all in one video monitoring and awareness devices. In addition, we may compete with other large technology companies that offer control capabilities among their products, applications and services, and have ongoing development efforts to address the broader connected home market.

Many of our competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, technical, sales, marketing, distribution and other resources than we have. We expect to encounter new competitors as we enter new markets as well as increased competition, both domestically and internationally, from other established and emerging home automation, security monitoring, video monitoring and automation, wellness, and energy management companies as well as large technology companies. In addition, there may be new technologies that are introduced that reduce demand for our solutions or make them obsolete. Our current and potential competitors may also establish cooperative relationships among themselves or with third parties and rapidly acquire significant market share. Increased competition could also result in price reductions and loss of market share, any of which could result in lower revenue and negatively affect our ability to grow our business.

Aggressive business tactics by our competitors may reduce our revenue.

Increased competition in the markets in which we compete may result in aggressive business tactics by our competitors, including:

- selling at a discount;
- offering products similar to our platforms and solutions on a bundled basis at no charge;
- announcing competing products combined with extensive marketing efforts;
- providing financing incentives to consumers; and
- asserting intellectual property rights irrespective of the validity of the claims.

Our service provider partners may switch and offer the products and services of competing companies, which would adversely affect our sales and profitability. Competition from other companies may also adversely affect our negotiations with service provider partners and suppliers, including, in some cases, requiring us to lower our prices. Opportunities to take market share using innovative products, services and sales approaches may also attract new entrants to the field. We may not be able to compete successfully with the offerings and sales tactics of other companies, which could result in the loss of service provider partners offering our platforms and solutions and, as a result, our revenue and profitability could be adversely affected.

If we fail to compete successfully against our current and future competitors, or if our current or future competitors employ aggressive business tactics, including those described above, demand for our platforms and solutions could decline, we could experience cancellations of our services to consumers, or we could be required to reduce our prices or increase our expenses.

The proper and efficient functioning of our network operations centers and data back-up systems is central to our solutions.

Our solutions operate with a hosted architecture and we update our solutions regularly while our solutions are operating. If our solutions and/or upgrades fail to operate properly, our solutions could stop functioning for a period of time, which could put our users at risk. Our ability to keep our business operating is highly dependent on the proper and efficient operation of our network operations centers and data back-up systems. Although our network operations centers have back-up computer and power systems, if there is a catastrophic event, natural disaster, terrorist attack, security breach or other extraordinary event, we may be unable to provide our subscribers with uninterrupted monitoring service or may be unable to adequately protect confidential information and data from unauthorized access or loss. Furthermore, because data back-up systems are susceptible to malfunctions and interruptions (including those due to equipment damage, power outages, human error, computer viruses, computer hacking, data corruption and a range of other hardware, software and network problems), we cannot guarantee that we will not experience data back-up failures in the future. A significant or large-scale security breach, malfunction or interruption of our network operations centers or data back-up systems could adversely affect our ability to keep our operations running efficiently or could result in unauthorized access to or loss of data. If such an event results in unauthorized access to or loss of service provider partner, subscriber, employee or other personally identifiable data subject to data privacy and security laws and regulations, then it could result in substantial fines by U.S. federal and state authorities, foreign data privacy authorities in the European Union, or the EU, Canada, and other countries, and/or private claims by companies or individuals. If a malfunction or security breach results in a wider or sustained disruption, it could have a material adverse effect on our reputation, business, financial condition, cash flows or results of operations.

We sell security and life safety solutions and if our solutions fail for any reason, we could be subject to liability and our business could suffer.

We sell security and life safety solutions, which are designed to secure the safety of our subscribers and their residences or commercial properties. If these solutions fail for any reason, including due to defects in our software, a carrier outage, a failure of our network operations centers, a failure on the part of one of our service provider partners or user error, we could be subject to liability for such failures and our business could suffer.

Our platforms and solutions may contain undetected defects in the software, infrastructure, third-party components or processes. If our platforms or solutions suffer from defects, we could experience harm to our branded reputation, claims by our subscribers or service provider partners or lost revenue during the period required to address the cause of the defects. We may find defects in new, acquired or upgraded solutions, resulting in loss of, or delay in, market acceptance of our platforms and solutions, which could harm our business, financial condition, cash flows or results of operations.

Since solutions that enable our platforms are installed by our service provider partners, if they do not install or maintain such solutions correctly, our platforms and solutions may not function properly. If the improper installation or maintenance of our platforms and solutions leads to service or equipment failures after introduction of, or an upgrade to, our platforms or a solution, we could experience harm to our branded reputation, claims by our subscribers or service provider partners or lost revenue during the period required to address the cause of the problem. Further, we rely on our service provider partners to provide the primary source of support and ongoing service to our subscribers and, if our service provider partners fail to provide an adequate level of support and services to our subscribers, it could have a material adverse effect on our reputation, business, financial condition, cash flows or results of operations.

Any defect in, or disruption to, our platforms and solutions could cause consumers not to purchase additional solutions from us, prevent potential consumers from purchasing our platforms and solutions or harm our reputation. Although our contracts with our service provider partners limit our liability to our service provider partners for these defects, disruptions or errors, we nonetheless could be subject to litigation for actual or alleged losses to our service provider partners or our subscribers, which may require us to spend significant time and money in litigation or arbitration, or to pay significant settlements or damages. Defending a lawsuit, regardless of its merit, could be costly, divert management's attention and affect our ability to obtain or maintain liability insurance on acceptable terms and could harm our business. Although we currently maintain some warranty reserves, we cannot assure you that these warranty reserves will be sufficient to cover future liabilities.

Failure to maintain the security of our information and technology networks, including information relating to our service provider partners, subscribers and employees, could adversely affect us.

We are dependent on information technology networks and systems, including the Internet, to process, transmit and store electronic information and, in the normal course of our business, we collect and retain certain information pertaining to our service provider partners, subscribers and employees, including credit card information for many of our service provider partners and certain of our subscribers. If security breaches in connection with the delivery of our solutions allow unauthorized third parties to access any of this data or obtain control of our subscribers' systems, our reputation, business, financial condition, cash flows and results of operations could be harmed.

The legal, regulatory and contractual environment surrounding information security, privacy and credit card fraud is constantly evolving and companies that collect and retain such information are under increasing attack by cyber-criminals around the world. Further, as the regulatory focus on privacy issues continues to increase and worldwide laws and regulations concerning the protection of data and personal information expand and become more complex, these potential risks to our business will intensify. A significant actual or potential theft, loss, fraudulent use or misuse of service provider partner, subscriber, employee or other personally identifiable data, whether by third parties or as a result of employee malfeasance or otherwise, non-compliance with our contractual or other legal obligations regarding such data or a violation of our privacy and security policies with respect to such data could result in loss of confidential information, damage to our reputation, early termination of our service provider partner contracts, litigation, regulatory investigations or actions and other liabilities or actions against us, including significant fines by U.S. federal and state authorities, foreign data privacy authorities in the EU, Canada, and other countries and private claims by companies and individuals for violation of data privacy and security regulations. To the extent that any such exposure leads to credit card fraud or identity theft, we may experience a general decline in consumer confidence in our business, which may lead to an increase in attrition rates or may make it more difficult to attract new subscribers. If any one of these risks materializes our business, financial condition, cash flows or results of operations could be materially and adversely affected.

If our security measures are breached, including any breaches caused by cyber-attacks, our reputation may be damaged, we may be exposed to significant liabilities under U.S. and foreign laws, and our business and results of operations may be adversely affected.

Cyber-attacks from computer hackers and cyber criminals and other malicious Internet-based activity continue to increase generally, and perpetrators of cyber-attacks may be able to develop and deploy viruses, worms, ransomware, malware, DNS attacks, wireless network attacks, attacks on our cloud networks, phishing attempts, social engineering attempts, distributed denial of service attacks and other advanced persistent threats or malicious software programs that attack our products and services, our networks and network endpoints or otherwise exploit any security vulnerabilities of our products, services and networks. Techniques used to obtain unauthorized access or to sabotage systems change frequently and generally are not recognized until launched against a target. As a result, we may be unable to anticipate these techniques or to implement adequate preventative measures. We cannot be certain that advances in cyber-capabilities or other developments will not compromise or breach the technology protecting the networks that access our platforms and solutions, and we can make no assurance that we will be able to detect, prevent, timely and adequately address or mitigate the negative effects of cyber-attacks or other security breaches.

Security breaches of, or sustained attacks against, our networks and infrastructure could create system disruptions and shutdowns that could result in disruptions to our operations or unauthorized access to or loss of our data. If such an event results in unauthorized access to or loss of any data subject to data privacy and security laws and regulations, then we could be subject to substantial fines by U.S. federal and state authorities, foreign data privacy authorities in the EU, Canada, and other countries, and private claims by companies or individuals. A system disruption, shutdown, or loss of data may result in adverse publicity and therefore adversely affect the market's perception of the security and reliability of our services. A cyber-attack may cause additional costs, such as investigative and remediation costs, and the costs of providing individuals and/or data owners with notice of the breach, legal fees and the costs of any additional fraud detection activities required by law, a court or a third-party. Additionally, some of our customer contracts require us to indemnify customers from damages they may incur as a result of a breach of our networks and systems. There can be no assurance that the limitation of liability provisions in our contracts for a security breach would be enforceable or would otherwise protect us from any such liabilities or damages with respect to any particular claim. While we maintain general liability insurance coverage and coverage for technology errors or omissions, we cannot assure you that such coverage will be available in sufficient amounts to cover one or more large claims related to a breach, will continue to be available on acceptable terms or at all. If any one of these risks materializes, our business, financial condition, cash flows or results of operations could be materially and adversely affected.

We rely on our service provider partner network to acquire additional subscribers, and the inability of our service provider partners to attract additional subscribers or retain their current subscribers could adversely affect our operating results.

Substantially all of our revenue is generated through the sales of our platforms and solutions by our service provider partners, who incorporate our solutions in certain of the products and packages they sell to their customers, and our service provider partners are responsible for subscriber acquisition, as well as providing customer service and technical support for our platforms and solutions to the subscribers. We provide our service provider partners with specific training and programs to assist them in selling and providing support for our platforms and solutions, but we cannot assure that these steps will be effective. In addition, we rely on our service provider partners to sell our platforms and solutions into new markets in the intelligent and connected property space. If our service provider partners are unsuccessful in marketing, selling and supporting our platforms and solutions, our operating results could be adversely affected.

In order for us to maintain our current revenue sources and grow our revenues, we must effectively manage and grow relationships with our service provider partners. Recruiting and retaining qualified service provider partners and training them in our technology and solutions requires significant time and resources. If we fail to maintain existing service provider partners or develop relationships with new service provider partners, our revenue and operating results would be adversely affected. In addition, to execute on our strategy to expand our sales internationally, we must develop, manage and grow relationships with service provider partners that sell into these markets.

Any of our service provider partners may choose to offer a product from one of our competitors instead of our platforms and solutions, elect to develop their own competing solutions or simply discontinue their operations with us. For example, we entered into a license agreement in November 2013 with Vivint Inc., or Vivint, pursuant to which we granted a license to use the intellectual property associated with our connected home solutions. Under the terms of this arrangement, Vivint has transitioned from selling our solutions directly to its customers to selling its own home automation product to its new customers. We now generate revenue from a monthly fee charged to Vivint on a per customer basis from sales of this service provider partner’s product; however, these monthly fees are less on a per customer basis than fees we receive from our SaaS solutions. Therefore, we receive less revenue on a per customer basis from Vivint compared to our SaaS subscriber base, which may result in a lower revenue growth rate. We must also work to expand our network of service provider partners to ensure that we have sufficient geographic coverage and technical expertise to address new markets and technologies. While it is difficult to estimate the total number of available service provider partners in our markets, there are a finite number of service provider partners that are able to perform the types of technical installations required for our platforms and solutions. In the event that we saturate the available service provider pool, or if market or other forces cause the available pool of service providers to decline, it may be increasingly difficult to grow our business. If we are unable to expand our network of service provider partners, our business could be harmed.

As consumers’ product and service options grow, it is important that we enhance our service provider partner footprint by broadening the expertise of our service provider partners, working with larger and more sophisticated service provider partners and expanding the mainstream solutions our service provider partners offer. If we do not succeed in this effort, our current and potential future service provider partners may be unable or unwilling to broaden their offerings to include our connected property solutions, resulting in harm to our business.

We receive a substantial portion of our revenue from a limited number of service provider partners, and the loss of, or a significant reduction in, orders from one or more of our major service provider partners would result in decreased revenue and profitability.

Our success is highly dependent upon establishing and maintaining successful relationships with a variety of service provider partners. We market and sell our platforms and solutions through a channel assisted sales model and we derive substantially all of our revenue from these service provider partners. We generally enter into agreements with our service provider partners outlining the terms of our relationship, including service provider pricing commitments, installation, maintenance and support requirements, and our sales registration process for registering potential sales to subscribers. These service provider contracts typically have an initial term of one year, with subsequent renewal terms of one year, and are terminable at the end of the initial term or renewal terms without cause upon written notice to the other party. In some cases, these contracts provide the service provider partner with the right to terminate prior to the expiration of the term without cause upon 30 days written notice, or, in the case of certain termination events, the right to terminate the contract immediately. While we have developed a network of over 9,000 service provider partners to sell, install and support our platforms and solutions, we receive a substantial portion of our revenue from a limited number of channel partners and significant customers. During the years ended December 31, 2019, 2018 and 2017, our 10 largest revenue service provider partners accounted for 52%, 57% and 60% of our revenue. ADT LLC represented greater than 15% but not more than 20% of our revenue in 2017, 2018 and 2019. ADT LLC also represented more than 10% of accounts receivable as of December 31, 2019 and 2018. Monitronics International, Inc., rebranded and now doing business as Brinks Home Security, represented greater than 10% but not more than 15% of our revenue in 2017.

Brinks Home Security, along with certain of its domestic subsidiaries, filed voluntary petitions for relief, as well as a joint partial prepackaged plan of reorganization, or the Plan, with the United States Bankruptcy Court for the Southern District of Texas as of June 30, 2019. We were listed as an unsecured creditor with an unimpaired trade claim in the Plan. On September 3, 2019, Brinks Home Security disclosed it had emerged from the bankruptcy proceedings after completing a reorganization and obtaining new debt financing. We expect to continue to receive payments in the ordinary course of business; however, if Brinks Home Security is unable to meet its payment obligations to us, our revenue and profitability may be adversely affected.

We anticipate that we will continue to be dependent upon a limited number of service provider partners for a significant portion of our revenue for the foreseeable future and, in some cases, a portion of our revenue attributable to individual service provider partners may increase in the future. The loss of one or more key service provider partners, a reduction in sales through any major service provider partners or the inability or unwillingness of any of our major service provider partners to pay for our platforms and solutions would reduce our revenue and could impair our profitability.

Substantially all of the revenues associated with the non-hosted software platform are from a single customer and the loss of this customer could harm our operating results.

In March 2017, we acquired certain assets related to the Connect business unit of Icontrol Networks, Inc., or Icontrol, and all of the outstanding equity interests of the two subsidiaries through which Icontrol conducted its Piper business, which we refer to in this report as the Acquisition. Historically, ADT LLC, or ADT, has accounted for substantially all of the revenue of the Connect business unit. In connection with the Acquisition we amended our master service agreement with ADT to cover services provided with respect to the non-hosted software platform, or Software platform, and recently further amended the master service agreement; however, we cannot assure you that we will be able to meet the conditions set forth in the amended agreement or that ADT will use the Software platform for its new customers or keep existing customers on the Software platform. In addition, even if ADT continues to use the Software platform, we cannot assure you that the revenue from ADT or new accounts added by ADT will reach or exceed historical levels in any future period. We may not be able to offset any unanticipated decline in revenue from ADT with revenues from new customers or other existing customers. Because the Software platform relies on ADT for substantially all of its revenue, any negative developments in ADT's business, or any decrease in revenue from or loss of ADT as a customer could harm our business, financial condition, cash flows and results of operations.

We have relatively limited visibility regarding the consumers that ultimately purchase our solutions, and we often rely on information from third-party service providers to help us manage our business. If these service providers fail to provide timely or accurate information, our ability to quickly react to market changes and effectively manage our business may be harmed.

We sell our solutions through service provider partners. These service provider partners work with consumers to design, install, update and maintain their connected home and commercial installations and manage the relationship with our subscribers. While we are able to track orders from service provider partners and have access to certain information about the configurations of their Alarm.com systems that we receive through our platforms, we also rely on service provider partners to provide us with information about consumer behavior, product and system feedback, consumer demographics and buying patterns. We use this channel sell-through data, along with other metrics, to forecast our revenue, assess consumer demand for our solution, develop new solutions, adjust pricing and make other strategic business decisions. Channel sell-through data is subject to limitations due to collection methods and the third-party nature of the data and thus may not be complete or accurate. If we do not receive consumer information on a timely or accurate basis, or if we do not properly interpret this information, our ability to quickly react to market changes and effectively manage our business may be harmed.

Consumers may choose to adopt point products that provide control of discrete functions rather than adopting our connected property platforms. If we are unable to increase market awareness of the benefits of our unified solutions, our revenue may not continue to grow, or it may decline.

Many vendors have emerged, and may continue to emerge, to provide point products with advanced functionality for use in connected properties, such as a video doorbell or thermostat that can be controlled by an application on a smartphone. We expect more and more consumer electronic and consumer appliance products to be network-aware and connected — each very likely to have its own smart device (phone or tablet) application. Consumers may be attracted to the relatively low costs of these point products and the ability to expand their connected property control solution over time with minimal upfront costs, despite some of the disadvantages of this approach, which may reduce demand for our connected property solutions. If so, our service provider partners may switch and offer the point products and services of competing companies, which would adversely affect our sales and profitability. If a significant number of consumers in our target market choose to adopt point products rather than our connected property solutions, then our business, financial condition, cash flows and results of operations will be harmed, and we may not be able to achieve sustained growth or our business may decline.

Mergers or other strategic transactions involving our competitors could weaken our competitive position, which could adversely affect our ability to compete effectively and harm our results of operations.

Our industry is highly fragmented, and we believe it is likely that some of our existing competitors will consolidate or be acquired. In addition, some of our competitors may enter into new alliances with each other or may establish or strengthen cooperative relationships with systems integrators, third-party consulting firms or other parties. Any such consolidation, acquisition, alliance or cooperative relationship could adversely affect our ability to compete effectively and lead to pricing pressure and our loss of market share and could result in a competitor with greater financial, technical, marketing, service and other resources, all of which could harm our business, financial condition, cash flows and results of operations.

We are dependent on our connected property solutions, and the lack of continued market acceptance of our connected property solutions would result in lower revenue.

Our connected property solutions account for substantially all of our revenue and will continue to do so for the foreseeable future. As a result, our revenue could be reduced by:

- any decline in demand for our connected property solutions;
- the failure of our connected property solutions to achieve continued market acceptance;
- the introduction of products and technologies that serve as a replacement or substitute for, or represent an improvement over, our connected property solutions;
- technological innovations or new communications standards that our connected property solutions do not address; and
- our inability to release enhanced versions of our connected property solutions on a timely basis.

We are vulnerable to fluctuations in demand for Internet-connected devices in general and interactive security systems in particular. If the market for connected home and commercial solutions grows more slowly than anticipated or if demand for connected home and commercial solutions does not grow as quickly as anticipated, whether as a result of competition, product obsolescence, technological change, unfavorable economic conditions, uncertain geopolitical environments, budgetary constraints of our consumers or other factors, we may not be able to continue to increase our revenue and earnings and our stock price would decline.

A significant decline in our SaaS and license revenue renewal rate would have an adverse effect on our business, financial condition, cash flows and results of operations.

We generally bill our service provider partners based on the number of subscribers they have on our platforms and the features being utilized by subscribers on a monthly basis in advance. Subscribers could elect to terminate our services in any given month. If our efforts and our service provider partners' efforts to satisfy our existing subscribers are not successful, we may not be able to retain them or sell additional functionality to them and, as a result, our revenue and ability to grow could be adversely affected. We track our SaaS and license revenue renewal rate on an annualized basis, as reflected in the section of this Annual Report titled "Management's Discussion and Analysis of Financial Condition and Results of Operations — Other Business Metrics — SaaS and License Revenue Renewal Rate." However, our service provider partners, who resell our services to our subscribers, have indicated that they typically have three to five-year service contracts with our subscribers. Our SaaS and license revenue renewal rate is calculated across our entire subscriber base, including subscribers whose contract with their service provider reached the end of its contractual term during the measurement period, as well as subscribers whose contract with their service provider has not reached the end of its contractual term during the measurement period, and is not intended to estimate the rate at which our subscribers renew their contracts with our service provider partners. As a result, we may not be able to accurately predict future trends in renewals and the resulting churn. Subscribers may choose not to renew their contracts for many reasons, including the belief that our service is not required for their needs or is otherwise not cost-effective, a desire to reduce discretionary spending, or a belief that our competitors' services provide better value. Additionally, our subscribers may not renew for reasons entirely out of our control, such as moving a residence or the dissolution of their business, which is particularly common for small to mid-sized businesses. A significant increase in our churn would have an adverse effect on our business, financial condition, cash flows or results of operations.

If we are unable to develop new solutions, sell our platforms and solutions into new markets or further penetrate our existing markets, our revenue may not grow as expected.

Our ability to increase sales will depend, in large part, on our ability to enhance and improve our platforms and solutions, introduce new solutions in a timely manner, sell into new markets and further penetrate our existing markets. The success of any enhancement or new solution or service depends on several factors, including the timely completion, introduction and market acceptance of enhanced or new solutions, the ability to maintain and develop relationships with service providers, the ability to attract, retain and effectively train sales and marketing personnel and the effectiveness of our marketing programs. Any new product or service we develop or acquire may not be introduced in a timely or cost-effective manner, and may not achieve the broad market acceptance necessary to generate significant revenue. Any new markets into which we attempt to sell our platforms and solutions, including new vertical markets and new countries or regions, may not be receptive. Our ability to further penetrate our existing markets depends on the quality, availability and reliability of our platforms and solutions and our ability to design our platforms and solutions to meet consumer demand.

We benefit from integration of our solutions with third-party platform providers. If these developers choose not to partner with us, or are acquired by our competitors, our business and results of operations may be harmed.

Our solutions are incorporated into the hardware of our third-party platform providers. For example, our hardware platform partners produce control devices that deliver our platform services to subscribers. It may be necessary in the future to renegotiate agreements relating to various aspects of these solutions or other third-party solutions. The inability to easily integrate with, or any defects in or disruption in the supply or availability of, any third-party solutions could result in increased costs, or in delays in new product releases or updates to our existing solutions until such issues have been resolved, which could have a material adverse effect on our business, financial condition, cash flows, results of operations and future prospects and could damage our reputation. In addition, if these third-party solution providers choose not to partner with us, choose to integrate their solutions with our competitors' platforms, or are unable or unwilling to update their solutions, our business, financial condition, cash flows and results of operations could be harmed. Further, if third-party solution providers that we partner with or that we would benefit from partnering with are acquired by our competitors, they may choose not to offer their solutions on our platforms, which could adversely affect our business, financial condition, cash flows and results of operations.

We rely on wireless carriers to provide access to wireless networks through which we provide our wireless alarm, notification and intelligent automation services, and any interruption of such access would impair our business.

We rely on wireless carriers 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, or may discontinue or sunset older wireless networks as new technology evolves. For example, certain cellular carriers have announced their intention to shut down their 3G and CDMA wireless networks by the end of 2022 which may require our subscribers to upgrade to alternative and potentially more expensive, technologies. See "The technology we employ may become obsolete, and we may need to incur significant capital expenditures to update our technology" below. Any suspension or other interruption of services would adversely affect our ability to provide our services to our service provider partners and subscribers and may adversely affect our reputation. In addition, the inability to provide uninterrupted services, maintain our existing contracts with our wireless carriers or enter into new contracts with such wireless carriers could have a material adverse effect on our business, financial condition, cash flows and results of operations.

If we are unable to adapt to technological change, including maintaining compatibility with a wide range of devices, our ability to remain competitive could be impaired.

The market for connected home and commercial solutions is characterized by rapid technological change, frequent introductions of new products and evolving industry standards. Our ability to attract new subscribers and increase revenue from existing subscribers will depend in significant part on our ability to anticipate changes in industry standards, to continue to enhance our existing solutions or introduce new solutions on a timely basis to keep pace with technological developments, and to maintain compatibility with a wide range of connected devices in residential and commercial properties. We may change aspects of our platforms and may utilize open source technology in the future, which may cause difficulties including compatibility, stability and time to market. The success of this or any enhanced or new product or solution will depend on several factors, including the timely completion and market acceptance of the enhanced or new product or solution. Similarly, if any of our competitors implement new technologies before we are able to implement them, those competitors may be able to provide more effective products than ours, possibly at lower prices. Any delay or failure in the introduction of new or enhanced solutions could harm our business, financial condition, cash flows and results of operations.

The technology we employ may become obsolete, and we may need to incur significant capital expenditures to update our technology.

Our industry is characterized by rapid technological innovation. Our platforms and solutions interact with the hardware and software technology of systems and devices located at our subscribers' properties and we depend upon cellular, broadband and other telecommunications providers to provide communication paths to our subscribers in a timely and efficient manner. We may be required to implement new technologies or adapt existing technologies in response to changing market conditions, consumer preferences or industry standards, which could require significant capital expenditures. The discontinuation of cellular communication technology, cellular networks or other services by telecommunications service providers can affect our services and require our subscribers to upgrade to alternative and potentially more expensive, technologies. For example, certain cellular carriers have announced their intention to shut down their 3G and CDMA wireless networks by the end of 2022. We intend to work with our service providers to develop a transition plan over the next three years to convert or upgrade the equipment of end user accounts reliant upon 3G or CDMA networks, and we expect to incur incremental costs over the next three years related to the planned 3G and CDMA network shutdown. If our service providers are not able to convert or upgrade the equipment of their customers who are currently using 3G or CDMA network technology, then those accounts may be terminated with us when such networks are no longer available.

It is also possible that one or more of our competitors could develop a significant technical advantage that allows them to provide additional or superior quality products or services, or to lower their price for similar products or services, which could put us at a competitive disadvantage. Our inability to adapt to changing technologies, market conditions or consumer preferences in a timely manner could materially and adversely affect our business, financial condition, cash flows or results of operations.

We depend on our suppliers, and the loss of any key supplier could materially and adversely affect our business, financial condition, cash flows and results of operations.

Our hardware products depend on the quality of components that we procure from third-party suppliers. Reliance on suppliers, as well as industry supply conditions, generally involves several risks, including the possibility of defective parts, which can adversely affect the reliability and reputation of our platforms and solutions, and a shortage of components and reduced control over delivery schedules and increases in component costs, which can adversely affect our profitability. We have several large hardware suppliers from which we procure hardware on a purchase order basis, including one supplier that supplied products and components, which generated 20% of our hardware and other revenue for the year ended December 31, 2019. If these suppliers are unable to continue to provide a timely and reliable supply, we could experience interruptions in delivery of our platforms and solutions to our service provider partners, which could have a material adverse effect on our business, financial condition, cash flows and results of operations. If we were required to find alternative sources of supply, qualification of alternative suppliers and the establishment of reliable supplies could result in delays and a possible loss of sales, which could have a material adverse effect on our business, financial condition, cash flows and results of operations.

From time to time we provide advance payments or loans to our vendors to, for example, secure procurement of long lead time parts or to provide bridge financing to ensure continuity of operations. We provided such advance payments and loan financing to one of our key hardware suppliers that was repaid in 2019, whose products generated between 15% and 25% of our hardware and other revenue over the last twelve months. See Note 9 to our consolidated financial statements for more information regarding this matter.

Growth of our business will depend on market awareness and a strong brand, and any failure to develop, maintain, protect and enhance our brand would hurt our ability to retain or attract subscribers.

We believe that building and maintaining market awareness, brand recognition and goodwill in a cost-effective manner is important to our overall success in achieving widespread acceptance of our existing and future solutions and is an important element in attracting new service provider partners and subscribers. An important part of our business strategy is to increase service provider and consumer awareness of our brand and to provide marketing leadership, services and support to our service provider partner network. This will depend largely on our ability to continue to provide high-quality solutions, and we may not be able to do so effectively. While we may choose to engage in a broader marketing campaign to further promote our brand, this effort may not be successful. Our efforts in developing our brand may be hindered by the marketing efforts of our competitors and our reliance on our service provider partners and strategic partners to promote our brand. If we are unable to cost-effectively maintain and increase awareness of our brand, our business, financial condition, cash flows and results of operations could be harmed.

We operate in the emerging and evolving connected property market, which may develop more slowly or differently than we expect. If the connected property market does not grow as we expect, or if we cannot expand our platforms and solutions to meet the demands of this market, our revenue may decline, fail to grow or fail to grow at an accelerated rate, and we may incur operating losses.

The market for solutions that bring objects and systems not typically connected to the Internet, such as home automation, security monitoring, video monitoring, energy management and wellness solutions, into an Internet-like structure is in an early stage of development, and it is uncertain how rapidly or how consistently this market will develop and the degree to which our platforms and solutions will be accepted into the markets in which we operate. Some consumers may be reluctant or unwilling to use our platforms and solutions for a number of reasons, including satisfaction with traditional solutions, concerns about additional costs, concerns about data privacy and lack of awareness of the benefits of our platforms and solutions. Our ability to expand the sales of our platforms and solutions into new markets depends on several factors, including the awareness of our platforms and solutions, the timely completion, introduction and market acceptance of our platforms and solutions, the ability to attract, retain and effectively train sales and marketing personnel, the ability to develop relationships with service providers, the effectiveness of our marketing programs, the costs of our platforms and solutions and the success of our competitors. If we are unsuccessful in developing and marketing our platforms and solutions into new markets, or if consumers do not perceive or value the benefits of our platforms and solutions, the market for our platforms and solutions might not continue to develop or might develop more slowly than we expect, either of which would harm our revenue and growth prospects.

Risks of liability from our operations are significant.

The nature of the solutions we provide, including our interactive security solutions, potentially exposes us to greater risks of liability for data privacy and security, employee acts or omissions, or technology or system failure than may be inherent in other businesses. Substantially all of our service provider partner agreements contain provisions limiting our liability to service provider partners and our subscribers in an attempt to reduce this risk. However, in the event of litigation with respect to these matters, we cannot assure you that these limitations will be enforced, and the costs of such litigation could have a material adverse effect on us. Moreover, in the event of any regulatory investigations or actions against us related to these matters, we could be subject to additional risks and liabilities, including significant fines by U.S. federal and state authorities, foreign data privacy authorities in the EU, Canada, and other countries, in addition to the costs of such investigations, all of which could have a material adverse effect on us. In addition, there can be no assurance that we are adequately insured for these risks. 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.

Our strategy includes pursuing acquisitions, and our potential 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 believe part of our growth will continue to be driven by acquisitions of other companies or their technologies, assets and businesses. On March 8, 2017, we acquired Icontrol's Connect and Piper business units, and on October 21, 2019, we acquired 85% of the issued and outstanding shares of capital stock of PC Open Incorporated, doing business as OpenEye. We have acquired other businesses in the past. For example, we acquired the assets of HiValley Technology Inc. in March 2015, and we acquired certain assets of ObjectVideo, Inc. in January 2017. These acquisitions and any other acquisitions we may complete in the future will give rise to certain risks, including:

- incurring higher than anticipated capital expenditures and operating expenses;
- failing to assimilate and integrate the operations and personnel or failing to retain the key personnel of the acquired company or business;
- failing to retain customers and service providers and other third-party business partners seeking to terminate or renegotiate their relationships with us;
- failing to integrate the acquired technologies, or incurring significant expense to integrate acquired technologies into our platforms and solutions;
- disrupting our ongoing business;
- encountering complexities associated with managing a larger, more complex and growing 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 employees, service provider partners or subscribers;
- 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 we do not successfully avoid or overcome the risks or problems related to any such acquisitions, or fail to manage the acquired business or execute our integration and growth strategy in an efficient and effective manner, our business, financial condition, cash flows and results of operations 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 or businesses 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.

We may pursue business opportunities that diverge from our current business model, which may cause our business to suffer.

We may pursue business opportunities that diverge from our current business model, including but not limited to expanding our platforms and solutions and investing in new and unproven technologies. We can offer no assurance that any such new business opportunities will prove to be successful. Among other negative effects, our pursuit of such business opportunities could reduce operating margins and require more working capital, subject us to additional federal state, and local laws and regulations, materially and adversely affect our business, financial condition, cash flows or results of operations.

Evolving government and industry regulation and changes in applicable laws relating to the Internet and data privacy may increase our expenditures related to compliance efforts or otherwise limit the solutions we can offer, which may harm our business and adversely affect our financial condition.

As Internet commerce continues to evolve, federal, state or foreign agencies have adopted and could in the future adopt regulations covering issues such as user privacy and content. We are particularly sensitive to these risks because the Internet is a critical component of our SaaS business model. In addition, taxation of products or services provided over the Internet or other charges imposed by government agencies or by private organizations for accessing the Internet may be imposed. Any regulation imposing greater fees for Internet use or restricting information exchange over the Internet could result in a decline in the use of the Internet and the viability of Internet-based services, which could harm our business.

Our platforms and solutions enable us to collect, manage and store a wide range of data related to our subscribers' interactive security, intelligent automation, video monitoring, energy management and wellness systems. A valuable component of our platforms and solutions is our ability to analyze this data to present the user with actionable business intelligence. We obtain our data from a variety of sources, including our service provider partners, our subscribers and third-party providers. We cannot assure you that the data we require for our proprietary data sets will be available from these sources in the future or that the cost of such data will not increase. The United States federal government and various state governments have adopted or proposed limitations on the collection, distribution, storage and use of personal information. Several foreign jurisdictions, including the European Union and the United Kingdom, have adopted legislation (including directives or regulations) that is more rigorous governing data collection and storage than in the United States.

On June 28, 2018, the State of California enacted the California Consumer Privacy Act of 2018, or CCPA, which took effect on January 1, 2020. The CCPA governs the collection, sale and use of California residents' personal information, and significantly impacts businesses' handling of personal information and privacy policies and procedures. The CCPA, as well as data privacy laws that have been proposed in other states, may limit our ability to use, process and store certain data, which may decrease adoption of our platforms and solutions, affect our relationships with service provider partners and our suppliers, increase our costs for compliance, and harm our business, financial condition, cash flows and results of operations. In addition, the CCPA may subject us to regulatory fines by the State of California, individual claims, and increased commercial liabilities.

The United States and the European Union, or EU, have a cooperative program for transferring personal data, referred to as the Privacy Shield, that went into effect on August 1, 2016. We have self-certified our compliance with the Privacy Shield framework since September 2016 and we rely on our Privacy Shield certification when transferring personal data from the EU and Switzerland to the United States. Furthermore, in certain circumstances, we use Model Contracts to transfer personal data from the EU to the United States in compliance with the European Commission's Directive on Data Protection. However, the validity of these data transfer mechanisms is continually being challenged in EU courts. Further uncertainty may result due to the withdrawal of the United Kingdom, or UK, from the EU, which occurred on January 31, 2020. While EU law continues to apply to the UK during the transition period that ends on December 31, 2020, the UK and EU must finalize an agreement before the end of the transition period and may be unable to do so. As a result of these ongoing challenges, there will continue to be significant regulatory uncertainty surrounding the validity of data transfers from the EU and the UK to the United States. Various non-EU jurisdictions may also choose to impose data localization laws limiting the transfer of personal data out of the jurisdiction, or our European-based service provider partners may require similar contractual restrictions regarding data localization. Such laws or contractual restrictions may increase our costs for compliance, and harm our business, financial condition, cash flows and results of operations.

The EU's General Data Protection Regulation, or GDPR, went into effect on May 25, 2018. Prior to May 25, 2018, we updated existing privacy and data security measures to comply with GDPR. As guidance on compliance with GDPR from the EU data protection authorities evolves over time, our privacy or data security measures may be deemed or perceived to be in noncompliance with current or future laws and regulations, which may subject us to litigation, regulatory investigations or other liabilities and could limit the products and services we can offer in certain jurisdictions. Further, in the event of a breach of personal information that we hold, we may be subject to governmental fines, individual claims, remediation expenses and/or harm to our reputation. Moreover, if future laws and regulations limit our ability to use and share this data or our ability to store, process and share data over the Internet, demand for our platforms and solutions could decrease, our costs could increase, and our business, financial condition, cash flows and results of operations could be harmed.

Furthermore, Brazil's comprehensive privacy law, the General Data Protection Law, or LGPD, is scheduled to go into effect in August 2020. The LGPD creates a new legal framework for the use, processing and storage of Brazilians' personal data, and it adds significant privacy and security obligations for companies processing personal data in Brazil. The LGPD may limit our and our service providers' ability to use, process and store certain data, which may decrease adoption of our platforms and solutions, affect our relationships with our service provider partners and suppliers, increase our costs for compliance, and harm our business, financial condition, cash flows and results of operations. In addition, the LGPD may subject us to regulatory fines by the Brazilian Data Protection Authority and increased commercial liabilities.

Since April 2018 we have offered a solution for certain service provider partners who may be subject to the Health Insurance Portability and Accountability Act of 1996, and its implementing regulations, or HIPAA, which regulates the use and disclosure of Protected Health Information, or PHI. As a result, we are subject to HIPAA when PHI is accessed, created, maintained or transmitted through our solution by these service provider partners. We have implemented additional privacy and security policies and procedures, as well as administrative, physical and technical safeguards to enable our solution to be HIPAA compliant. Additionally, HIPAA compliance has required us to put in place certain agreements with contracting partners and to appoint a Privacy Officer and Security Officer. If our privacy and security policies or other safeguards for PHI are deemed to be in noncompliance by the United States Department of Health and Human Services, or HHS, we may be subject to litigation, regulatory investigations or other liabilities. In the event of a breach of PHI that we hold, we may be subject to governmental fines, individual claims under state privacy laws governing personal health information, remediation expenses and/or harm to our reputation. Furthermore, if future changes to HIPAA or state privacy laws governing PHI expand the definition of PHI or put more restrictions on our ability to use, process and store PHI, then HIPAA compliance for our solutions as currently constituted may be costly both financially and in terms of administrative resources. Ongoing compliance efforts may take substantial time and require the assistance of external resources, such as attorneys, information technology, and/or other consultants and advisors.

We rely on the performance of our senior management and highly skilled personnel, and if we are unable to attract, retain and motivate well-qualified employees, our business and results of operations could be harmed.

We believe our success has depended, and continues to depend, on the efforts and talents of senior management and key personnel, including Stephen Trundle, our Chief Executive Officer, and our senior information technology managers. Our future success depends on our continuing ability to attract, develop, motivate and retain highly qualified and skilled employees. Qualified individuals are in high demand, and we may incur significant costs to attract them. In addition, the loss of any of our senior management or key personnel could interrupt our ability to execute our business plan, as such individuals may be difficult to replace. If we do not succeed in attracting well-qualified employees or retaining and motivating existing employees, our business and results of operations could be harmed.

We provide minimum service level commitments to certain of our service provider partners, and our failure to meet them could cause us to issue credits for future services or pay penalties, which could harm our results of operations.

Certain of our service provider partner agreements currently, and may in the future, provide minimum service level commitments regarding items such as uptime, functionality or performance. If we are unable to meet the stated service level commitments for these service provider partners or suffer extended periods of service unavailability, we are or may be contractually obligated to provide these service provider partners with credits for future services, provide services at no cost or pay other penalties, which could adversely impact our revenue. We have incurred such penalties in the past, which have reduced our revenue. We do not currently have any reserves on our balance sheet for these commitments.

We have indemnity obligations to certain of our service provider partners for certain expenses and liabilities, which could force us to incur substantial costs.

We have indemnity obligations to certain of our service provider partners for certain claims regarding our platforms and solutions, including security breach, product recall, epidemic failure, and product liability claims. As a result, in the case of any such claims against these service provider partners, we could be required to indemnify them for losses resulting from such claims or to refund amounts they have paid to us. We expect that some of our service provider partners may seek indemnification from us in the event that such claims are brought against them. In addition, we may elect to indemnify service provider partners where we have no contractual obligation to do so and we will evaluate each such request on a case-by-case basis. If a service provider partner elects to invest resources in enforcing a claim for indemnification against us, we could incur significant costs disputing it. If we do not succeed in disputing it, we could face substantial liability.

We may be subject to significant additional liabilities as a result of the Acquisition for which we will not be indemnified.

In connection with the Acquisition, we assumed certain historic liabilities of the Connect and Piper business units, including pre-closing liabilities relating to current and former employees of the Connect and Piper business units, pre-closing compliance by the Connect and Piper business units with applicable laws and pre-closing performance by the Connect and Piper business units of the assumed contracts. In addition, we assumed any liabilities that may arise from certain pending intellectual property litigation. In addition to the known liabilities we assumed, there could be unasserted claims or assessments that we failed or were unable to discover or identify in the course of performing due diligence investigations and there may be liabilities that are neither probable nor estimable at this time which may become probable and estimable in the future. Further, while the terms of the Acquisition transaction documents provide for us to be indemnified for breaches of certain representations and warranties made about the Connect and Piper business units, the liabilities that arise may not entitle us to contractual indemnification or our contractual indemnification may not be effective. Any such liabilities, individually or in the aggregate, could have a material adverse effect on our business and our prospects.

We may not be able to secure additional financing on favorable terms, or at all, to meet our future capital needs.

In the future, we may require additional capital to respond to business opportunities, challenges, acquisitions or unforeseen circumstances and may determine to engage in equity or debt financings or enter into credit facilities for other reasons. In the future, we may not be able to timely secure debt or equity financing on favorable terms or at all. Any debt financing obtained by us 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. If we raise additional funds through further issuances of equity, convertible debt securities or other securities convertible into equity, our existing stockholders could suffer significant dilution in their percentage ownership of our company, and any new equity securities we issue could have rights, preferences and privileges senior to those of holders of our common stock. If we are unable to obtain adequate financing or financing on terms satisfactory to us, when we require it, our ability to continue to grow or support our business and to respond to business challenges could be limited.

Goodwill and other identifiable intangible assets represent a significant portion of our total assets, and we may never realize the full value of our intangible assets.

As of December 31, 2019, we had $208.4 million of goodwill and identifiable intangible assets. Goodwill and other identifiable intangible assets are recorded at fair value on the date of acquisition. We review such assets for impairment at least annually. Impairment may result from, among other things, deterioration in performance, adverse market conditions, adverse changes in applicable laws or regulations, including changes that restrict the activities of or affect the solutions we offer, challenges to the validity of certain registered intellectual property, reduced sales of certain products or services incorporating registered intellectual property, increased attrition and a variety of other factors. The amount of any quantified impairment must be expensed immediately as a charge to results of operations. Depending on future circumstances, it is possible that we may never realize the full value of our intangible assets. Any future determination of impairment of goodwill or other identifiable intangible assets could have a material adverse effect on our financial position and results of operations.

Comprehensive tax reform bills could adversely affect our business and financial condition.

The U.S. government has enacted comprehensive tax legislation that includes significant changes to the taxation of business entities. These changes include, among others, (i) a permanent reduction to the corporate income tax rate, (ii) a partial limitation on the deductibility of business interest expense, (iii) a shift of the U.S. taxation of multinational corporations from a tax on worldwide income to a territorial system (along with certain rules designed to prevent erosion of the U.S. income tax base) and (iv) a one-time tax on accumulated offshore earnings held in cash and illiquid assets, with the latter taxed at a lower rate. Notwithstanding the reduction in the corporate income tax rate, the overall impact of this tax reform is uncertain, and our business and financial condition could be adversely affected.

We may be subject to additional tax liabilities, which would harm our results of operations.

We are subject to income, sales, use, value added and other taxes in the United States and other countries in which we conduct business, which laws and rates vary greatly by jurisdiction. Certain jurisdictions in which we do not collect sales, use, value added or other taxes on our sales may assert that such taxes are applicable, which could result in tax assessments, penalties and interest, and we may be required to collect such taxes in the future. Significant judgment is required in determining our worldwide provision for income taxes. These determinations are highly complex and require detailed analysis of the available information and applicable statutes and regulatory materials. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. Although we believe our tax estimates are reasonable, the final determination of tax audits and any related litigation could be different from our historical tax practices, provisions and accruals. If we receive an adverse ruling as a result of an audit, or we unilaterally determine that we have misinterpreted provisions of the tax regulations to which we are subject, our tax provision, results of operations or cash flows could be harmed. In addition, liabilities associated with taxes are often subject to an extended or indefinite statute of limitations period. Therefore, we may be subject to additional tax liability (including penalties and interest) for a particular year for extended periods of time.

Our business is subject to the risks of earthquakes, hurricanes, fires, power outages, floods and other catastrophic events, and to interruption by man-made problems such as terrorism or global or regional economic, political and social conditions.

A significant natural disaster, such as an earthquake, hurricane, fire, flood, or a significant power outage could harm our business, financial condition, cash flows and results of operations. Natural disasters could affect our hardware vendors, our wireless carriers or our network operations centers. Further, if a natural disaster occurs in a region from which we derive a significant portion of our revenue, such as metropolitan areas in North America, consumers in that region may delay or forego purchases of our platforms and solutions from service providers in the region, which may harm our results of operations for a particular period. In addition, terrorist acts or acts of war could cause disruptions in our business or the business of our hardware vendors, service providers, subscribers or the economy as a whole. More generally, these geopolitical, social and economic conditions could result in increased volatility in worldwide financial markets and economies that could harm our sales. Given our concentration of sales during the second and third quarters, any disruption in the business of our hardware vendors, service provider partners or subscribers that impacts sales during the second or third quarter of each year could have a greater impact on our annual results. All of the aforementioned risks may be augmented if the disaster recovery plans for us, our service provider partners and our suppliers prove to be inadequate. To the extent that any of the above results in delays or cancellations of orders, or delays in the manufacture, deployment or shipment of our platforms and solutions, our business, financial condition, cash flows and results of operations would be harmed.

Downturns in general economic and market conditions and reductions in spending may reduce demand for our platforms and solutions, which could harm our revenue, results of operations and cash flows.

Our revenue, results of operations and cash flows depend on the overall demand for our platforms and solutions. 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, energy costs, international trade relations and other geopolitical issues, the availability and cost of credit and the global housing and mortgage markets could cause a decrease in consumer discretionary spending and business investment and diminish growth expectations in the U.S. economy and abroad.

During weak economic times, the available pool of service providers may decline as the prospects for home building and home renovation projects diminish, which may have a corresponding impact on our growth prospects. In addition, there is an increased risk during these periods that an increased percentage of our service provider partners will file for bankruptcy protection, which may harm our reputation, revenue, profitability and results of operations. In addition, we may determine that the cost of pursuing any claim may outweigh the recovery potential of such claim. Likewise, consumer bankruptcies can detrimentally affect the business stability of our service provider partners. Prolonged economic slowdowns and reductions in new home construction and renovation projects may result in diminished sales of our platforms and solutions. Further worsening, broadening or protracted extension of the economic downturn could have a negative impact on our business, revenue, results of operations and cash flows.

If the U.S. insurance industry were to change its practice of providing incentives to homeowners for the use of alarm monitoring services, we could experience a reduction in new subscriber growth or an increase in our subscriber attrition rate.

It has been common practice in the U.S. insurance industry to provide a reduction in rates for policies written on residences that have monitored alarm systems. There can be no assurance that insurance companies will continue to offer these rate reductions. If these incentives were reduced or eliminated, new homeowners who otherwise may not feel the need for alarm monitoring services would be removed from our potential subscriber pool, which could hinder the growth of our business, and existing subscribers may choose to disconnect or not renew their service contracts, which could increase our attrition rates. In either case, our results of operations and growth prospects could be adversely affected.

Failure to comply with laws and regulations could harm our business.

We conduct our business in the United States and in various other countries. We are subject to regulation by various federal, state, local and foreign governmental agencies, including, but not limited to, agencies and regulatory bodies or authorities responsible for monitoring and enforcing product safety and consumer protection laws, data privacy and security laws and regulations, employment and labor laws, workplace safety laws and regulations, environmental laws and regulations, antitrust laws, federal securities laws and tax laws and regulations.

We are subject to the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. Travel Act, and possibly other anti-bribery laws, including those that comply with the Organization for Economic Cooperation and Development, or OECD, Convention on Combating Bribery of Foreign Public Officials in International Business Transactions and other international conventions. Anti-corruption laws are interpreted broadly and prohibit our company from authorizing, offering, or providing directly or indirectly improper payments or benefits to recipients in the public or private-sector. Certain laws could also prohibit us from soliciting or accepting bribes or kickbacks. Our company has direct government interactions and in several cases uses third-party representatives, including dealers, for regulatory compliance, sales and other purposes in a variety of countries. These factors increase our anti-corruption risk profile. We can be held liable for the corrupt activities of our employees, representatives, contractors, partners and agents, even if we did not explicitly authorize such activity. Although we have implemented policies and procedures designed to ensure compliance with anti-corruption laws, there can be no assurance that all of our employees, representatives, contractors, partners, and agents will comply with these laws and policies.

Our global operations require us to import from and export to several countries, which geographically stretches our compliance obligations. We are also subject to anti-money laundering laws such as the USA PATRIOT Act and may be subject to similar laws in other jurisdictions. Our platforms and solutions are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions regulations administered by the U.S. Treasury Department’s Office of Foreign Assets Controls. Exports of our platforms and solutions must be made in compliance with these laws and regulations. We may also be subject to import/export laws and regulations in other jurisdictions in which we conduct business. If we fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges; fines, which may be imposed on us and responsible employees or managers; and, in extreme cases, the incarceration of responsible employees or managers. In addition, if our service provider partners fail to obtain appropriate import, export or re-export licenses or authorizations, we may also be adversely affected through reputational harm and penalties. Obtaining the necessary authorizations, including any required license, for a particular sale may be time-consuming, is not guaranteed and may result in the delay or loss of sales opportunities. In addition, changes in our platforms or solutions or changes in applicable export or import laws and regulations may create delays in the introduction and sale of our platforms and solutions in international markets, prevent our service provider partners with international operations from deploying our platforms and solutions or, in some cases, prevent the export or import of our platforms and solutions to certain countries, governments or persons altogether. Any change in export or import laws and regulations, shift in the enforcement or scope of existing laws and regulations, or change in the countries, governments, persons or technologies targeted by such laws and regulations, could also result in decreased use of our platforms and solutions, or in our decreased ability to export or sell our platforms and solutions to existing or potential service provider partners with international operations. Any decreased use of our platforms and solutions or limitation on our ability to export or sell our platforms and solutions would likely adversely affect our business, financial condition, cash flows and results of operations.

In addition, our software contains encryption technologies, certain types of which are subject to U.S. and foreign export control regulations and, in some foreign countries, restrictions on importation and/or use. Any failure on our part to comply with encryption or other applicable export control requirements could result in financial penalties or other sanctions under the U.S. export regulations, including restrictions on future export activities, which could harm our business and operating results. Regulatory restrictions could impair our access to technologies needed to improve our platforms and solutions and may also limit or reduce the demand for our platforms and solutions outside of the United States.

Furthermore, U.S. export control laws and economic sanctions programs prohibit the shipment of certain products and services to countries, governments and persons that are subject to U.S. economic embargoes and trade sanctions. Even though we take precautions to prevent our platforms and solutions from being shipped or provided to U.S. sanctions targets, our platforms and solutions could be shipped to those targets or provided by third-parties despite such precautions. Any such shipment could have negative consequences, including government investigations, penalties and reputational harm. Furthermore, any new embargo or sanctions program, or any change in the countries, governments, persons or activities targeted by such programs, could result in decreased use of our platforms and solutions, or in our decreased ability to export or sell our platforms and solutions to existing or potential service provider partners, which would likely adversely affect our business, financial condition, cash flows and results of operations.

Changes in laws that apply to us could result in increased regulatory requirements and compliance costs which could harm our business, financial condition, cash flows and results of operations. In certain jurisdictions, regulatory requirements may be more stringent than in the United States. Noncompliance with applicable regulations or requirements could subject us to whistleblower complaints, investigations, sanctions, settlements, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties or injunctions, suspension or debarment from contracting with certain governments or other customers, the loss of export privileges, multi-jurisdictional liability, reputational harm, and other collateral consequences. If any governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, financial condition, cash flows and results of operations could be materially harmed. In addition, responding to any action will likely result in a materially significant diversion of management’s attention and resources and an increase in defense costs and other professional fees. Enforcement actions and sanctions could further harm our business, financial condition, cash flows and results of operations.

We face many risks associated with our international business operations and our plans to expand internationally, which could harm our business, financial condition, cash flows and results of operations.

We anticipate that our efforts to operate and continue to expand our business internationally will entail additional costs and risks as we establish our international offerings and develop relationships with service provider partners to market, sell, install, and support our platforms, solutions and brand in other countries. Revenue in countries outside of North America accounted for 3%, 2% and 1% of our total revenue for each of the years ended December 31, 2019, 2018 and 2017, respectively. We have limited experience in selling our platforms and solutions in international markets outside of North America or in conforming to the local cultures, standards, or policies necessary to successfully compete in those markets, and we may be required to invest significant resources in order to do so. We may not succeed in these efforts or achieve our consumer acquisition, service provider expansion or other goals. In some international markets, consumer preferences and buying behaviors may be different, and we may use business or pricing models that are different from our traditional model to provide our platforms and solutions to consumers in those markets or we may be unsuccessful in implementing the appropriate business model. Our revenue from new foreign markets may not exceed the costs of establishing, marketing, and maintaining our international offerings. In addition, the current instability in the eurozone and parts of Asia could have many adverse consequences on our international expansion. These could include sovereign default, liquidity and capital pressures on financial institutions in other parts of the world including the eurozone, reducing the availability of credit and increasing the risk of financial sector failures and the risk of one or more eurozone member states leaving the euro, resulting in the possibility of capital and exchange controls and uncertainty about the impact of contracts and currency exchange rates.

In addition, conducting expanded international operations subjects us to additional risks that we do not generally face in our North American markets. These risks include:

- localization of our solutions, including the addition of foreign languages and adaptation to new local practices, as well as certification, registration and other regulatory requirements;
- lack of experience in other geographic markets;
- strong local competitors;
- the cost and burden of complying with, lack of familiarity with, and unexpected changes in, foreign legal and regulatory requirements, including the development of policies and procedures for different countries when requirements under privacy regulations in such countries may conflict or be inconsistent with one another;
- difficulties in managing and staffing international operations;
- increased costs due to new or potential tariffs, penalties, trade restrictions and other trade barriers;
- fluctuations in currency exchange rates or restrictions on foreign currency;
- potentially adverse tax consequences, including the complexities of transfer pricing, value added or other tax systems,

double taxation and restrictions and/or taxes on the repatriation of earnings;

- dependence on third parties, including commercial partners with whom we do not have extensive experience;
- increased financial accounting and reporting burdens and complexities;
- political, social, and economic instability, terrorist attacks, and security concerns in general; and
- reduced or varied protection for intellectual property rights in some countries.

Operating in international markets also requires significant management attention and financial resources. The investment and additional resources required to establish operations and manage growth in other countries may not produce desired levels of revenue or profitability.

Our software contains encryption technologies, certain types of which are subject to U.S. and foreign export control regulations and, in some foreign countries, restrictions on importation and/or use. Any failure on our part to comply with encryption or other applicable export control requirements could result in financial penalties or other sanctions under the U.S. export regulations, including restrictions on future export activities, which could harm our business and operating results. Regulatory restrictions could impair our access to technologies needed to improve our platforms and solutions and may also limit or reduce the demand for our platforms and solutions outside of the United States.

Enhanced United States tax, tariff, import/export restrictions, or other trade barriers may have an adverse impact on global economic conditions, financial markets and our business.

There is currently significant uncertainty about the future relationship between the United States and various other countries, including China, the European Union, Canada, and Mexico, with respect to trade policies, treaties, tariffs and customs duties, and taxes. Recently, the U.S. administration has called for significant changes to U.S. trade policy with respect to China. Additionally, we were notified by U.S. Customs and Border Protection on April 19, 2019 that certain camera products we import from China were reclassified into a product category, known as List 3, that was subject to an additional 10% import duty. We are appealing this action, but have begun paying the additional import duty while the appeal process is underway. If we are unsuccessful in our appeal, and if we are not able to pass on the increased cost to our customers, our margin on such products would decrease. On May 10, 2019, the President increased the additional import duty on List 3 products to 25%. Certain of our video camera products are included in the List 3 category. The President has also imposed an additional 15% import duty on other Chinese imports, identified in Lists 4A and 4B. The additional duties on items identified on List 4A took effect on September 1, 2019, while the implementation of additional duties on items identified on List 4B has been suspended indefinitely. We are addressing the risks related to these imposed and announced tariffs, which have affected, or have the potential to affect, at least some of our imports from China.

Between one-third to one-half of the finished goods hardware products that we sell to our customers are imported from China and could be subject to increased tariffs. Other Alarm.com finished goods hardware products that are not manufactured in China may contain subcomponents made in China that could also be subject to increased tariffs. While the additional import duties resulted in an increase to our cost of hardware revenue, these import duties had a modest impact on hardware revenue margins. If tariffs, trade restrictions, or trade barriers are expanded or interpreted by a court or governmental agency to apply to more of our products, then our exposure to future taxes and duties on such imported products and components could be significant and could have a material effect on our financial results. If our products are deemed to be subject to additional duties and taxes as determined by a court or governmental agency, we may suffer additional hardware revenue margin erosion or be required to raise our prices on certain imported products. There can be no assurance that we will not experience a disruption in our business or harm to our financial condition related to these or other changes in trade practices, and any changes to our operations or our sourcing strategy in order to mitigate any such tariff costs could be complicated, time-consuming, and costly. Furthermore, our business may be adversely affected by retaliatory trade measures taken by China and other countries, which could materially harm our business, financial condition and results of operations. Trade barriers, or the perception that any of them could be imposed, may have a negative effect on global economic conditions and the stability of global financial markets, and may significantly reduce global trade and, in particular, trade between these nations and the United States. Any of these factors could have a material adverse effect on our business, financial condition and results of operations.

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

On October 6, 2017, we entered into a $125.0 million senior secured revolving credit facility, or the 2017 Facility, with Silicon Valley Bank, or SVB, as administrative agent, PNC Bank, National Association, as documentation agent, and a syndicate of lenders. Upon entry into the 2017 Facility, we borrowed $72.0 million, which was used to repay the previously outstanding balance under our previous credit facility. The outstanding balance of the 2017 Facility was $63.0 million as of December 31, 2019. On November 30, 2018, we amended the 2017 Facility to incorporate the parameters that must be met for us to repurchase our outstanding common stock under the stock repurchase program authorized by our board of directors on November 29, 2018.

Our overall leverage and certain covenants and obligations contained in the related documentation 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 2017 Facility;
- 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 to general adverse economic and industry conditions;
- 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.

Furthermore, substantially all of our assets, including our intellectual property, secure the 2017 Facility. If an event of default under the credit agreement occurs and is continuing, SVB may request the acceleration of the related debt and foreclose on the underlying security interests.

In addition, our 2017 Facility restricts our ability to make dividend payments and requires us to maintain certain leverage ratios, which may restrict our ability to invest in future growth. Any of the foregoing could have a material adverse effect on our business, financial condition, cash flows or results of operations.

The LIBOR calculation method may change and LIBOR is expected to be phased out after 2021.

Our 2017 Facility permits interest on the outstanding principal balance to be calculated based on LIBOR, plus an applicable margin based on our consolidated leverage ratio. On July 27, 2017, the U.K. Financial Conduct Authority, or the FCA, announced that it will no longer require banks to submit rates for the calculation of LIBOR after 2021. In the meantime, actions by the FCA, other regulators or law enforcement agencies may result in changes to the method by which LIBOR is calculated. At this time, it is not possible to predict the effect of any such changes or any other reforms to LIBOR that may be enacted in the United Kingdom or elsewhere.

Our financial results may be adversely affected by changes in accounting principles applicable to us.

Our accounting policies are critical to the manner in which we present our results of operations and financial condition. Many of these policies are highly complex and involve many assumptions, estimates and judgments. A change in accounting standards or practices, in particular with respect to revenue recognition, could harm our operating results and may even affect our reporting of transactions completed before the change is effective. GAAP rules are subject to interpretation by the Financial Accounting Standards Board, or FASB, the SEC and other various bodies formed to promulgate and interpret appropriate accounting principles. For example, we adopted Accounting Standards Update No. 2016-02, "Leases (Topic 842)" or Topic 842, effective January 1, 2019, which requires lessees to recognize operating and financing lease liabilities and corresponding right-of-use assets on the balance sheet. See Note 2 to our consolidated financial statements for additional information about the impact of this accounting standard and other new accounting pronouncements. Implementation of new accounting standards could have a significant effect on our financial results, and any difficulties in implementing these pronouncements could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors’ confidence in us.

Our accounting is becoming more complex, and relies upon estimates or judgments relating to our critical accounting policies. If our accounting is erroneous or based on assumptions that change or prove to be incorrect, our operating results could fall below the expectations of securities analysts and investors, resulting in a decline in our stock price.

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes, and also to comply with many complex requirements and standards. We devote substantial resources to compliance with accounting requirements and we base our estimates on our best judgment, historical experience, information derived from third parties, and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets, liabilities, equity, revenue and expenses that are not readily apparent from other sources. However, various factors are causing our accounting to become complex. For example, as a result of our acquisition of the Connect business unit of Icontrol, we now recognize revenue relating to the delivery of software relating to the Software platform under different revenue recognition standards than those that apply to delivery of our services under the Alarm.com platforms. Ongoing evolution of our business, and any future acquisitions, may compound these complexities. Our operating results may be adversely affected if we make accounting errors or our judgments prove to be wrong, assumptions change or actual circumstances differ from those in our assumptions, which could cause our operating results to fall below the expectations of securities analysts and investors or guidance we may have provided, resulting in a decline in our stock price and potential legal claims. Significant judgments, assumptions and estimates used in preparing our consolidated financial statements include those related to revenue recognition, stock-based compensation, business combinations, and income taxes.

Risks Related to Our Intellectual Property

If we fail to protect our intellectual property and proprietary rights adequately, our business could be harmed.

We believe that our proprietary technology is essential to establishing and maintaining our leadership position. We seek to protect our intellectual property through trade secrets, copyrights, confidentiality, non-compete and nondisclosure agreements, patents, trademarks, domain names and other measures, some of which afford only limited protection. We also rely on patent, trademark, trade secret and copyright laws to protect our intellectual property. Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy aspects of our technology or to obtain and use information that we regard as proprietary. Our means of protecting our proprietary rights may not be adequate or our competitors may independently develop similar or superior technology, or design around our intellectual property. In addition, the laws of some foreign countries do not protect our proprietary rights to as great an extent as the laws of the United States. Intellectual property protections may also be unavailable, limited or difficult to enforce in some countries, which could make it easier for competitors to capture market share. Our failure or inability to adequately protect our intellectual property and proprietary rights could harm our business, financial condition, cash flows and results of operations.

To prevent substantial unauthorized use of our intellectual property rights, it may be necessary to prosecute actions for infringement and/or misappropriation of our proprietary rights against third parties. See the section of this Annual Report titled "Legal Proceedings" for additional information on related intellectual property litigation matters. Any such action could result in significant costs and diversion of our resources and management's attention, and we cannot assure you that we will be successful in such action. Furthermore, many of our current and potential competitors have the ability to dedicate substantially greater resources to enforce their intellectual property rights than we do. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property.

An assertion by a third party that we are infringing its intellectual property could subject us to costly and time-consuming litigation or expensive licenses that could harm our business and results of operations.

The industries in which we compete are characterized by the existence of a large number of patents, copyrights, trademarks and trade secrets, and by frequent litigation based on allegations of infringement or other violations of intellectual property rights. We have been involved with patent litigation suits in the past and we may be involved with and subject to similar litigation in the future to defend our intellectual property position. For example, on June 2, 2015, Vivint filed a lawsuit against us in U.S. District Court, District of Utah, alleging that our technology directly and indirectly infringes six patents that Vivint purchased. Vivint is seeking permanent injunctions, enhanced damages and attorneys' fees. Should Vivint prevail on its claims that one or more elements of our solution infringe one or more of its patents, we could be required to pay damages of Vivint’s lost profits and/or a reasonable royalty for sales of our solution, enjoined from making, using, and selling our solution if a license or other right to continue selling such elements is not made available to us or we are unable to design around such patents, and required to pay ongoing royalties and comply with unfavorable terms if such a license is made available to us. While we believe we have valid defenses to Vivint’s claims, any of these outcomes could result in a material adverse effect on our business.

In addition, on October 22, 2019, EcoFactor, filed a complaint with the ITC, and on November 22, 2019, the ITC instituted an investigation into EcoFactor’s allegations, naming us, among several others, as respondents, alleging with respect to Alarm.com that Alarm.com’s smart thermostats infringe three U.S. patents owned by EcoFactor. EcoFactor is seeking a permanent limited exclusion order and permanent cease and desist order. On November 11, 2019, EcoFactor filed a lawsuit against us in the U.S.

District Court, District of Massachusetts, alleging infringement of the same three patents asserted against us in the ITC, seeking permanent injunctions, enhanced damages and attorneys' fees. On January 31, 2020, EcoFactor filed a lawsuit against us in the U.S. District Court for the Western District of Texas, alleging Alarm.com's products and services infringe four additional U.S. patents owned by EcoFactor. EcoFactor is seeking permanent injunctions, enhanced damages and attorneys' fees. See the section of this Annual Report titled "Legal Proceedings" for additional information on each of these matters. Should EcoFactor prevail in the ITC investigation, Alarm.com thermostats made abroad could be excluded from importation into the United States. Should EcoFactor prevail in either of its district court lawsuits we could be required to pay damages in the amount of EcoFactor's lost profits and/or a reasonable royalty for sales of our solution, we could be enjoined from making, using and selling our solution if a license or other right to continue selling such elements is not made available to us or we are unable to design around such patents, and we could be required to pay ongoing royalties and comply with unfavorable terms if such a license is made available to us. While we believe we have valid defenses to EcoFactor's claims, any of these outcomes could result in a material adverse effect on our business.

Even if we were to prevail in any of these matters, ongoing litigation could continue to be costly and time-consuming, divert the attention of our management and key personnel from our business operations and dissuade potential customers from purchasing our solution, which would also materially harm our business. During the course of each of these litigation matters, we anticipate announcements of the results of hearings and motions, and other interim developments related to the litigation matters at hand. If securities analysts or investors regard these announcements as negative, the market price of our common stock may decline.

We might not prevail in any intellectual property infringement litigation given the complex technical issues and inherent uncertainties in such litigation and our service provider partner contracts may require us to indemnify them against certain liabilities they may incur as a result of our infringement of any third party intellectual property. Defending such claims, regardless of their merit, could be time-consuming and distracting to management, result in costly litigation or settlement, cause development delays or require us to enter into royalty or licensing agreements. In addition, we currently have a limited portfolio of issued patents compared to our larger competitors, and therefore may not be able to effectively utilize our intellectual property portfolio to assert defenses or counterclaims in response to patent infringement claims or litigation brought against us by third parties. Further, litigation may involve patent holding companies or other adverse patent owners who have no relevant products or revenues and against which our potential patents provide no deterrence, and many other potential litigants have the capability to dedicate substantially greater resources to enforce their intellectual property rights and to defend claims that may be brought against them. Given that our platforms and solutions integrate with many aspects of a property, the risk that our platforms and solutions may be subject to these allegations is exacerbated. As we seek to extend our platforms and solutions, we could be constrained by the intellectual property rights of others. If our platforms and solutions exceed the scope of in-bound licenses or violate any third party proprietary rights, we could be required to withdraw those solutions from the market, re-develop those solutions or seek to obtain licenses from third parties, which might not be available on reasonable terms or at all. Any efforts to re-develop our platforms and solutions, obtain licenses from third parties on favorable terms or license a substitute technology might not be successful and, in any case, might substantially increase our costs and harm our business, financial condition, cash flows and results of operations. If we were compelled to withdraw any of our platforms and solutions from the market, our business, financial condition, cash flows and results of operations could be harmed.

We have indemnity obligations to certain of our service provider partners for certain expenses and liabilities resulting from intellectual property infringement claims regarding our platforms and solutions, which could force us to incur substantial costs.

We have indemnity obligations to certain of our service provider partners for intellectual property infringement claims regarding our platforms and solutions. As a result, in the case of infringement claims against these service provider partners, we could be required to indemnify them for losses resulting from such claims or to refund amounts they have paid to us. We expect that some of our service provider partners may seek indemnification from us in connection with infringement claims brought against them. In addition, we may elect to indemnify service provider partners where we have no contractual obligation to indemnify them and we will evaluate each such request on a case-by-case basis. If a service provider partner elects to invest resources in enforcing a claim for indemnification against us, we could incur significant costs disputing it. If we do not succeed in disputing it, we could face substantial liability. See the section of this Annual Report titled "Legal Proceedings" for additional information.

The use of open source software in our platforms and solutions may expose us to additional risks and harm our intellectual property.

Some of our platforms and solutions use or incorporate software that is subject to one or more open source licenses and we may incorporate open source software in the future. Open source software is typically freely accessible, usable and modifiable. Certain open source software licenses require a user who intends to distribute the open source software as a component of the user's software to disclose publicly part or all of the source code to the user's software. In addition, certain open source software licenses require the user of such software to make any derivative works of the open source code available to others on potentially unfavorable terms to us or at no cost.

The terms of many open source licenses to which we are subject have not been interpreted by U.S. or foreign courts, and accordingly there is a risk that those licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to commercialize our platforms and solutions. In that event, we could be required to seek licenses from third parties in order to continue offering our platforms and solutions, to re-develop our platforms and solutions, to discontinue sales of our platforms and solutions or to release our proprietary software code under the terms of an open source license, any of which could harm our business. Further, given the nature of open source software, it may be more likely that third parties might assert copyright and other intellectual property infringement claims against us based on our use of these open source software programs. Litigation could be costly for us to defend, have a negative effect on our business, financial condition, cash flows and results of operations or require us to devote additional research and development resources to change our solutions.

Although we are not aware of any use of open source software in our platforms and solutions that would require us to disclose all or a portion of the source code underlying our core solutions, it is possible that such use may have inadvertently occurred in deploying our platforms and solutions. Additionally, if a third party software provider has incorporated certain types of open source software into software we license from such third party for our platforms and solutions without our knowledge, we could, under certain circumstances, be required to disclose the source code to our platforms and solutions. This could harm our intellectual property position as well as our business, financial condition, cash flows and results of operations.

Risks Related to Ownership of Our Common Stock

The market price of our common stock has been and will likely continue to be volatile.

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 in June 2015 at a price of $14.00 per share, our stock price has ranged from an intraday low of $10.26 to an intraday high of $71.50 through December 31, 2019. The market price of our common stock may decline regardless of our operating performance, resulting in the potential for substantial losses for our stockholders, and 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 financial condition and 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;
- variance in our financial performance from expectations of securities analysts;
- announcements by us or our competitors of significant business developments, technical innovations, acquisitions or new solutions;
- changes in the prices of our platforms and solutions;
- changes in our projected operating and financial results;
- changes in laws or regulations applicable to our platforms and solutions or marketing techniques, or our industry in general;
- our involvement in any litigation, including any lawsuits threatened or filed against us;
- repurchases of our common stock under the stock repurchase program authorized by our board of directors or our sale of our common stock or other securities in the future;
- changes in senior management or key personnel;
- trading volume of our common stock;
- changes in the anticipated future size and growth rate of our market; and

- general economic, regulatory and market conditions in the United States and abroad.

The stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry fluctuations, as well as general economic, political, regulatory and market conditions, may negatively impact the market price of our common stock. In the past, companies that have experienced volatility in the market price of their securities have been subject to securities class action litigation. We may be the target of this type of litigation in the future, which could result in substantial costs and divert our management's attention.

Sales of a substantial number of shares of our common stock in the public market could cause our market price to decline.

Sales of a substantial number of shares of our common stock in the public market, or the perception that these sales might occur, could depress the market price of our common stock and could impair our ability to raise capital through the sale of additional equity securities. We are unable to predict the effect that sales, particularly sales by our directors, executive officers, and significant stockholders, may have on the prevailing market price of our common stock. Additionally, the shares of common stock subject to outstanding options under our equity incentive plans and the shares reserved for future issuance under our equity incentive plans, as well as shares issuable upon vesting of restricted stock awards, will become eligible for sale in the public market in the future, subject to certain legal and contractual limitations. Moreover, some holders of shares of our common stock have rights, subject to certain conditions, to require us to file registration statements covering their shares or to include their shares in registration statements that we may file for ourselves or our stockholders. We have also registered shares of common stock that we may issue under our employee equity incentive plans. Accordingly, these shares may be able to be sold freely in the public market upon issuance as permitted by any applicable vesting requirements.

Our actual operating results may differ significantly from any guidance provided.

Our guidance, including forward-looking statements, is prepared by management and is qualified by, and subject to, a number of assumptions and estimates that, while presented with numerical specificity, are inherently subject to significant business, economic and competitive uncertainties and contingencies. Many of these uncertainties and contingencies are beyond our control and are based upon specific assumptions with respect to future business decisions, some of which will change. We generally state possible outcomes as high and low ranges which are intended to provide a sensitivity analysis as variables are changed but are not intended to represent that actual results could not fall outside of the suggested ranges.

Guidance is necessarily speculative in nature, and it can be expected that some or all of the assumptions of the guidance furnished by us will not materialize or will vary significantly from actual results. In particular, guidance relating to the anticipated results of operations of an acquired business is inherently more speculative in nature than other guidance as management will, necessarily, be less familiar with the business, procedures and operations of the acquired business. Accordingly, any guidance with respect to our projected financial performance is necessarily only an estimate of what management believes is realizable as of the date the guidance is given. Actual results will vary from the guidance and the variations may be material. Investors should also recognize that the reliability of any forecasted financial data will diminish the farther in the future that the data is forecasted.

Actual operating results may be different from our guidance, and such differences may be adverse and material. In light of the foregoing, investors are urged to put the guidance in context and not to place undue reliance on it. In addition, the market price of our common stock may reflect various market assumptions as to the accuracy of our guidance. If our actual results of operations fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially.

We are obligated to develop and maintain a system of effective internal controls over financial reporting. These internal controls may be determined to be not effective, which may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We have been and are required, pursuant to Section 404 of the Sarbanes-Oxley Act, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting on an annual basis. This assessment includes disclosure of any material weaknesses identified by our management in our internal control over financial reporting. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective and would be required to disclose any material weaknesses identified in Management's Report on Internal Control over Financial Reporting. While we have established certain procedures and control over our financial reporting processes, we cannot assure you that these efforts will prevent restatements of our financial statements in the future.

Our independent registered public accounting firm is also required, pursuant to Section 404 of the Sarbanes-Oxley Act, to report on the effectiveness of our internal control over financial reporting. For future reporting periods, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating. We may not be able to remediate any future material weaknesses, or to complete our evaluation, testing and any required remediation in a timely fashion.

If we are unable to conclude that our internal control over financial reporting is effective, or if our independent registered public accounting firm is unable to express an opinion that our internal controls over financial reporting are effective, investors could lose confidence in the accuracy and completeness of our financial reports, which could cause the price of our common stock to decline, and we could be subject to sanctions or investigations by regulatory authorities, including the SEC and Nasdaq. Failure to remediate any material weakness in our internal control over financial reporting, or to maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

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. We do not have any control over these analysts. If our financial performance fails to meet analyst estimates or one or more of the analysts who cover us downgrade our shares or change their opinion of our shares, 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 do not intend to pay dividends for the foreseeable future and, as a result, your ability to achieve a return on your investment will depend on appreciation in the price of our common stock.

We do not intend to 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 and subject to the restrictions on paying dividends in our 2017 Facility and any future indebtedness. 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.

Concentration of ownership among our current directors, executive officers and their affiliates may limit an investor's ability to influence significant corporate decisions.

As of December 31, 2019, our directors and executive officers, together with their affiliates, beneficially own a significant percentage of our outstanding capital stock. As a result, these stockholders, acting together, will have substantial influence over the outcome of matters submitted to our stockholders for approval, including the election of directors and approval of significant corporate transactions, such as a merger or other sale of our company or its assets. This concentration of ownership could delay, defer or prevent a change in control of the company, merger, consolidation, takeover or other business combination, which in turn could adversely affect the market price of our common stock.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us 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 amended and restated certificate of incorporation and bylaws may have the effect of delaying or preventing a change in control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

- authorize our board of directors to issue preferred stock, without further stockholder action and with voting liquidation, dividend and other rights superior to our common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent, and limit the ability of our stockholders to call special meetings;
- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting, including proposed nominations of persons for director nominees;
- establish that our board of directors is divided into three classes, with directors in each class serving three-year staggered terms;
- require the approval of holders of two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our bylaws or amend or repeal the provisions of our certificate of incorporation regarding the election and removal of directors and the ability of stockholders to take action by written consent or call a special meeting;
- prohibit cumulative voting in the election of directors; and

- provide that vacancies on our board of directors may be filled only by the vote of a majority of directors then in office, even though less than a quorum.

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. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any "interested" stockholder for a period of three years following the date on which the stockholder became an "interested" stockholder. Any of the foregoing provisions could limit the price that investors might be willing to pay in the future for shares of our common stock, and they could deter potential acquirers of our company, thereby reducing the likelihood that you would receive a premium for your common stock in an acquisition.

Our amended and restated 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 amended and restated 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 amended and restated certificate of incorporation or our amended and restated bylaws or (4) any action asserting a claim governed by the internal affairs doctrine. Notwithstanding the foregoing, this choice of forum provision will not apply to suits brought to enforce a duty or liability created by the Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts have exclusive jurisdiction. Our amended and restated certificate of incorporation 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 amended and restated certificate of incorporation may limit our stockholders' ability to obtain a favorable judicial forum for disputes with us.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our Facilities

Our principal office is located in Tysons, Virginia, where we currently occupy 166,952 square feet of commercial space under a lease we entered into in August 2014 which expires in 2026. We have previously amended our lease to expand our square footage as we continued to grow. Our Alarm.com segment uses this facility for sales and marketing, research and development, customer service and administrative purposes.

Our Alarm.com segment leases offices in Bloomington, Minnesota and Redwood City, California as well as in other locations. We also own a commercial building located in Liberty Lake, Washington. These facilities are used for sales and training, research and development, technical support, warehousing and administrative purposes.

ITEM 3. LEGAL PROCEEDINGS

On June 2, 2015, Vivint, Inc., or Vivint, filed a lawsuit against us in U.S. District Court, District of Utah, alleging that our technology directly and indirectly infringes six patents that Vivint purchased. Vivint is seeking permanent injunctions, enhanced damages and attorneys' fees. We answered the complaint on July 23, 2015. Among other things, we asserted defenses based on non-infringement and invalidity of the patents in question. On August 19, 2016, the U.S. District Court, District of Utah stayed the litigation pending inter partes review by the U.S. Patent Trial and Appeal Board, or PTAB, of five of the patents in suit. In March 2017, the PTAB issued final written decisions relating to two patents finding all challenged claims unpatentable. In May 2017, the PTAB issued final written decisions relating to the remaining three patents that found certain claims unpatentable, while certain other claims were not found to be unpatentable. Vivint appealed the decisions to the U.S. Court of Appeals for the Federal Circuit, or the Federal Circuit, and we cross-appealed. In July 2018, the Federal Circuit issued orders affirming the PTAB's March 2017 decisions that invalidated all challenged claims of two patents. The U.S. District Court, District of Utah lifted the stay on the litigation on June 26, 2017, with Vivint proceeding with its case on four of the six patents in its complaint. No trial date has been set. In September 2017, the U.S. Patent and Trademark Office, or PTO, ordered ex parte reexaminations of certain claims of two of the remaining patents in suit, at our request. On October 30, 2018 and November 5, 2018, the PTO issued final office actions in the pending reexaminations rejecting all claims being examined as unpatentable over the prior art. Vivint appealed these rejections to the PTAB on March 29, 2019 and April 4, 2019. The U.S. District Court, District of Utah has ordered the litigation regarding the nine claims (from two patents) rejected by the PTO during the reexaminations be stayed until May 15, 2020. On April 3, 2019, the U.S. District Court, District of Utah heard argument on the parties' cross motions for claim construction and Alarm.com's motion for partial summary judgment as to invalidity. Decisions on these motions are pending. On December 20, 2018, the Federal Circuit issued an order regarding the inter partes review of three of the remaining patents in suit that vacated, reversed and remanded the PTAB's ruling with regard to the construction of a term ("communication device identification code") as requested by Alarm.com and affirmed the PTAB's May 2017 rulings invalidating certain of the Vivint patents in all other respects. On July 24, 2019, the PTAB issued further decisions with respect to two of the remaining patents in suit, finding additional claims unpatentable in view of the Federal Circuit's December 20, 2018 decision. One of the claims asserted in the litigation was found unpatentable in the July 14, 2019 decisions, and the U.S. District Court, District of Utah has stayed the proceedings with respect to that claim until May 15, 2020. Vivint appealed the July 24, 2019 decisions to the Federal Circuit on September 25, 2019.

Should Vivint prevail in proving Alarm.com infringes one or more of its patent claims, we could be required to pay damages of Vivint's lost profits and/or a reasonable royalty for sales of our solution. Since all remaining patent claims in the litigation have expired, Vivint shall not be entitled to injunctive relief as a remedy in this matter. While we believe we have valid defenses to Vivint's claims, any of these outcomes could result in a material adverse effect on our business. Even if we were to prevail, this litigation could continue to be costly and time-consuming, divert the attention of our management and key personnel from our business operations and dissuade potential customers from purchasing our solution, which would also materially harm our business. During the course of litigation, we anticipate announcements of the results of hearings and motions, and other interim developments related to the litigation. If securities analysts or investors regard these announcements as negative, the market price of our common stock may decline.

On April 25, 2017, Alarm.com Incorporated and its wholly-owned subsidiary ICN Acquisition, LLC, filed a patent infringement complaint against Protect America, Inc., or Protect America, and SecureNet Technologies, LLC, or SecureNet, in the United States District Court for the Eastern District of Virginia. The complaint sought injunctive relief to stop the further sale of the infringing Protect America and SecureNet products and systems, and damages for the infringement of Alarm.com's patents. The complaint asserted that the technology in the Protect America and SecureNet Alarm Systems products infringe one or more claims of Alarm.com's patents: United States Patent Numbers 7,113,090; 7,633,385; 8,395,494; 8,493,202; 8,612,591; 8,860,804; and 9,141,276. In June 2017, Alarm.com filed an amended complaint against Protect America only in the Western District of Texas and voluntarily dismissed SecureNet from the suit. In December 2019, Alarm.com entered into a confidential settlement agreement with Protect America which resulted in the dismissal of the lawsuit without prejudice.

On October 22, 2019, EcoFactor, Inc., or EcoFactor, filed a complaint with the U.S. International Trade Commission, or ITC, naming Alarm.com Incorporated and Alarm.com Holdings, Inc., among others, as proposed respondents. The complaint alleges that Alarm.com's smart thermostats infringe three U.S. patents owned by EcoFactor. EcoFactor is seeking a permanent limited exclusion order and permanent cease and desist order. On November 22, 2019, the ITC instituted an investigation into EcoFactor's allegations naming Alarm.com Incorporated, Alarm.com Holdings, Inc. and others as respondents. We answered the complaint on December 19, 2019. Among other things, we asserted defenses based on non-infringement and invalidity of the patents in question. The administrative law judge presiding over the investigation has set March 15, 2021 as the target date for completion of the investigation. The evidentiary hearing is scheduled to begin on July 21, 2020.

On November 11, 2019, EcoFactor filed a lawsuit against us in U.S. District Court, District of Massachusetts, alleging infringement of the same three patents asserted against us in the ITC. EcoFactor is seeking permanent injunctions, enhanced damages and attorneys' fees. On December 26, 2019, the court issued an order staying the lawsuit pending the conclusion of the related ITC investigation.

On January 31, 2020, EcoFactor filed a second lawsuit against us in U.S. District Court, Western District of Texas, alleging Alarm.com's products and services infringe four additional U.S. patents owned by EcoFactor. EcoFactor is seeking permanent injunctions, enhanced damages and attorneys' fees. Our response to the complaint is due on March 5, 2020.

Should EcoFactor prevail in the ITC investigation, Alarm.com thermostats manufactured abroad could be excluded from importation into the United States. Should EcoFactor prevail in its district court lawsuits we could be required to pay damages and/or a reasonable royalty for sales of our solution, we could be enjoined from making, using and selling our solution if a license or other right to continue selling such elements is not made available to us, and we could be required to pay ongoing royalties and comply with unfavorable terms if such a license is made available to us. While we believe we have valid defenses to EcoFactor's claims, the outcome of these legal claims cannot be predicted with certainty and any of these outcomes could result in an adverse effect on our business.

On December 30, 2015, a putative class action lawsuit was filed against us in the U.S. District Court for the Northern District of California, or the Court, which alleged violations of the Telephone Consumer Protection Act, or TCPA, and sought to hold us responsible for the marketing activities of one of our service providers as well as telemarketing calls made by one of this service provider's sub-dealer agents under principles of agency and vicarious liability. On August 30, 2018, we reached an agreement in principle to settle the case for total cash consideration of $28.0 million. On October 25, 2018, we entered into a definitive settlement agreement, or Settlement Agreement, and submitted it to the Court for approval. The Court granted preliminary approval of the Settlement Agreement on December 19, 2018 and final approval on August 13, 2019.

In entering into the definitive settlement agreement, we made no admission of liability. Pursuant to the Settlement Agreement, among other things, (1) we agreed to pay total cash consideration of $28.0 million into a settlement fund, (2) we agreed to implement certain business practice changes to increase awareness of TCPA compliance, (3) each party to the Settlement Agreement agreed to a mutual release of claims relating to any claim or potential claim relating to the marketing activities described in the complaint, and (4) each party covenanted not to sue the other with regard to the released claims. In addition, we agreed to no longer allow the service provider identified in the litigation as purportedly violating the TCPA to continue activating new accounts for Alarm.com products and services following preliminary Court approval of the Settlement Agreement.

We made an initial payment of $5.0 million to the settlement administrator on January 2, 2019, and the remaining payment of $23.0 million was made on September 30, 2019. The release of claims includes all alleged damages incurred related to the lawsuit. Any attorneys' fees awarded by the Court and all costs of notice and claims administration will be paid from the settlement fund. We currently expect all distributions to be completed by August 2020.

In addition to the matters described above, we may be required to provide indemnification to certain of our service provider partners for certain claims regarding our solutions. For example, we are incurring costs associated with the indemnification of our service provider ADT, LLC in two ongoing patent infringement suits: Applied Capital, Inc. v. The ADT Corporation et al. and Varatec, LLC v. ADT, LLC.

On July 13, 2016, Applied Capital, Inc., or Applied Capital, filed a lawsuit against ADT, LLC, the ADT Corporation, and Icontrol Networks, Inc. in U.S. District Court, the District of New Mexico. *Applied Capital, Inc v. The ADT Corporation et al.*, D. New Mexico Case No. 1-16-cv-00815. Icontrol was dismissed without prejudice on May 22, 2017. Applied Capital alleges that ADT's sales of ADT Pulse directly and indirectly infringes U.S. Patent Nos. 8,378,817 and 9,728,082, which were allegedly purchased by Applied Capital. Applied Capital is seeking damages and attorneys' fees. ADT answered Applied Capital's amended complaint on July 16, 2018. Among other things, ADT has asserted defenses based on non-infringement and invalidity of the patents-in-suit. On April 5, 2019, Applied Capital filed a lawsuit for breach of contract against Rodney Fox, the inventor of the patents-in-suit, in the Second Judicial District Court, County of Bernalillo in New Mexico State Court (No. D-202-CV-2019-02841). Mr. Fox counterclaimed, alleging that he is the rightful owner of the patents-in-suit. Based on the dispute of ownership, on October 15, 2019, ADT filed a motion to stay in this matter pending its resolution. Applied Capital and Mr. Fox reached settlement and stipulated to dismissal of the New Mexico State Court action on October 31, 2019. The court issued its claim construction order on August 12, 2019, fact discovery closed on November 12, 2019, and the parties served opening expert reports on December 16, 2019. Rebuttal expert reports are due on February 10, 2020 and expert discovery closes on February 28, 2020. Applied Capital filed its Second Amended Complaint on January 27, 2020 and ADT answered, adding a claim of inequitable conduct, on February 10, 2020. The pretrial conference is scheduled for August 5, 2020; however, the trial date has not yet been set.

On March 4, 2019, Varatec, LLC, or Varatec, sued ADT, LLC d/b/a ADT Security Services in U.S. District Court for the Northern District of Illinois. *Varatec, LLC v. ADT, LLC d/b/a ADT Security Services*, N.D. Illinois Case No. 1-19-cv-01543. Varatec alleges that ADT's sales of ADT Pulse directly and indirectly infringe U.S. Patent No. 7,792,256, which was assigned to Varatec. Varatec seeks a permanent injunction, enhanced damages, and attorneys' fees. On May 23, 2019, ADT filed a motion seeking to dismiss the complaint for failure to state a claim, on the basis that the asserted patent fails to claim patent eligible subject matter. On July 3, 2019, third-party Unified Patents Inc. filed a petition seeking inter parties review of the asserted patent by the PTAB. After the completion of briefing of ADT's motion to dismiss, the parties agreed to stay the case pending resolution of the inter partes review, and the court granted the parties' motion on August 14, 2019. Unified Patent's petition for inter parties review was instituted on December 31, 2019 and Varatec's response is due on March 23, 2020. The stay remains in place.

Should either Applied Capital or Varatec prevail on the claims that one or more elements of ADT's products infringe, we could be required to indemnify ADT for damages in the form of a reasonable royalty or ADT could be enjoined from making, using and selling our solution if a license or other right to continue selling our technology is not made available to us or we are unable to design around such patents, and required to pay ongoing royalties and comply with unfavorable terms if such a license is made available to us. The outcome of these legal claims cannot be predicted with certainty.

We may also be a party to litigation and subject to claims incident to the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we currently believe that the final outcome of these ordinary course matters will not have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II.

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock commenced trading on The Nasdaq Global Select Market on June 26, 2015 and trades under the symbol “ALRM.” Prior to June 26, 2015, there was no public market for our common stock. On February 18, 2020, the closing price of our common stock on The Nasdaq Global Select Market was $47.28 per share.

Holders

As of February 18, 2020, there were 46 stockholders of record of our common stock, one of which is Cede & Co., a nominee for Depository Trust Company, or DTC. All of the shares of common stock held by brokerage firms, banks and other financial institutions as nominees for beneficial owners are deposited into participant accounts at DTC, and are considered to be held of record by Cede & Co. as one stockholder.

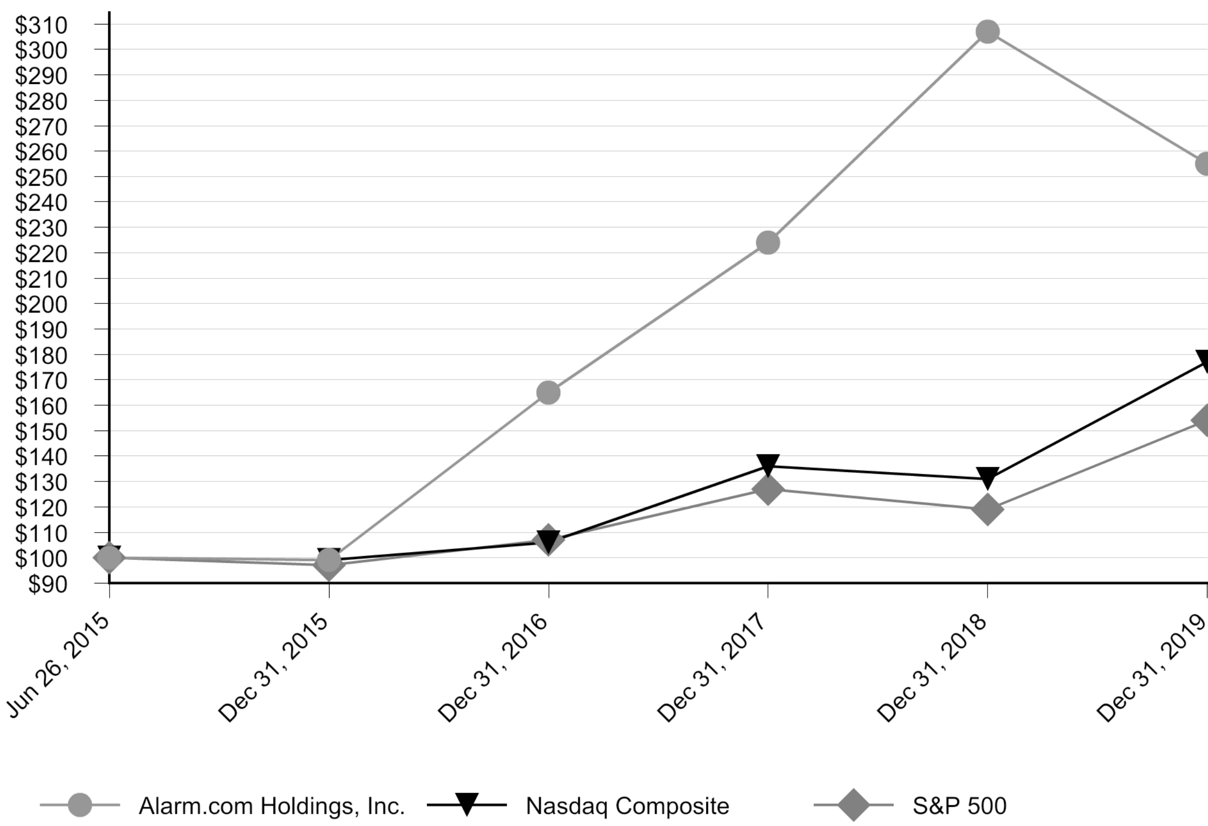
Dividends

We cannot provide any assurance that we will declare or pay cash dividends on our common stock in the future. We currently anticipate that we will retain all of our future earnings, if any, for use in the operation and expansion of our business and we do not anticipate paying cash dividends in the foreseeable future. Additionally, our ability to pay dividends on our common stock is limited by restrictions under the terms of the agreements governing our 2017 Facility with Silicon Valley Bank, as amended, as further disclosed under "Sources of Liquidity" in Part II Item 7. "Management’s Discussion and Analysis of Financial Condition and Results of Operations." Payment of future cash dividends, if any, will be at the discretion of the board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs, the requirements of current or then-existing debt instruments and other factors the board of directors deems relevant.

Stock Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act.

The following graph shows a comparison for the period June 26, 2015 (the date our common stock commenced trading on The Nasdaq Global Select Market) through December 31, 2019 of the cumulative total return for (i) our common stock, (ii) the Nasdaq Composite Index and (iii) Standard & Poor's 500 Index, or S&P 500 Index assuming an initial investment of $100 on June 26, 2015 and reinvestment of all dividends. The returns in the graph are not intended to forecast or be indicative of possible future performance of our common stock.



	June 26, 2015	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018	December 31, 2019
Alarm.com Holdings, Inc.	$ 100	$ 99	$ 165	$ 224	$ 307	$ 255
Nasdaq Composite	100	99	106	136	131	177
S&P 500	100	97	107	127	119	154

Recent Sales of Unregistered Securities

None.

Use of Proceeds

None.

Issuer Purchases of Equity Securities

The following table contains information relating to the repurchases of our common stock made by us in the quarter ended December 31, 2019:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as a Part of a Publicly Announced Program(1)	Approximate Dollar Value of Shares that May Yet Be Purchased Under the Program
October 1 to October 31, 2019	—	$ —	—	$ 75,000,000
November 1 to November 30, 2019	—	—	—	75,000,000
December 1 to December 31, 2019	—	—	—	75,000,000
Total	—	$ —	—	

(1) On November 29, 2018, our board of directors authorized a stock repurchase program, under which we are authorized to purchase up to an aggregate of $75.0 million of our outstanding common stock from time to time on the open market or in privately negotiated transactions, block trades, tender offers and by any combination of the foregoing, in accordance with federal securities laws, during the two-year period ending November 29, 2020.

ITEM 6. SELECTED FINANCIAL DATA

The selected consolidated statements of operations data for the years ended December 31, 2019, 2018 and 2017 and the selected consolidated balance sheet data as of December 31, 2019 and 2018 are derived from our audited consolidated financial statements included elsewhere in this Annual Report. The selected consolidated statements of operations data for the years ended December 31, 2016 and 2015 and the selected consolidated balance sheet data as of December 31, 2017, 2016 and 2015 are derived from our audited consolidated financial statements not included in this Annual Report. Our historical results are not necessarily indicative of the results to be expected in the future. The selected financial data should be read together with Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in conjunction with our consolidated financial statements, related notes, and other financial information included elsewhere in this Annual Report. The following tables set forth our selected consolidated financial and other data for the years ended and as of December 31, 2019, 2018, 2017, 2016 and 2015 (in thousands, except share and per share data).

Information about prior period acquisitions that may affect the comparability of the selected financial information presented below is included in Item 1. Business. Information about the $28.0 million expense recorded in general and administrative expense in 2018, which relates to the agreement reached to settle the legal matter alleging violations of the Telephone Consumer Protection Act, or TCPA, and may affect the comparability of the selected financial information presented below, is disclosed in Item 3. “Legal Proceedings.” Information about the $1.7 million of interest recorded within interest income and the $6.9 million of gain recorded within other income, net, in 2019, which relates to promissory note proceeds received from one of our hardware suppliers and proceeds from an acquired promissory note, and may affect the comparability of the selected financial information presented below, is disclosed in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Certain previously reported amounts in the consolidated statements of operations for the years ended December 31, 2018, 2017, 2016 and 2015 have been reclassified to conform to our current presentation to reflect interest income as a separate line item, which was previously included in other income, net.

Consolidated Statements of Operations Data:	Year Ended December 31, 2019	2018	2017	2016	2015
Revenue:					
SaaS and license revenue	$ 337,375	$ 291,072	$ 236,283	$ 173,540	$ 140,936
Hardware and other revenue	164,988	129,422	102,654	87,566	67,952
Total revenue	502,363	420,494	338,937	261,106	208,888
Cost of revenue(1):					
Cost of SaaS and license revenue	50,066	44,933	35,610	30,229	25,722
Cost of hardware and other revenue	133,533	100,782	80,578	69,151	51,652
Total cost of revenue	183,599	145,715	116,188	99,380	77,374
Operating expenses:					
Sales and marketing(2)	61,815	55,902	43,490	38,980	32,240
General and administrative(2)	69,959	95,750	55,396	57,926	35,473
Research and development(2)	114,443	89,204	72,755	44,272	40,002
Amortization and depreciation	22,134	21,721	17,734	6,490	5,808
Total operating expenses	268,351	262,577	189,375	147,668	113,523
Operating income	50,413	12,202	33,374	14,058	17,991
Interest expense	(2,974)	(2,918)	(2,199)	(190)	(178)
Interest income	4,922	2,272	1,031	451	283
Other income / (expense), net	6,535	143	35	62	(631)
Income before income taxes	58,896	11,699	32,241	14,381	17,465
Provision for / (benefit from) income taxes	5,566	(9,825)	2,990	4,227	5,697
Net income	53,330	21,524	29,251	10,154	11,768
Dividends paid to participating securities	—	—	—	—	(18,987)
Net loss attributable to redeemable noncontrolling interest	201	—	—	—	—
Net income allocated to participating securities	—	(3)	(13)	(12)	—
Net income / (loss) attributable to common stockholders	$ 53,531	$ 21,521	$ 29,238	$ 10,142	$ (7,219)

	Year Ended December 31, 2019	2018	2017	2016	2015
Per share information attributable to common stockholders:					
Net income / (loss) per share:					
Basic	$ 1.11	$ 0.45	$ 0.63	$ 0.22	$ (0.30)
Diluted	$ 1.06	$ 0.43	$ 0.59	$ 0.21	$ (0.30)
Weighted average common shares outstanding:					
Basic	48,427,446	47,633,739	46,682,141	45,716,757	24,108,362
Diluted	50,273,889	49,692,184	49,153,948	47,875,522	24,108,362
Cash dividends declared per share	$ —	$ —	$ —	$ —	$ 0.36

	Year Ended December 31, 2019	2018	2017	2016	2015
Other Financial and Operating Data:					
SaaS and license revenue renewal rate(3)	94%	93%	93%	94%	93%
Adjusted EBITDA(4)	$ 108,307	$ 93,081	$ 71,628	$ 49,034	$ 34,370

	As of December 31,				
	2019	2018	2017	2016	2015
Balance sheet and other data:					
Cash and cash equivalents	$ 119,629	$ 146,061	$ 96,329	$ 140,634	$ 128,358
Working capital	167,879	152,793	119,433	150,485	131,971
Total assets	557,799	440,985	371,641	261,245	226,095
Total long-term obligations	115,143	88,126	94,311	30,297	26,885
Total stockholders' equity	355,651	277,589	232,827	191,249	170,131

(1) Excludes amortization and depreciation shown in operating expenses below.

(2) Includes stock-based compensation expense as follows:

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Stock-based compensation expense data:					
Sales and marketing	$ 2,075	$ 1,196	$ 561	$ 536	$ 372
General and administrative	6,474	4,901	2,638	1,430	2,486
Research and development	12,054	7,332	4,214	2,035	1,266
Total stock-based compensation expense	$ 20,603	$ 13,429	$ 7,413	$ 4,001	$ 4,124

(3) We measure our SaaS and license revenue renewal rate on a trailing 12-month basis by dividing (a) the total SaaS and license revenue recognized during the trailing 12-month period from subscribers on our Alarm.com platform who were subscribers on the first day of the period, by (b) total SaaS and license revenue we would have recognized during the period from those same subscribers assuming no terminations, or service level upgrades or downgrades. The SaaS and license revenue renewal rate represents both residential and commercial properties. Our SaaS and license revenue renewal rate is expressed as an annualized percentage. Our service provider partners, who resell our services to our subscribers, have indicated that they typically have three to five-year service contracts with our subscribers. Our SaaS and license revenue renewal rate is calculated across our entire subscriber base on the Alarm.com platform, including subscribers whose contract with their service provider reached the end of its contractual term during the measurement period, as well as subscribers whose contract with their service provider has not reached the end of its contractual term during the measurement period, and is not intended to estimate the rate at which our subscribers renew their contracts with our service provider partners. We believe that our SaaS and license revenue renewal rate allows us to measure our ability to retain and grow our SaaS and license revenue and serves as an indicator of the lifetime value of our subscriber base.

(4) We define Adjusted EBITDA as our net income before interest expense, interest income, other income, net, provision for / (benefit from) income taxes, amortization and depreciation expense, stock-based compensation expense, acquisition-related expense and legal costs and settlement fees incurred in connection with non-ordinary course litigation and other disputes, particularly costs involved in ongoing intellectual property litigation. We do not consider these items to be indicative of our core operating performance. The non-cash items include amortization and depreciation expense and stock-based compensation expense. Included in 2015 stock-based compensation expense is $0.8 million related to the repurchase of an employee's stock awards. We do not adjust for ordinary course legal expenses resulting from maintaining and enforcing our intellectual property portfolio and license agreements. Adjusted EBITDA is not a measure calculated in accordance with accounting principles generally accepted in the United States, or GAAP. See the table below for a reconciliation of Adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

We have included Adjusted EBITDA in this report because it is a key measure that our management uses to understand and evaluate our core operating performance and trends, to generate future operating plans, to make strategic decisions regarding the allocation of capital and to make investments in initiatives that are focused on cultivating new markets for our solutions. We also use certain non-GAAP financial measures, including Adjusted EBITDA, as performance measures under our executive bonus plan. Further, we believe the exclusion of certain expenses in calculating Adjusted EBITDA facilitates comparisons of our operating performance on a period-to-period basis and, in the case of exclusion of acquisition-related expense and certain historical legal expenses, excludes items that we do not consider to be indicative of our core operating performance. Accordingly, we believe that Adjusted EBITDA provides useful information to investors and others in understanding and evaluating our operating results in the same manner as our management and board of directors.

Our use of Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under GAAP. Some of these limitations are: (a) although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and Adjusted EBITDA does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements; (b) Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs; (c) Adjusted EBITDA does not reflect the potentially dilutive impact of equity-based compensation; (d) Adjusted EBITDA does not reflect tax payments that may represent a reduction in cash available to us; and (e) other companies, including companies in our industry, may calculate Adjusted EBITDA or similarly titled measures differently, which reduces its usefulness as a comparative measure.

Because of these and other limitations, you should consider Adjusted EBITDA alongside our other GAAP-based financial performance measures, our net income and our other GAAP financial results. The following table presents a reconciliation of Adjusted EBITDA to net income, the most directly comparable GAAP measure, for each of the periods indicated (in thousands).

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Adjusted EBITDA:					
Net income	$ 53,330	$ 21,524	$ 29,251	$ 10,154	$ 11,768
Adjustments:					
Interest expense, interest income and other income, net	(8,483)	503	1,133	(323)	526
Provision for / (benefit from) income taxes	5,566	(9,825)	2,990	4,227	5,697
Amortization and depreciation expense	22,134	21,721	17,734	6,490	5,808
Stock-based compensation expense	20,603	13,429	7,413	4,001	4,124
Acquisition-related expense	2,403	—	5,895	11,098	100
Litigation expense	12,754	45,729	7,212	13,387	6,347
Total adjustments	54,977	71,557	42,377	38,880	22,602
Adjusted EBITDA	$ 108,307	$ 93,081	$ 71,628	$ 49,034	$ 34,370

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 the related notes and other financial information included elsewhere in this Annual Report. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report, including information with respect to our plans and strategy for our business, includes forward-looking statements that involve risks and uncertainties. You should review Item 1A. "Risk Factors" and "Special Note Regarding Forward-Looking Statements" in this Annual Report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

Overview

Alarm.com is the leading platform for the intelligently connected property. We offer a comprehensive suite of cloud-based solutions for smart residential and commercial properties, including interactive security, video monitoring, intelligent automation, energy management and wellness solutions. Millions of property owners depend on our technology to intelligently secure, automate and manage their residential and commercial properties. In the last year alone, our platforms processed more than 200 billion data points generated by over 100 million connected devices. We believe that this scale of subscribers, connected devices and data operations makes us the leader in the connected property market.

Our solutions are delivered through an established network of over 9,000 trusted service providers, who are experts at selling, installing and supporting our solutions. We primarily generate Software-as-a-Service, or SaaS, and license revenue through our service provider partners, who resell these services and pay us monthly fees. Our service provider partners have indicated that they typically have three to five-year service contracts with residential and commercial property owners who use our solutions. We also generate hardware and other revenue, primarily from our service provider partners and distributors. Our hardware sales include connected devices that enable our services, such as video cameras, video recorders, gateway modules and smart thermostats. We believe that the length of our service relationships with residential and commercial property owners, combined with our robust platforms and approximately 20 years of operating experience, contribute to a compelling business model.

Our technology platforms are designed to make connected properties safer, smarter and more efficient. Our solutions are used in both smart residential and commercial properties, which we refer to as the connected property market and we have designed our technology platforms for all market participants. This includes not only the residential and commercial property owners who subscribe to our services, but also the hardware partners who manufacture devices that integrate with our platforms and the service provider partners who install and maintain our solutions.

Our service provider partners can deploy our interactive security, video monitoring, intelligent automation and energy management solutions as stand-alone offerings or as combined solutions to address the needs of a broad range of customers. Our technology enables subscribers to seamlessly connect to their property through our family of mobile apps, websites, and new engagement platforms like voice control through Amazon Echo and Google Home, wearable devices like the Apple Watch, and TV platforms such as Apple TV and Amazon Fire TV.

Executive Overview and Highlights of 2019 and 2018 Results

We primarily generate SaaS and license revenue, our largest source of revenue, through our service provider partners who resell our services and pay us monthly fees. Our service provider partners sell, install and support Alarm.com solutions that enable residential and commercial property owners to intelligently secure, connect, control and automate their properties. Our service provider partners have indicated that they typically have three to five-year service contracts with residential or commercial property owners. Our subscribers consist of all of the properties maintained by those residential and commercial property owners to which we are delivering at least one of our solutions. We derive a portion of our revenue from licensing our intellectual property to third parties on a per customer basis. SaaS and license revenue represented 67%, 69% and 70% of our revenue in 2019, 2018 and 2017, respectively.

We also generate SaaS and license revenue from monthly fees charged to service providers on a per subscriber basis for access to our non-hosted software platform, or Software platform. The non-hosted software for interactive security, automation and related solutions is typically deployed and operated by the service provider in its own network operations center. Software license revenue represented 9%, 10% and 9% of our revenue in 2019, 2018 and 2017, respectively.

We also generate revenue from the sale of hardware, including video cameras, video recorders, cellular radio modules, thermostats, image sensors and other peripherals, that enables our solutions. We have a rich history of innovation in cellular technology that enables our robust SaaS offering. Our hardware and other revenue also includes our revenue from the sale of perpetual licenses that provide our customers in the commercial market the right to use our video surveillance software for an indefinite period of time in exchange for a one-time license fee. Hardware and other revenue represented 33%, 31% and 30% of our revenue in 2019, 2018 and 2017, respectively. We typically expect hardware and other revenue to fluctuate as a percentage of total revenue.

Highlights of our financial performance for the periods covered in this Annual Report include:

- SaaS and license revenue increased 16% to $337.4 million in 2019 from $291.1 million in 2018. SaaS and license revenue increased 23% to $291.1 million in 2018 from $236.3 million in 2017.
- Total revenue increased 19% to $502.4 million in 2019 from $420.5 million in 2018. Total revenue increased 24% to $420.5 million in 2018 from $338.9 million in 2017.
- Net income attributable to common stockholders was $53.5 million in 2019, $21.5 million in 2018 and $29.2 million in 2017.
- Adjusted EBITDA, a non-GAAP measurement of operating performance, increased to $108.3 million in 2019 from $93.1 million in 2018. Adjusted EBITDA increased to $93.1 million in 2018 from $71.6 million in 2017.

Please see *Non-GAAP Measures* below in this section of this Annual Report for a discussion of the limitations of Adjusted EBITDA (a non-GAAP measure) and a reconciliation of Adjusted EBITDA to net income, the most comparable GAAP measure, for the years ended December 31, 2019, 2018 and 2017.

Geographic Areas

We believe there is significant opportunity to expand our international business, as 3% of our total revenue during the year ended December 31, 2019 originated from customers located outside of North America. Our products are currently localized and available in approximately 40 countries outside of North America.

Recent Developments

On October 21, 2019, Alarm.com Incorporated, one of our wholly-owned subsidiaries, acquired 85% of the issued and outstanding capital stock of PC Open Incorporated, a Washington corporation, doing business as OpenEye. OpenEye provides cloud-managed video surveillance solutions for the enterprise commercial market. We believe the acquisition of OpenEye will provide a key element to our comprehensive suite of interactive cloud-based services spanning video, access control, intrusion and automation for domestic and international commercial enterprises.

In consideration for the purchase of 85% of the issued and outstanding capital stock of OpenEye, we paid $61.2 million in cash on October 21, 2019, after deducting $2.8 million related to an agreed holdback. Pursuant to the terms of the stock purchase agreement, following the preliminary determination of the working capital of OpenEye as of the closing date, the purchase price increased by $0.2 million. An earn-out of up to an additional $11.0 million is payable if certain calendar 2020 revenue targets are met. The purchase price allocation, which is pending until the final determination of the working capital and tax adjustments, was not finalized as of the filing date of this Annual Report on Form 10-K.

Other Business Metrics

We regularly monitor a number of financial and operating metrics in order to measure our current performance and estimate our future performance. Our other business metrics may be calculated in a manner different from the way similar business metrics used by other companies are calculated and include the following (dollars in thousands):

	Year Ended December 31,		
	2019	2018	2017
SaaS and license revenue	$ 337,375	$ 291,072	$ 236,283
Adjusted EBITDA	108,307	93,081	71,628

	Twelve Months Ended December 31,		
	2019	2018	2017
SaaS and license revenue renewal rate	94%	93%	93%

SaaS and License Revenue

We believe that SaaS and license revenue is an indicator of the productivity of our existing service provider partners and their ability to activate and maintain subscribers using our intelligently connected property solutions, our ability to add new service provider partners reselling our solutions, the demand for our intelligently connected property solutions and the pace at which the market for these solutions is growing.

Adjusted EBITDA

Adjusted EBITDA represents our net income before interest expense, interest income, other income, net, provision for / (benefit from) income taxes, amortization and depreciation expense, stock-based compensation expense, acquisition-related expense and legal costs and settlement fees incurred in connection with non-ordinary course litigation and other disputes, particularly costs involved in ongoing intellectual property litigation. We do not consider these items to be indicative of our core operating performance. The non-cash items include amortization and depreciation expense and stock-based compensation expense. We do not adjust for ordinary course legal expenses resulting from maintaining and enforcing our intellectual property portfolio and license agreements.

Adjusted EBITDA is a key measure that our management uses to understand and evaluate our core operating performance and trends to generate future operating plans, to make strategic decisions regarding the allocation of capital, and to make investments in initiatives that are focused on cultivating new markets for our solutions. In particular, the exclusion of certain expenses in calculating Adjusted EBITDA facilitates comparisons of our operating performance on a period-to-period basis and, in the case of exclusion of acquisition-related adjustments and certain historical legal expenses, excludes items that we do not consider to be indicative of our core operating performance. Adjusted EBITDA is not a measure calculated in accordance with GAAP and should not be considered in isolation from, or as a substitute for, financial information prepared in accordance with GAAP. Please see *Non-GAAP Measures* in this section for a discussion of the limitations of Adjusted EBITDA and a reconciliation of Adjusted EBITDA to net income, the most comparable GAAP measurement, for the years ended December 31, 2019, 2018 and 2017.

SaaS and License Revenue Renewal Rate

We measure our SaaS and license revenue renewal rate on a trailing 12-month basis by dividing (a) the total SaaS and license revenue recognized during the trailing 12-month period from our subscribers on our Alarm.com platform who were subscribers on the first day of the period, by (b) total SaaS and license revenue we would have recognized during the period from those same subscribers assuming no terminations, or service level upgrades or downgrades. The SaaS and license revenue renewal rate represents both residential and commercial properties. Our SaaS and license revenue renewal rate is expressed as an annualized percentage. Our service provider partners, who resell our services to our subscribers, have indicated that they typically have three to five-year service contracts with our subscribers. Our SaaS and license revenue renewal rate is calculated across our entire subscriber base on the Alarm.com platform, including subscribers whose contract with their service provider reached the end of its contractual term during the measurement period, as well as subscribers whose contract with their service provider has not reached the end of its contractual term during the measurement period, and is not intended to estimate the rate at which our subscribers renew their contracts with our service provider partners. We believe that our SaaS and license revenue renewal rate allows us to measure our ability to retain and grow our SaaS and license revenue and serves as an indicator of the lifetime value of our subscriber base.

Leases (Topic 842)

On February 25, 2016, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2016-02, "*Leases (Topic 842)*" or Topic 842, which requires lessees to recognize operating and financing lease liabilities and corresponding right-of-use, or ROU, assets on the balance sheet. The update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. In July 2018, the FASB amended the update to allow entities to apply the transition requirements of Topic 842 at the adoption date rather than at the beginning of the earliest comparative period presented. Accordingly, the amendments in Topic 842 were effective for us beginning January 1, 2019.

On January 1, 2019, we adopted Topic 842 by applying the modified retrospective approach to all of our leases in effect as of that date. We used the optional transition method, which required us to record the initial effect of Topic 842 as a cumulative-effect adjustment to retained earnings on January 1, 2019. Additionally, we elected to use the package of practical expedients for the adoption of Topic 842, which allowed us 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 existing leases qualify for capitalization under Topic 842. We also used the hindsight practical expedient when determining the lease term and assessing impairment of ROU assets.

The adoption of Topic 842 resulted in the recording of the following amounts on our consolidated balance sheets (in thousands):

Balance Sheet Caption	As of January 1, 2019
Property and equipment, net	$ 1,057
Operating lease right-of-use assets	28,432
Operating lease liabilities (current)	5,699
Operating lease liabilities (noncurrent)	36,957
Accounts payable, accrued expenses and other current liabilities	(1,548)
Other liabilities	(11,656)
Accumulated deficit	37

The adoption of Topic 842 did not materially impact our consolidated statements of operations, consolidated statement of equity and consolidated statements of cash flows.

Components of Operating Results

Our fiscal year ends on December 31. The key elements of our operating results include:

Revenue

We derive our revenue from three primary sources: the sale of cloud-based SaaS services on our integrated Alarm.com platform, the sale of licenses and services on the Software platform and the sale of hardware products. We sell our platform and hardware solutions to service provider partners that resell our solutions and hardware to residential and commercial property owners, who are the service provider partners' customers.

SaaS and License Revenue. We generate the majority of our SaaS and license revenue primarily from monthly fees charged to our service provider partners sold on a per subscriber basis for access to our cloud-based intelligently connected property platform and related solutions. Our fees per subscriber vary based upon the service plan and features utilized.

We offer multiple service level packages for our platform solutions including a range of solutions and a range of a la carte add-ons for additional features. The fee paid by our service provider partners each month for the delivery of our solutions is based on the combination of packages and add-ons enabled for each subscriber. We utilize tiered pricing plans where our service provider partners may receive prospective pricing discounts driven by volume.

We also generate SaaS and license revenue from the fees paid to us when we license our intellectual property to third parties for use of our patents. In addition, in certain markets our EnergyHub subsidiary sells its demand response service for an annual service fee, with pricing based on the number of subscribers or amount of aggregate electricity demand made available for a utility's or market's control.

Software License Revenue. Our SaaS and license revenue also includes our software license revenue from monthly fees charged to service providers sold on a per subscriber basis for access to our Software platform. The non-hosted software for interactive security, automation and related solutions is typically deployed and operated by the service provider in its own network operations center. Our agreements for the Software platform solution typically include software and services, such as post-contract customer support, or PCS.

Hardware and Other Revenue. We generate hardware and other revenue primarily from the sale of video cameras, video recorders and cellular radio modules that provide access to our cloud-based platforms and, to a lesser extent, the sale of other devices, including image sensors and peripherals. We primarily transfer hardware to our customers upon delivery to the customer, which corresponds with the time at which the customer obtains control of the hardware. We record a reserve against revenue for hardware returns based on historical returns.

Our hardware and other revenue also includes our revenue from the sale of perpetual licenses that provide our customers in the commercial market the right to use our OpenEye video surveillance software for an indefinite period of time in exchange for a one-time license fee, which is generally paid at contract inception. Hardware and other revenue may also include activation fees charged to some of our service provider partners for activation of a new subscriber account on our platforms, as well as fees paid by service provider partners for our marketing services. The decision whether to charge an activation fee is based in part on the expected number of subscribers to be added by our service provider partners and as a result, many of our largest service provider partners do not pay an activation fee.

In December 2019, a novel strain of coronavirus surfaced in Wuhan, China, which has resulted in the temporary closure of many corporate offices, retail stores, and manufacturing facilities and factories across China. We anticipate there could be some disruption to our hardware supply chain due to the impact of the coronavirus on manufacturing and production in China. However, as the potential impact on global supply chains from the coronavirus is difficult to predict, the extent to which the coronavirus may negatively affect our hardware revenue is uncertain.

Cost of Revenue

Our cost of SaaS and license revenue primarily includes the amounts paid to wireless network providers and, to a lesser extent, the costs of running our network operations centers which are expensed as incurred, as well as patent and royalty costs in connection with technology licensed from third-party providers. Our cost of SaaS and license revenue also includes our cost of software license revenue, which primarily includes the payroll and payroll-related costs of the department dedicated to providing service exclusively to those service providers that host the Software platform. Our cost of hardware and other revenue primarily includes cost of raw materials, tooling and amounts paid to our third-party manufacturer for production and fulfillment of our cellular radio modules and image sensors, and procurement costs for our video cameras and video recorders, which we purchase from an original equipment manufacturer, and other devices. Our cost of hardware and other revenue also includes royalty costs in connection with technology licensed from third-party providers.

We record the cost of SaaS and license revenue as expenses are incurred, which corresponds to the delivery period of our services to our subscribers. We record the cost of hardware and other revenue primarily when the hardware and other services are delivered to the service provider partner, which occurs when control of the hardware and other services transfers to the service provider partner. Our cost of revenue excludes amortization and depreciation shown in operating expenses.

In 2019, the U.S. administration has called for significant changes to U.S. trade policy with respect to China. Beginning in May 2019, certain of our video camera products became subject to a 25% import duty. Additionally, beginning in September 2019, certain of our video cameras and sensors became subject to a 15% import duty. Approximately one-third to one-half of the finished goods hardware products that we sell to our service provider partners are imported from China and could be subject to increased tariffs. While the additional import duties resulted in an increase to our cost of hardware revenue, these import duties had a modest impact on hardware revenue margins. We continue to monitor the changes in tariffs. If tariffs are increased or are expanded to apply to more of our products, such actions may increase our cost of hardware revenue and reduce our hardware revenue margins in the future.

Operating Expenses

Our operating expenses consist of sales and marketing, general and administrative, research and development and amortization and depreciation expenses. Salaries, bonuses, stock-based compensation, benefits and other personnel related costs are the most significant components of each of these expense categories, excluding amortization and depreciation. We include stock-based compensation expense in connection with the grant of stock options and other forms of equity compensation in the applicable operating expense category based on the respective equity award recipient’s function (sales and marketing, general and administrative or research and development). We grew from 884 employees as of January 1, 2019 to 1,160 employees as of December 31, 2019, and we expect to continue to hire new employees to support the projected future growth of our business.

Sales and Marketing Expense. Sales and marketing expense consists primarily of personnel and related expenses for our sales and marketing teams, including salaries, bonuses, stock-based compensation, benefits, travel, and commissions. Our sales and marketing teams engage in sales, account management, service provider partner support, advertising, promotion of our products and services and marketing.

The number of employees in sales and marketing functions increased from 288 as of January 1, 2019 to 391 as of December 31, 2019. We expect to continue to invest in our sales and marketing activities to expand our business both domestically and internationally and, as a result, expect our sales and marketing expense to increase on an absolute dollar basis. We intend to increase the size of our sales force and our service provider partner support team to provide additional support to our existing service provider partner base to drive their productivity in selling our solutions as well as to enroll new service provider partners in North America and in international markets.

General and Administrative Expense. General and administrative expense consists primarily of personnel and related expenses for our administrative, legal, human resources, finance and accounting personnel, including salaries, bonuses, stock-based compensation, benefits and other personnel costs. Additional expenses included in this category are legal costs, including those that are incurred to defend and license our intellectual property, as well as non-personnel costs, such as travel related expenses, rent, subcontracting and professional fees, audit fees, tax services and insurance expenses. Also included in general and administrative expenses are acquisition-related expenses, which consist primarily of legal, accounting and professional service fees directly related to acquisitions, valuation gains or losses on acquisition-related contingent liabilities.

The number of employees in general and administrative functions increased from 96 as of January 1, 2019 to 148 as of December 31, 2019. Excluding intellectual property litigation and acquisition-related costs, we expect general and administrative costs to increase prospectively as our business grows. This includes cost increases related to accounting, finance, and legal personnel, additional external legal, audit fees and other expenses associated with regulations governing public companies. While somewhat unpredictable, we also expect to continue to incur costs related to litigation involving intellectual property. See the section of this Annual Report titled "Legal Proceedings" for additional information regarding litigation matters.

Research and Development Expense. Research and development expense consists primarily of personnel and related expenses for our employees working on our product development and software and device engineering teams, including salaries, bonuses, stock-based compensation, benefits and other personnel costs. Also included are non-personnel costs such as consulting and professional fees paid to third-party development resources.

The number of employees in research and development functions grew from 500 as of January 1, 2019 to 621 as of December 31, 2019. Our research and development efforts are focused on innovating new features and enhancing the functionality of our platforms and the solutions we offer to our service provider partners and subscribers. We will also continue to invest in efforts to extend our platforms to adjacent markets and internationally. We expect research and development expenses to increase on an absolute dollar basis and as a percentage of revenue in the short term to maintain our leadership position in the development of intelligently connected property technology, and continued enhancement of our Enterprise Tools platform for our service provider partners.

Amortization and Depreciation. Amortization and depreciation consists of amortization of intangible assets originating from our acquisitions as well as our internally-developed capitalized software. Our depreciation expense is related to investments in property and equipment. Acquired intangible assets include developed technology, customer related intangibles, trademarks and trade names. We expect in the near term that amortization and depreciation may fluctuate based on our acquisition activity, development of our platforms and capitalized expenditures.

Interest Expense

Interest expense consists of interest expense associated with our credit facilities. On October 6, 2017, we entered into a $125.0 million senior secured revolving credit facility, or the 2017 Facility, with SVB, as administrative agent, PNC Bank, National Association, as documentation agent, and a syndicate of lenders. The 2017 Facility is available to us to refinance existing debt and for general corporate and working capital purposes, as permitted under the terms of the 2017 Facility. Interest expense is expected to remain relatively consistent in 2019 as compared to 2018.

Interest Income

Interest income consists of interest income earned on our cash and cash equivalents and our notes receivable.

Other Income, Net

Other income, net primarily consists of gains earned on our notes receivable and conversion of our outstanding notes receivable balance into an equity investment, partially offset by an impairment of one of our investments.

Provision for / (benefit from) income taxes

The Tax Cuts and Jobs Act was signed into law on December 22, 2017. This legislation made significant changes in U.S. tax law, including a reduction in the corporate tax rate, changes to net operating loss carryforwards and carrybacks and a repeal of the corporate alternative minimum tax. The legislation reduced the U.S. corporate income tax rate from 35% to 21%.

We are subject to U.S. federal, state and local income taxes as well as foreign income taxes. During the ordinary course of business, there are many transactions and calculations for which the ultimate tax determination is uncertain. As a result, we recognize tax liabilities based on estimates of whether additional taxes will be due. Our effective tax rates were different from the statutory rate primarily due to the tax windfall benefits from employee stock-based payment transactions, foreign derived intangible income deductions and research and development tax credits claimed, and state taxes, partially offset by the impact of non-deductible meal and entertainment expenses and state taxes. We recognize excess tax windfall benefits on a discrete basis in the quarter in which it occurs, and we anticipate that our effective tax rate will vary from quarter to quarter depending on our stock price and exercises of stock options under our equity incentive plans each period.

Results of Operations

The following table sets forth our selected consolidated statements of operations and data as a percentage of revenue for the periods presented (in thousands). Certain previously reported amounts in the consolidated statements of operations for the years ended December 31, 2018 and 2017 have been reclassified to conform to our current presentation to reflect interest income as a separate line item, which was previously included in other income, net.

Consolidated Statements of Operations

	Year Ended December 31,					
	2019		2018		2017	
	$	%	$	%	$	%
Revenue:						
SaaS and license revenue	$ 337,375	67%	$ 291,072	69%	$ 236,283	70%
Hardware and other revenue	164,988	33	129,422	31	102,654	30
Total revenue	502,363	100	420,494	100	338,937	100
Cost of revenue(1):						
Cost of SaaS and license revenue	50,066	10	44,933	11	35,610	10
Cost of hardware and other revenue	133,533	27	100,782	24	80,578	24
Total cost of revenue	183,599	37	145,715	35	116,188	34
Operating expenses:						
Sales and marketing (2)	61,815	12	55,902	13	43,490	13
General and administrative (2)	69,959	14	95,750	23	55,396	16
Research and development (2)	114,443	23	89,204	21	72,755	22
Amortization and depreciation	22,134	4	21,721	5	17,734	5
Total operating expenses	268,351	53	262,577	62	189,375	56
Operating income	50,413	10	12,202	3	33,374	10
Interest expense	(2,974)	(1)	(2,918)	(1)	(2,199)	—
Interest income	4,922	1	2,272	1	1,031	—
Other income, net	6,535	2	143	—	35	—
Income before income taxes	58,896	12	11,699	3	32,241	10
Provision for / (benefit from) income taxes	5,566	1	(9,825)	(2)	2,990	1
Net income	$ 53,330	11%	$ 21,524	5%	$ 29,251	9%

(1) Excludes amortization and depreciation shown in operating expenses below.
(2) Operating expenses include stock-based compensation expense as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Stock-based compensation expense data:			
Sales and marketing	$ 2,075	$ 1,196	$ 561
General and administrative	6,474	4,901	2,638
Research and development	12,054	7,332	4,214
Total stock-based compensation expense	$ 20,603	$ 13,429	$ 7,413

The following table sets forth the components of cost of revenue as a percentage of revenue:

	Year Ended December 31,		
	2019	2018	2017
Components of cost of revenue as a percentage of revenue:			
Cost of SaaS and license revenue as a percentage of SaaS and license revenue	15%	15%	15%
Cost of hardware and other revenue as a percentage of hardware and other revenue	81%	78%	78%
Total cost of revenue as a percentage of total revenue	37%	35%	34%

Comparison of Years Ended December 31, 2019 to December 31, 2018

The following tables in this section set forth our selected consolidated statements of operations (in thousands), data for the percentage change and data as a percentage of revenue for the years ended December 31, 2019 and 2018. Certain previously reported amounts in the consolidated statements of operations for the year ended December 31, 2018 have been reclassified to conform to our current presentation to reflect interest income as a separate line item, which was previously included in other income, net.

Revenue

	Year Ended December 31,		% Change
Revenue:	2019	2018	2019 vs. 2018
SaaS and license revenue	$ 337,375	$ 291,072	16%
Hardware and other revenue	164,988	129,422	27%
Total revenue	$ 502,363	$ 420,494	19%

The $81.9 million increase in total revenue in 2019 as compared to 2018 was the result of a $46.3 million, or 16%, increase in our SaaS and license revenue and a $35.6 million, or 27%, increase in our hardware and other revenue. Our software license revenue included within SaaS and license revenue increased $2.1 million to $43.4 million in 2019 as compared to $41.3 million during 2018. The increase in our Alarm.com segment SaaS and license revenue in 2019 was primarily due to growth in our subscriber base, including the revenue impact from subscribers we added in 2018. To a lesser extent, SaaS and license revenue increased in the period due to an increase in license fees. The increase in hardware and other revenue in 2019 compared to 2018 was due to an increase in the volume of video cameras sold. Our Other segment contributed 15% of the increase in SaaS and license revenue in 2019 as compared to 2018. The increase in SaaS and license revenue for our Other segment in 2019 as compared to 2018 was due to an increase in sales of our energy management and demand response solutions and our property management and HVAC solutions. Hardware and other revenue in our Other segment decreased 13% in 2019 as compared to 2018, primarily due to the timing of sales related to our remote access management solution.

Cost of Revenue

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Cost of revenue[(1)]:			
Cost of SaaS and license revenue	$ 50,066	$ 44,933	11%
Cost of hardware and other revenue	133,533	100,782	32%
Total cost of revenue	$ 183,599	$ 145,715	26%
% of total revenue	*37%*	*35%*	

[(1)] Excludes amortization and depreciation shown in operating expenses.

The $37.9 million increase in cost of revenue in 2019 as compared to 2018 was the result of a $32.8 million, or 32%, increase in cost of hardware and other revenue and a $5.1 million, or 11%, increase in cost of SaaS and license revenue. Our cost of software license revenue included within cost of SaaS and license revenue decreased $0.4 million to $1.3 million during 2019 as compared to $1.7 million during 2018. The increase in cost of Alarm.com segment hardware and other revenue related primarily to an increase in the number of hardware units shipped in 2019 as compared to 2018. The increase in cost of

Alarm.com segment SaaS and license revenue related primarily to the growth in our subscriber base, which drove a corresponding increase in amounts paid to wireless network providers.

Cost of hardware and other revenue as a percentage of hardware and other revenue was 81% and 78% for the years ended December 31, 2019 and 2018, respectively. Cost of SaaS and license revenue as a percentage of SaaS and license revenue was 15% for each of the years ended December 31, 2019 and 2018. Cost of software license revenue as a percentage of software license revenue was 3% and 4% for the years ended December 31, 2019 and 2018, respectively. The increase in cost of hardware and other revenue as a percentage of hardware and other revenue in 2019 as compared to 2018 is a reflection of the mix of product sales during the periods.

Sales and Marketing Expense

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Sales and marketing	$ 61,815	$ 55,902	11%
% of total revenue	*12%*	*13%*	

The $5.9 million increase in sales and marketing expense in 2019 as compared to 2018 was primarily due to increases in headcount for our sales team and service provider partner support team to support our growth. As a result, our personnel and related costs for our Alarm.com segment, including salary, benefits, stock-based compensation and travel expenses, increased by $8.1 million in 2019 as compared to 2018. Additionally, recruiting costs and costs for external consultants increased by $0.3 million in 2019 for our Alarm.com segment as compared to 2018. These increases were partially offset by a $4.2 million decrease in our marketing expense for our Alarm.com segment in 2019 as compared to 2018. Sales and marketing expense from our Other segment increased $1.4 million in 2019 as compared to 2018, primarily due to increases in headcount for our sales team. The overall number of employees in our sales and marketing teams increased from 288 as of December 31, 2018 to 391 as of December 31, 2019. Sales and marketing expense as a percentage of total revenue was 12% and 13% for the years ended December 31, 2019 and 2018, respectively.

General and Administrative Expense

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
General and administrative	$ 69,959	$ 95,750	(27)%
% of total revenue	*14%*	*23%*	

The $25.8 million decrease in general and administrative expense in 2019 as compared to 2018 was primarily due to a $31.6 million decrease in legal expenses within our Alarm.com segment resulting from a $28.0 million expense recorded during 2018 for the agreement reached to settle the legal matter alleging violations of the TCPA within our Alarm.com segment. Additionally, the decrease in general and administrative expense was due to the 2019 reversal of the $3.3 million reserve previously recorded in 2018, relating to a promissory note provided to one of our hardware suppliers within our Alarm.com segment. These decreases were partially offset by a $7.2 million increase in personnel and related costs for our Alarm.com segment due to an increase in employee headcount to support our operational growth and a $2.7 million increase in rent expense within the Alarm.com segment due in part to additional office space obtained for our corporate headquarters. General and administrative expenses from our Other segment decreased by $0.5 million in 2019 as compared to 2018, primarily due to a decrease in expense for external consultants. The overall number of employees in general and administrative functions increased from 96 as of December 31, 2018 to 148 as of December 31, 2019.

Research and Development Expense

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Research and development	$ 114,443	$ 89,204	28%
% of total revenue	*23%*	21%	

The $25.2 million increase in research and development expense in 2019 as compared to 2018 was primarily due to an increase in headcount of employees in research and development functions. Our personnel and related costs for our Alarm.com segment increased by $20.4 million in 2019 as compared to 2018 and our expenses for external consultants increased by $1.2 million. Additionally, the increase in research and development expense is due to $1.0 million of in-process research and development we acquired on September 18, 2019. Research and development expense from our Other segment decreased by $0.2 million due to a decrease in our expenses for external consultants in 2019 as compared to 2018. The overall number of employees in research and development functions increased from 500 as of December 31, 2018 to 621 as of December 31, 2019.

Amortization and Depreciation

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Amortization and depreciation	$ 22,134	$ 21,721	2%
% of total revenue	*4%*	*5%*	

Amortization and depreciation increased $0.4 million in 2019 as compared to 2018, due to customer relationships, developed technology and trade name intangibles acquired in connection with our March 2017 acquisition of certain assets and assumption of certain liabilities of the Connect line of business and all of the outstanding equity interests of the two subsidiaries through which Icontrol Networks, Inc. conducted its Piper line of business, as well as the customer relationships, developed technology and trade name intangibles acquired in connection with our October 2019 acquisition of 85% of the issued and outstanding capital stock of OpenEye. These increases are partially offset by certain intangible assets being fully amortized prior to December 31, 2019.

Interest Expense

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Interest expense	$ (2,974)	$ (2,918)	2%
% of total revenue	*(1)%*	(1)%	

Interest expense increased $0.1 million in 2019 as compared to 2018, primarily due to an increase in the effective interest rate on the 2017 Facility resulting from the increase in the Eurodollar Base Rate, or LIBOR.

Interest Income

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Interest income	$ 4,922	$ 2,272	117%
% of total revenue	*1%*	*1%*	

Interest income increased $2.7 million in 2019 as compared to 2018, primarily due to recording interest income of $1.7 million related to promissory note proceeds received from one of our hardware suppliers and proceeds from an acquired promissory note within our Alarm.com segment.

Other Income, Net

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Other income, net	$ 6,535	$ 143	4,470%
% of total revenue	*2%*	*—%*	

Other income, net increased $6.4 million during 2019 as compared to 2018, primarily due to recording a gain of $6.9 million related to promissory note proceeds received from one of our hardware suppliers and proceeds from an acquired promissory note within our Alarm.com segment, partially offset by a $0.6 million impairment of one of our investments.

Provision for / (benefit from) income taxes

	Year Ended December 31,		% Change
	2019	2018	2019 vs. 2018
Provision for / (benefit from) income taxes	$ 5,566	$ (9,825)	(157)%
% of total revenue	*1%*	*(2)%*	

The provision for income taxes increased $15.4 million in 2019 as compared to 2018. Our effective tax rate was 9.5% in 2019 as compared to (84.0)% in 2018. The increase in the provision for income taxes was primarily related to decreases in tax windfall benefits and research and development tax credits claimed, partially offset by increased foreign derived intangible income deductions claimed in 2019 as compared to 2018.

Comparison of Years Ended December 31, 2018 to December 31, 2017

A comparison of the years ended December 31, 2018 and 2017 has been omitted from this Form 10-K, but may be found in "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Form 10-K for the fiscal year ended December 31, 2018, filed with the SEC on March 1, 2019.

Quarterly Results of Operations (Unaudited)

The following table shows selected unaudited quarterly consolidated statement of operations data for each of our eight most recently completed quarters, as well as the percentage of revenue for each line item. In the opinion of management, the information for each of these quarters has been prepared on the same basis as our audited financial statements and include all adjustments, consisting of normal recurring adjustments and accruals, necessary for the fair statement of financial information in accordance with generally accepted accounting principles. This information should be read in conjunction with the audited consolidated financial statements and related notes included elsewhere in this report. Historical results are not necessarily indicative of results that may be achieved in future periods, and operating results for quarterly periods are not necessarily indicative of operating results for a full year.

The selected consolidated statements of operation data in amounts and as a percentage of total revenue are presented below (amounts in thousands):

	Mar. 31, 2018	June 30, 2018	Sept. 30, 2018	Dec. 31, 2018	Mar. 31, 2019	June 30, 2019	Sept. 30, 2019	Dec. 31, 2019
Revenue:								
SaaS and license revenue	$ 67,988	$ 70,968	$ 74,292	$ 77,824	$ 80,055	$ 82,334	$ 84,924	$ 90,062
Hardware and other revenue	24,768	33,520	37,556	33,578	32,280	39,326	42,956	50,426
Total revenue	92,756	104,488	111,848	111,402	112,335	121,660	127,880	140,488
Cost of revenue:								
Cost of SaaS and license revenue	10,806	11,027	11,501	11,599	12,325	12,665	12,438	12,638
Cost of hardware and other revenue	17,571	25,461	30,491	27,259	26,625	31,891	35,085	39,932
Total cost of revenue	28,377	36,488	41,992	38,858	38,950	44,556	47,523	52,570
Total operating expenses	$ 52,386	$ 59,490	$ 86,550	$ 64,151	$ 64,164	$ 63,059	$ 68,162	$ 72,966
Net income / (loss)	$ 10,515	$ 10,733	$ (7,652)	$ 7,928	$ 9,010	$ 13,796	$ 17,690	$ 12,834
Net income / (loss) attributable to common stockholders	$ 10,512	$ 10,732	$ (7,652)	$ 7,928	$ 9,010	$ 13,796	$ 17,690	$ 13,035
Net income / (loss) per share attributable to common stockholders								
Basic	$ 0.22	$ 0.23	$ (0.16)	$ 0.16	$ 0.19	$ 0.29	$ 0.36	$ 0.27
Diluted	$ 0.21	$ 0.22	$ (0.16)	$ 0.16	$ 0.18	$ 0.27	$ 0.35	$ 0.26
As a percent of total revenue:								
Revenue:								
SaaS and license revenue	73%	68%	66 %	70%	71%	68%	66%	64%
Hardware and other revenue	27%	32%	34 %	30%	29%	32%	34%	36%
Total revenue	100%	100%	100 %	100%	100%	100%	100%	100%
Cost of revenue:								
Cost of SaaS and license revenue	12%	11%	11 %	10%	11%	10%	10%	9%
Cost of hardware and other revenue	19%	24%	27 %	25%	24%	26%	27%	28%
Total cost of revenue	31%	35%	38 %	35%	35%	37%	37%	37%
Total operating expenses	56%	57%	77 %	57%	57%	52%	53%	52%
Net income / (loss)	11%	10%	(7)%	7%	8%	11%	14%	9%
Net income / (loss) attributable to common stockholders	11%	10%	(7)%	7%	8%	11%	14%	9%

Quarterly Trends

Our quarterly SaaS and license revenue has increased sequentially for all periods presented due to growth in our subscriber base driven by the effectiveness of our service provider partners' ability to resell our services and due to service providers and their subscribers on our Software platform. Hardware and other revenue fluctuates from quarter to quarter based on the timing of hardware orders from our service providers and hardware distributors.

The cost of revenue, in absolute dollars, has increased over time corresponding to the increase in revenue. The cost of revenue as a percent of revenue is lower in quarters when SaaS and license revenue represents a greater percentage of total revenue. Our cost of SaaS and license revenue as a percentage of SaaS and license revenue has been between 14% and 16% for all periods presented.

Operating expenses have generally increased over time. Our most significant operating expenses are employee-related costs, including salaries, benefits and stock-based compensation. Research and development personnel have attributed to approximately 46% of our headcount increase over the eight quarters presented. We continue to invest in research and development to enhance our SaaS solution capabilities for both our residential and commercial subscribers and to enhance our suite of enterprise tools that enable our service provider partners to expand their business. During the three months ended September 30, 2018, we recorded a $28.0 million expense related to an agreement reached in 2018 to settle the legal matter alleging violations of the TCPA. During the three months ended September 30, 2019, we recorded interest of $1.7 million within interest income and recorded a $6.9 million gain within other income, net, which relates to promissory note proceeds received from one of our hardware suppliers and proceeds from an acquired promissory note.

Segment Information

We have two reportable segments: Alarm.com and Other. Our Alarm.com segment represents our cloud-based and Software platforms for the intelligently connected property and related solutions that contributed 93%, 93% and 94% of our revenue for the years ended December 31, 2019, 2018 and 2017, respectively. Our Other segment is focused on researching, developing and offering residential and commercial automation solutions and energy management products and services in adjacent markets. The consolidated subsidiaries that make up our Other segment are in the investment stage and have incurred significant operating expenses relative to their revenue.

Our Alarm.com segment increased from 803 employees as of January 1, 2019 to 1,076 employees as of December 31, 2019. Our Other segment increased from 81 employees as of January 1, 2019 to 84 employees as of December 31, 2019. Inter-segment revenue includes sales of hardware between our segments.

The following table presents our revenue, inter-segment revenue and operating expenses by segment (in thousands):

	Year Ended December 31,								
	2019			2018			2017		
	SaaS and License Revenue	Hardware and Other Revenue	Operating Expenses	SaaS and License Revenue	Hardware and Other Revenue	Operating Expenses	SaaS and License Revenue	Hardware and Other Revenue	Operating Expenses
Alarm.com	$ 317,580	$ 156,265	$ 249,097	$ 278,013	$ 119,221	$ 243,835	$ 227,583	$ 92,445	$ 171,436
Other	19,795	20,919	19,254	13,059	20,316	18,742	8,700	15,154	17,939
Intersegment Alarm.com	—	(4,301)	—	—	(4,749)	—	—	(2,945)	—
Intersegment Other	—	(7,895)	—	—	(5,366)	—	—	(2,000)	—
Total	$ 337,375	$ 164,988	$ 268,351	$ 291,072	$ 129,422	$ 262,577	$ 236,283	$ 102,654	$ 189,375

Our SaaS and license revenue for the Alarm.com segment included software license revenue of $43.4 million, $41.3 million and $29.7 million for the years ended December 31, 2019, 2018 and 2017, respectively. There was no software license revenue recorded for the Other segment during the years ended December 31, 2019, 2018 and 2017.

Critical Accounting Policies and Significant Judgments and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue, costs and expenses during the reported period. In accordance with GAAP, we base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions, and to the extent that there are differences between our estimates and actual results, our future financial statement presentation, financial condition, results of operations and cash flows will be affected. Our most critical accounting policies are summarized below. See Note 2 to our consolidated financial statements for a description of our other significant accounting policies.

Revenue

We derive our revenue from three primary sources: the sale of cloud-based SaaS services on our integrated Alarm.com platform, the sale of licenses and services on the Software platform and the sale of hardware products. We sell our platform and hardware solutions to service provider partners that resell our solutions and hardware to residential and commercial property owners, who are the service provider partners' customers.

To determine the transaction price, we analyze all of the performance obligations included in the contract. We consider the terms of the contract and our customary business practices, which typically do not include financing components or non-cash consideration. We have variable consideration in the form of retrospective volume discounts, rebate incentives, restocking fees and assurance-type warranties. The significant inputs related to variable consideration include the volume and amount of products and services sold historically and expected to be sold in the future, the availability and performance of our services and the historical and expected number of returns. Depending on the type of variable consideration and its predictability, we may apply an “expected value” approach or a “most likely amount” approach. We estimate the variable consideration at the onset of a contract and include the variable consideration within the transaction price if it is probable that a significant reversal of the variable consideration would not occur in the future. When determining whether the amount of variable consideration included in the transaction price should be constrained, we look at the history of hardware purchased and subscribers added by our service provider partners to estimate the likelihood of those service provider partners obtaining the retrospective volume discounts and rebates. At times, our contracts include consideration payable to a customer in the form of fixed discounts or rebates. We record the consideration payable to a customer as a reduction to the transaction price resulting in a reduction to revenue over the service period.

If we enter into contracts that contain multiple promised services, we evaluate which of the promised services represent separate performance obligations based on whether or not the promised services are distinct and whether or not the services are separable from other promises in the contract. If these criteria are met, then we allocate the transaction price to the performance obligations using the relative stand-alone selling price method at contract inception.

In determining the relative estimated selling prices, we consider market conditions, entity-specific factors and information about the customer or class of customer. Any discount within the contract is allocated proportionately to all of the separate performance obligations in the contract unless the terms of discount relate specifically to the entity’s efforts to satisfy some but not all of the performance obligations.

SaaS and License Revenue. We generate the majority of our SaaS and license revenue primarily from monthly fees charged to our service provider partners sold on a per subscriber basis for access to our cloud-based intelligently connected property platform and related solutions. We also generate SaaS and license revenue from the fees paid to us when we license our intellectual property to third parties for use of our patents. We recognize revenue from SaaS services on a monthly basis as we satisfy our performance obligations.

Software License Revenue. Our SaaS and license revenue also includes our software license revenue from monthly fees charged to service providers sold on a per subscriber basis for access to our Software platform. Under the usage-based royalty exception, we recognize revenue on a monthly basis over the period during which the services are expected to be performed.

Hardware and Other Revenue. We generate hardware and other revenue primarily from the sale of video cameras, video recorders and cellular radio modules that provide access to our cloud-based platforms and, to a lesser extent, the sale of other devices, including image sensors and peripherals. We recognize hardware and other revenue as we satisfy our performance obligations, which primarily occurs when the hardware is received by our service provider partner or distributor, net of a reserve for estimated returns.

When determining the amount of consideration we expect to be entitled to for the sale of our hardware, we estimate the variable consideration associated with customer returns. We record a reserve against revenue for hardware returns based on historical returns. For the years ended December 31, 2019, 2018 and 2017, our reserve against revenue for hardware returns was 1%, 2% and 2% of hardware and other revenue, respectively. We evaluate our hardware reserve on a quarterly basis or if there is an indication of significant changes in return experience. Historically, our returns of hardware have not significantly differed from our estimated reserve. Additionally, we provide assurance-type warranties related to the intended functionality of the products and services provided and those warranties typically allow for the return of hardware up to one year past the date of sale. These warranties were not identified as separate performance obligations.

Our hardware and other revenue also includes our revenue from the sale of perpetual licenses that provide our customers in the commercial market the right to use our OpenEye video surveillance software for an indefinite period of time in exchange for a one-time license fee, which is generally paid at contract inception. Our perpetual licenses provide a right to use intellectual property that is functional in nature and has significant stand-alone functionality. Accordingly, for perpetual licenses of functional intellectual property, revenue is recognized at the point-in-time when control has been transferred to the customer, which occurs once the software has been made available to the customer.

Hardware and other revenue may also include activation fees charged to some of our service provider partners for activation of a new subscriber account on our platforms, as well as fees paid by service provider partners for our marketing services. The decision whether to charge an activation fee is based in part on the expected number of subscribers to be added by our service provider partners and as a result, many of our largest service provider partners do not pay an activation fee. We record activation fees initially as deferred revenue and we recognize these fees ratably over the expected term of the subscribers’ account which we estimate is ten years based on our annual attrition rate.

We do not expect any material changes in the near term to the underlying assumptions used to recognize revenue during the year ended December 31, 2019. However, if changes in these assumptions occur, and, should those changes be significant, they could have a material impact on our SaaS and license revenue as well as our hardware and other revenue.

Fair Value Measurements

The accounting standard for fair value measurements provides a framework for measuring fair value and requires disclosures regarding fair value measurements. Fair value is defined as the price that would be received for an asset or the exit price that would be paid to transfer a liability in the principal or most advantageous market in an orderly transaction between market participants on the measurement date. This accounting standard established a fair value hierarchy, which requires an entity to maximize the use of observable inputs, where available. The following summarizes the three levels of inputs:

Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date;

Level 2 - Inputs other than quoted prices included within Level 1 that are observable for similar assets and liabilities, either directly or indirectly; quoted prices in markets that are not active; and

Level 3 - Unobservable inputs supported by little or no market activity.

The liability for the subsidiary unit awards relates to agreements established with employees of our subsidiaries for cash awards contingent upon the subsidiary companies meeting certain financial milestones such as revenue, working capital, EBITDA and EBITDA margin and was valued with Level 3 unobservable inputs. We account for these subsidiary awards using fair value and establish liabilities for the future payment for the repurchase of subsidiary units under the terms of the agreements based on estimating revenue, working capital, EBITDA and EBITDA margin of the subsidiary units over the periods of the awards through the anticipated repurchase dates. We estimated the fair value of each liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. The fair value of each liability is calculated with thousands of projected outcomes, the results of which are averaged and then discounted to estimate the present value. At each reporting date until the respective payment dates, we will remeasure the liability, using the same valuation approach based on the applicable subsidiary's revenue and future collection of financed customer receivables, the unobservable inputs, and we will record any changes in the employee's compensation expense. Some of the awards are subject to the employees' continued employment and therefore recorded on a straight-line basis over the remaining service period. The liability for the subsidiary unit awards was $0.2 million as of December 31, 2019.

The liability for the contingent consideration consists of the potential earn-out payment related to our acquisition of 85% of the issued and outstanding capital stock of OpenEye on October 21, 2019. The earn-out payment is contingent on the satisfaction of certain calendar 2020 revenue targets and has a maximum potential payment of up to $11.0 million. We account for the contingent consideration using fair value and establish a liability for the future earn-out payment based on an estimation of revenue attributable to perpetual licenses and subscription licenses over the 2020 calendar year. We estimated the fair value of the liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. The contingent consideration liability was valued with Level 3 unobservable inputs, including the revenue volatility and the discount rate. The liability for the contingent consideration was $2.6 million as of December 31, 2019.

Based on these assessments of fair value, we remeasured the liabilities valued with Level 3 unobservable inputs and recorded a reduction of $0.2 million in operating expenses within the consolidated statement of operations for the year ended December 31, 2019. We have not made any material changes in the accounting methodology used to determine the fair value of the subsidiary unit awards or the contingent consideration. We do not expect any material changes in the near term to the underlying assumptions used to determine the unobservable inputs used to calculate the fair value of the subsidiary unit awards or the contingent consideration as of December 31, 2019. However, if changes in these assumptions occur, and, should those changes be significant, we may be exposed to additional operating expenses.

Stock-Based Compensation

We compensate our executive officers, board of directors, employees and consultants with stock-based compensation plans under our 2015 Equity Incentive Plan, or 2015 Plan. We record stock-based compensation expense based upon the award’s grant date fair value and use an accelerated attribution method, net of actual forfeitures, in which compensation cost for each vesting tranche in an award is recognized ratably from the service inception date to the vesting date for that tranche. We estimate the fair value of each option granted on the date of grant using the Black-Scholes option-pricing model, which requires us to estimate the risk-free interest rate, expected term, expected stock price volatility and dividend yield. The risk-free interest rate assumption is based upon observed interest rates for constant maturity U.S. Treasury securities consistent with the expected term of our stock options. The expected term represents the period of time the stock options are expected to be outstanding and is based on the "simplified method." Under the "simplified method," the expected term of an option is presumed to be the mid-point between the vesting date and the end of the contractual term. We use the "simplified method" due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected term of the stock options. Beginning in November 2019, the expected volatility for options granted is based on historical volatilities of our stock over the estimated expected term of the stock options. The expected volatility for options granted prior to November 2019 was based on historical volatilities of our stock and publicly traded stock of comparable companies over the estimated expected term of the stock options.

We do not expect any material changes in the near term to the underlying assumptions used to calculate stock-based compensation expense for the year ended December 31, 2019. However, if changes in these assumptions occur, and, should those changes be significant, they could have a material impact on our stock-based compensation expense.

Business Combinations

We are required to allocate the purchase price of acquired companies to the identifiable tangible and intangible assets acquired and liabilities assumed at the acquisition date based upon their estimated fair values. The net assets and results of operations of an acquired entity are included in our consolidated financial statements from the acquisition date. Acquisition-related costs are expensed as incurred. Goodwill as of the acquisition date represents the excess of the purchase consideration of an acquired business over the fair value of the underlying net tangible and intangible assets acquired net of liabilities assumed. This valuation requires management to apply significant judgment in estimating the fair value of long-lived and intangible assets acquired, which involves the use of significant estimates and assumptions.

Significant estimates and assumptions in valuing intangible assets include estimates about future expected cash flows, discount rates, attrition rates related to acquired customer relationships, royalty rates and obsolescence factors related to acquired developed technology and royalty rates relate to acquired trade names.

During the measurement period, we may record adjustments to the assets acquired and liabilities assumed. Any adjustments to provisional amounts that are identified during the measurement period are recorded in the reporting period in which the adjustment amounts are determined. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

Some acquisitions may include contingent consideration, which is an obligation to make future payments to the seller contingent upon the achievement of future operational or financial targets. We estimated the fair value of the contingent consideration liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. Significant estimates and assumptions in valuing contingent consideration include estimates about future financial results, revenue volatility and the discount rate. The fair value of the contingent consideration is estimated on a quarterly basis and changes in the fair value of the contingent consideration resulting from information that existed subsequent to the acquisition date are recorded in the consolidated statements of operations.

Goodwill, Intangible Assets and Long-lived Assets

Goodwill

Goodwill represents the excess of (1) the aggregate of the fair value of consideration transferred in a business combination, over (2) the fair value of assets acquired, net of liabilities assumed. Goodwill is allocated to our reporting units, which are our operating segments or one level below our operating segments. Goodwill is not amortized, but is subject to annual impairment tests. We perform our annual impairment review of goodwill on October 1 and when a triggering event occurs between annual impairment tests. We test our goodwill at the reporting unit level. We perform either a qualitative analysis or a quantitative analysis every year depending on the changes to our goodwill balance as well as changes in our business and the economy. Qualitative factors we consider include, but are not limited to, macroeconomic conditions, industry and market conditions, company specific events, changes in circumstances and market capitalization. The amount of goodwill impairment is calculated as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill.

For our 2019 annual impairment review, we performed a qualitative assessment for our Alarm.com reporting unit, our only reporting unit with a goodwill balance. Based on the results of our qualitative assessment, we determined that it was not more likely than not that the fair value of our reporting unit was less than its carrying amount, including goodwill. Therefore, we concluded that there was no goodwill impairment as of October 1, 2019. Our assessment was performed as of October 1, 2019, and we have determined there have been no triggering events from our assessment date through December 31, 2019.

Intangible Assets and Long-lived Assets

Intangible assets are initially valued at fair value using generally accepted valuation methods appropriate for the type of intangible asset. Intangible assets with definite lives are amortized over their estimated useful lives and are reviewed for impairment if indicators of impairment arise. The fair value of the intangible assets is compared with their carrying value and an impairment loss would be recognized for the amount by which the carrying amount exceeds the fair value.

We evaluate the recoverability of our long-lived assets for impairment whenever events or circumstances indicate that the carrying amount of the assets may not be recoverable. Recoverability of long-lived assets are measured by comparison of the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset.

For the year ended December 31, 2019, we determined there were no indicators of impairment of our intangible assets with definite lives or long-lived assets.

Accounting for Income Taxes

We account for income taxes under the asset and liability method as required by accounting standards codification, or ASC 740, "*Income Taxes*," which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that are included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We record net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. Due to the uncertainty of realization of certain deferred tax assets related to our Canadian net operating losses and research and development tax credits, we established a valuation allowance of $0.3 million during the second quarter of 2019, which remained at $0.3 million as of December 31, 2019. As of December 31, 2018, based on our historical and expected future taxable earnings, we believed it was more likely than not that we would realize all of the benefit of the existing deferred tax assets. Accordingly, we did not record a valuation allowance as of December 31, 2018.

We are subject to income taxes in the United States and foreign jurisdictions based upon our business operations in those jurisdictions. Significant judgment is required in evaluating uncertain tax positions. We record uncertain tax positions in accordance with ASC 740-10 on the basis of a two-step process whereby (1) we determine whether it is more likely than not that the tax positions will be sustained based on the technical merits of the position, and (2) with respect to those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is greater than 50% likely to be realized upon ultimate settlement with the related tax authority. We record interest and penalties as a component of our income tax provision.

Impairment of Notes Receivable

Notes receivable are presented net of an allowance for uncollectibility, if any. We accrue interest on notes receivable based on the contractual terms of the note. Outstanding notes receivable that are aged 30 days or more from the contractual payment date are considered past due. Notes receivable are evaluated for impairment at least quarterly. Impairment occurs when it is deemed probable that we will not be able to collect all amounts due according to the contractual terms of the loan. We periodically assess our notes receivable for collectibility and impairment by considering internal factors such as payment status, collateral value, the probability of collecting payments when due and credit quality as well as external factors such as economic conditions. We do not accrue interest on notes receivable that are considered impaired or are greater than 90 days past due based on their contractual payment terms. Notes receivable may be placed on nonaccrual status earlier if, in management’s opinion, a timely collection of the full principal and interest becomes uncertain. After a note receivable has been placed in nonaccrual status, interest will be recognized when cash is received. A note receivable may be returned to accrual status after all of the customer’s delinquent balances of principal and interest have been settled, and collection of all remaining contractual amounts due is reasonably assured.

Based on our assessment of the collectibility of a promissory note provided to one of our hardware suppliers, we recorded an impairment of $3.3 million during the year ended December 31, 2018, which was subsequently reversed during the year ended December 31, 2019 upon receiving a payment from our hardware supplier. If changes in the assumptions used to assess the collectibility and impairment of our notes receivable occur, and, should those changes be significant, they could have a material impact on our consolidated statements of operations.

Recent Accounting Pronouncements

See Note 2 of our consolidated financial statements for information related to recently issued accounting standards.

Liquidity and Capital Resources

Working Capital

The following table summarizes our cash and cash equivalents, accounts receivable, net and working capital, for the periods indicated (in thousands):

	As of December 31,		
	2019	2018	2017
Cash and cash equivalents	$ 119,629	$ 146,061	$ 96,329
Accounts receivable, net	76,373	49,510	40,634
Working capital	167,879	152,793	119,433

We define working capital as current assets minus current liabilities. Our cash and cash equivalents as of December 31, 2019 are available for working capital purposes. We do not enter into investments for trading purposes, and our investment policy is to invest any excess cash in short term, highly liquid investments that limit the risk of principal loss; therefore, our cash and cash equivalents are held in demand deposit accounts that generate very low returns.

Liquidity and Capital Resources

As of December 31, 2019, we had $119.6 million in cash and cash equivalents. We consider all highly liquid instruments purchased with an original maturity from the date of purchase of three months or less to be cash equivalents. To date, we have principally financed our operations through cash generated by operating activities and, to a lesser extent, through private and public equity financings.

We believe our existing cash and cash equivalents, together with our 2017 Facility, and our future cash flows from operating activities will be sufficient to meet our anticipated operating cash needs for at least the next 12 months. Over the next 12 months, we expect our capital expenditure requirements to be approximately $18.0 million, primarily related to the continued build out of our leased and owned office space, as well as purchases of computer software and equipment. In February 2020, we made a prepayment of $4.7 million for long lead-time parts related to our inventory. On August 30, 2018, we reached an agreement in principle to settle a putative class action lawsuit filed against us and Alarm.com Incorporated in the U.S. District Court for the Northern District of California. The tentative settlement was subject to the negotiation and execution of a definitive settlement agreement and Court approval. On October 25, 2018, we entered into a definitive settlement agreement, or the Settlement Agreement, with the plaintiffs. An initial payment of $5.0 million was made by us to the settlement administrator on January 2, 2019 and the remaining payment of $23.0 million was made on September 30, 2019.

In October 2018, we entered into a subordinate convertible promissory note with one of our hardware suppliers, or the October 2018 Promissory Note, which was amended in November 2018, January 2019 and February 2019 as a result of the hardware supplier's financial restructuring. In March 2019, we entered into a separate secured promissory note with the same hardware supplier, which, together with the October 2018 Promissory Note, we refer to as the Promissory Notes. Under the Promissory Notes, we agreed to provide the hardware supplier loans of up to $7.4 million, collateralized by all assets owned by the supplier. In March 2019, we paid $16.4 million to acquire a secured promissory note, or the Acquired Promissory Note, that was originally executed between our hardware supplier and another third-party secured creditor. The Acquired Promissory Note had an outstanding balance of $26.6 million as of December 31, 2018, including interest. In addition to the $16.4 million paid in March 2019 for the Acquired Promissory Note, we agreed to pay the third-party secured creditor an additional $6.0 million, subject to certain contingencies measured as of May 4, 2019. Based on the outcome of those contingencies, we recorded a $6.0 million liability in March 2019 related to the Acquired Promissory Note and paid the $6.0 million contingent liability during the three months ended September 30, 2019.

On May 6, 2019, we entered into a forbearance agreement with the hardware supplier, or the Forbearance Agreement. Under the Forbearance Agreement, the hardware supplier agreed to pay us the outstanding balance of principal and interest under the Promissory Notes and the Acquired Promissory Note before June 30, 2019. In consideration for the full and timely payments under the Forbearance Agreement, we agreed to temporarily forbear from exercising the remedies available to us with respect to the collateral securing the Promissory Notes and the Acquired Promissory Note. On June 24, 2019, we entered into a Forbearance Extension Agreement with the hardware supplier, under which the hardware supplier agreed to pay us $7.4 million on or before June 24, 2019. In consideration for the $7.4 million payment under the Forbearance Extension Agreement, we agreed to temporarily forbear from exercising the remedies available to us with respect to the collateral securing the Promissory Notes and the Acquired Promissory Note until July 10, 2019.

On June 24, 2019, we received a payment of $7.4 million from the hardware supplier for the partial satisfaction of amounts due under the Promissory Notes and the Acquired Promissory Note. On July 15, 2019, we received an additional payment of $25.0 million from the supplier and converted the remaining outstanding notes receivable balance into an equity investment in the hardware supplier.

As of December 31, 2019, there was no remaining outstanding balance on the Promissory Notes and the Acquired Promissory Note. As of December 31, 2018, the outstanding balance of the Promissory Notes excluding interest was $3.3 million and was included in other assets in our consolidated balance sheets prior to any adjustments for impairment.

On September 18, 2019, Alarm.com Incorporated, one of our wholly-owned subsidiaries, acquired certain assets of an unrelated third party. Substantially all of the acquired assets consisted of in-process research and development, or IPR&D. In consideration for the purchase of the IPR&D, we paid $0.9 million in cash on September 18, 2019, with the remaining $0.1 million expected to be paid 18 months following the acquisition date, subject to offset for any indemnification obligations.

On October 21, 2019, Alarm.com Incorporated acquired 85% of the issued and outstanding capital stock of OpenEye for $61.2 million in cash after deducting $2.8 million related to an agreed holdback. Pursuant to the terms of the stock purchase agreement, following the preliminary determination of the working capital of OpenEye as of the closing date, the purchase price increased by $0.2 million. The working capital adjustment is expected to be finalized and paid to the stockholders of OpenEye in the first half of 2020 along with a portion of the holdback. The remaining amount of the holdback is expected to be paid to the stockholders of OpenEye by the fourth quarter of 2022, subject to offset for any indemnification obligations. An earn-out of up to an additional $11.0 million is payable if certain calendar 2020 revenue targets are met. We recorded a redeemable noncontrolling interest of $11.4 million on October 21, 2019 related to the remaining 15% equity interest owned by the minority OpenEye stockholders. The purchase price allocation, which is pending until the final determination of the working capital and tax adjustments, was not finalized as of the filing date of this Annual Report on Form 10-K.

In December 2019, we purchased land and a commercial building located in Liberty Lake, Washington for $5.1 million. Once renovations are complete, this building will be used by OpenEye for sales and training, research and development, warehousing and administrative purposes.

Our future working capital and capital expenditure requirements will depend on many factors, including the rate of our revenue growth, the amount and timing of our investments in human resources and capital equipment, future acquisitions and investments, and the timing and extent of our introduction of new solutions and platform and solution enhancements. To the extent our cash and cash equivalents, together with our 2017 Facility, and cash flows from operating activities are insufficient to fund our future activities, we may need to borrow additional funds through our bank credit arrangements or raise funds from public or private equity or debt financings. If we raise additional funds through the incurrence of indebtedness, such indebtedness would likely have rights that are senior to holders of our equity securities and could contain covenants that restrict our operations. Any additional equity financing would be dilutive to our current stockholders.

Sources of Liquidity

Our 2017 Facility is a revolving credit facility with SVB, as administrative agent, and a syndicate of lenders to finance working capital and certain permitted acquisitions and investments. The 2017 Facility is available to us to refinance existing debt and for general corporate and working capital purposes including acquisitions, and has a current borrowing capacity of $125.0 million. We have the option to increase the borrowing capacity of the 2017 Facility to $175.0 million with the consent of the lenders.

As of December 31, 2019, $63.0 million was outstanding under the 2017 Facility, no letters of credit were outstanding and $62.0 million remained available for borrowing under the 2017 Facility. The 2017 Facility contains various financial and other covenants that require us to maintain a maximum consolidated leverage ratio and a fixed charge coverage ratio, and limit our capacity to incur other indebtedness, liens, make certain payments including dividends, and enter into other transactions without approval of the lenders. The 2017 Facility is secured by substantially all of our assets, including our intellectual property. As of December 31, 2019, we were in compliance with all covenants under the 2017 Facility. Our outstanding amounts under the 2017 Facility are due at maturity in October 2022. The 2017 Facility is discussed in more detail below under "Debt Obligations."

Dividends

We did not declare or pay dividends during the years ended December 31, 2019, 2018 or 2017. We cannot provide any assurance that we will declare or pay cash dividends on our common stock in the future. We currently anticipate that we will retain all of our future earnings, if any, for use in the operation and expansion of our business and we do not anticipate paying cash dividends in the foreseeable future. Additionally, our ability to pay dividends on our common stock is limited by restrictions under the terms of the agreements governing the 2017 Facility. Payment of future cash dividends, if any, will be at the discretion of the board of directors after taking into account various factors, including our financial condition, operating results, current and anticipated cash needs, the requirements of current or then-existing debt instruments and other factors the board of directors deems relevant.

Historical Cash Flows

The following table sets forth our cash flows for the periods indicated (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Cash flows from operating activities	$ 47,112	$ 60,710	$ 57,187
Cash flows used in investing activities	(73,414)	(13,377)	(168,795)
Cash flows (used in) / from financing activities	(130)	2,399	67,303

Operating Activities

Cash flows from operating activities have typically been generated from our net income and by changes in our operating assets and liabilities, particularly from accounts receivable and inventory, adjusted for non-cash expense items such as amortization and depreciation, deferred income taxes and stock-based compensation.

For 2019, cash flows from operating activities were $47.1 million, compared to $60.7 million for 2018. This $13.6 million decrease in cash flows from operating activities was due to a $61.4 million decrease in cash from operating assets and liabilities, partially offset by a $31.8 million increase in net income and a $16.0 million increase in non-cash items.

The $61.4 million decrease in cash from operating assets and liabilities was primarily due to the $28.0 million expense recorded during 2018 for the agreement reached to settle the legal matter alleging violations of the TCPA, and such settlement amount was subsequently paid during 2019. The decrease in cash from operating assets and liabilities was also due to differences in timing of collection of receipts and payments of disbursements. The $16.0 million increase in non-cash items was primarily due to a $14.1 million change in deferred income taxes, primarily due to the increase in deferred income taxes resulting from the $28.0 million expense recorded during 2018 for the agreement reached to settle the legal matter alleging violations of the TCPA. Additionally, the increase in non-cash items was due to a $7.2 million increase in stock-based compensation resulting from additional grants of stock options and restricted stock units during 2019, partially offset by a gain of $6.9 million recorded during 2019 related to the proceeds from the Promissory Notes and the Acquired Promissory Note received from one of our hardware suppliers.

For 2018, cash flows from operating activities were $60.7 million, an increase of $3.5 million from 2017, as the result of a $13.5 million increase in cash from operating assets and liabilities partially offset by a $7.7 million decrease in net income and a $2.3 million decrease in non-cash items.

The $13.5 million increase in cash from operating assets and liabilities was primarily due to the $28.0 million expense recorded during 2018 for the agreement reached to settle the legal matter alleging violations of the TCPA, which was not paid as of December 31, 2018. This increase in cash from operating assets and liabilities was partially offset by a $5.5 million increase in the change in inventory related to the purchase of long lead-time parts, a $2.8 million settlement of the liability related to the subsidiary unit awards during 2018 and differences in timing of collection of receipts and payments of disbursements.

The $2.3 million decrease in non-cash items was primarily due to a $14.0 million increase in the change in deferred income taxes, primarily due to the increase in deferred income taxes resulting from the $28.0 million expense recorded during 2018 for the agreement reached to settle the legal matter alleging violations of the TCPA. This decrease in non-cash items was partially offset by a $6.0 million increase in stock-based compensation resulting from additional grants of stock options and restricted stock units during 2018. Additionally, there was a $4.0 million increase in amortization and depreciation primarily due to the additional amortization of customer relationships, developed technology and trade name intangibles acquired from the Acquisition in the first quarter of 2017.

Investing Activities

Our investing activities typically include acquisitions, capital expenditures, notes receivable issued to companies with offerings complementary to ours and proceeds from the repayment of those notes receivable. Our capital expenditures have primarily been for general business use, including leasehold improvements as we have expanded our office space to accommodate our growth in headcount, computer equipment used internally, and expansion of our network operations centers.

For 2019, our cash flows used in investing activities was $73.4 million as compared to $13.4 million in 2018. The $60.0 million increase in cash used in investing activities was primarily due to our payment of $58.8 million, net of cash acquired, for 85% of the issued and outstanding capital stock of OpenEye. The increase in cash used in investing activities was also due to $22.4 million paid in 2019 for the Acquired Promissory Note, $3.7 million of additional funding provided to the hardware supplier under the Promissory Notes in 2019 and $5.1 million paid for the purchase of land and a commercial building in 2019. The increases in cash used in investing activities were partially offset by $30.7 million received from one of our hardware suppliers for the amounts due under the Promissory Notes and the Acquired Promissory Note.

For 2018, our cash flows used in investing activities was $13.4 million as compared to $168.8 million in 2017. The $155.4 million decrease in cash used in investing activities was primarily due to our payment of $154.3 million, net of cash acquired, for our acquisitions in the first quarter of 2017.

Financing Activities

Cash generated by financing activities includes borrowings under credit facilities and proceeds from the issuance of common stock from employee stock option exercises and from our employee stock purchase plan. Cash used in financing activities typically includes repurchases of common stock and repayments of debt.

For 2019, cash flows used in financing activities was $0.1 million compared to cash flows from financing activities of $2.4 million in 2018. The $2.5 million change in cash flows used in financing activities was primarily due to a decrease of $2.5 million in the issuance of common stock under equity-based plans.

For 2018, cash flows from financing activities was $2.4 million compared to $67.3 million in 2017. The $64.9 million decrease in cash flows from financing activities was primarily due to the $64.3 million of net proceeds borrowed under the credit facilities during 2017 related to the Acquisition in March 2017.

Contractual Obligations

Presented below is information about our material contractual obligations and the periods in which those future payments are due as of December 31, 2019. Future events could cause actual payments to differ from these estimates. As of December 31, 2019, the following table summarizes our contractual obligations and the effect such obligations are expected to have on our liquidity and cash flow in future periods (in thousands):

Contractual Obligations	1 Year	2 to 3 Years	4 to 5 Years	More Than 5 Years	Total
Debt:					
Principal payments	$ —	$ 63,000	$ —	$ —	$ 63,000
Interest payments[1]	2,206	3,876	—	—	6,082
Unused line fee payments	126	222	—	—	348
Operating lease commitments	9,818	18,823	15,840	10,893	55,374
Subsidiary unit award liabilities[2]	141	—	—	—	141
Other long-term liabilities	—	4,375	2,513	601	7,489
Other commitments[3]	624	290	—	—	914
Total contractual obligations	$ 12,915	$ 90,586	$ 18,353	$ 11,494	$ 133,348

(1) The 2017 Facility incurs interest at a variable rate. The projected variable interest payments assume no change in the Eurodollar Base Rate, or LIBOR, from December 31, 2019.
(2) Represents the current portion of our expected cash payments for our liability to repurchase subsidiary unit awards for our professional residential property management and vacation rental management subsidiary.
(3) Represents amounts due under multi-year, non-cancelable contracts with third-party vendors, as well as other commitments.

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 obligations under agreements that we can cancel without a significant penalty.

As of December 31, 2019, we had no outstanding letters of credit under our 2017 Facility.

Off-Balance Sheet Arrangements

We do not have any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. We do not engage in off-balance sheet financing arrangements. In addition, we do not engage in trading activities involving non-exchange traded contracts.

Debt Obligations

On October 6, 2017, we entered into a $125.0 million senior secured revolving credit facility, or the 2017 Facility, with SVB, as administrative agent, PNC Bank, National Association, as documentation agent, and a syndicate of lenders. Upon entry into the 2017 Facility, we borrowed $72.0 million, which was used to repay the previously outstanding balance under our previous credit facility. The 2017 Facility matures in October 2022 and includes an option to further increase the borrowing capacity to $175.0 million with the consent of the lenders. Costs incurred in connection with the 2017 Facility were capitalized and are being amortized as interest expense over the term of the 2017 Facility. The 2017 Facility is secured by substantially all of our assets, including our intellectual property. During each of the years ended December 31, 2019 and 2018, we repaid $4.0 million of the outstanding balance of the 2017 Facility.

The outstanding principal balance on the 2017 Facility accrues interest at a rate equal to, at our option, either (1) LIBOR, plus an applicable margin based on our consolidated leverage ratio, or (2) the highest of (a) the Wall Street Journal prime rate, (b) the Federal Funds rate plus 0.50%, or (c) LIBOR plus 1.00% plus an applicable margin based on our consolidated leverage ratio. For the year ended December 31, 2019, we elected for the outstanding principal balance to accrue interest at LIBOR plus 1.50%, LIBOR plus 1.75%, LIBOR plus 2.00%, and LIBOR plus 2.50% when our consolidated leverage ratio is less than 1.00:1.00, greater than or equal to 1.00:1.00 but less than 2.00:1.00, greater than or equal to 2.00:1.00 but less than 3.00:1.00 and greater than or equal to 3.00:1.00, respectively. The 2017 Facility also carries an unused line commitment fee of 0.20%. For the years ended December 31, 2019, 2018 and 2017, the effective interest rate on the credit facilities was 4.45%, 4.13% and 4.16%, respectively.

The carrying value of the 2017 Facility was $63.0 million and $67.0 million as of December 31, 2019 and 2018, respectively. The 2017 Facility includes a variable interest rate that approximates market rates and, as such, we classified the liability as Level 2 within the fair value hierarchy and determined that the carrying amount of the 2017 Facility approximated its fair value as of December 31, 2019 and 2018. The 2017 Facility contains various financial and other covenants that require us to maintain a maximum consolidated leverage ratio not to exceed 3.25:1.00 and a consolidated fixed charge coverage ratio of at least 1.25:1.00. As of December 31, 2019, we were in compliance with all financial and non-financial covenants and there were no events of default. The 2017 Facility also contains customary conditions to borrowings and events of default and contains various negative covenants, including covenants that restrict our ability to dispose of assets, merge with or acquire other entities, incur indebtedness, incur encumbrances, make certain payments including dividends, make investments or engage in transactions with affiliates without approval of the lenders.

On November 30, 2018, we amended the 2017 Facility to incorporate the parameters that must be met for us to repurchase our outstanding common stock under the stock repurchase program authorized by our board of directors on November 29, 2018.

Non-GAAP Measures

We define Adjusted EBITDA as our net income before interest expense, interest income, other income, net, provision for / (benefit from) income taxes, amortization and depreciation, stock-based compensation expense, acquisition-related expense and legal costs and settlement fees incurred in connection with non-ordinary course litigation and other disputes, particularly costs involved in ongoing intellectual property litigation. We do not consider these items to be indicative of our core operating performance. The non-cash items include amortization and depreciation expense, stock-based compensation expense related to stock options and other forms of equity compensation, including, but not limited to, the sale of common stock. We do not adjust for ordinary course legal expenses resulting from maintaining and enforcing our intellectual property portfolio and license agreements. Adjusted EBITDA is not a measure calculated in accordance with GAAP. See the table below for a reconciliation of Adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

We have included Adjusted EBITDA in this report because it is a key measure that our management uses to understand and evaluate our core operating performance and trends, to generate future operating plans, to make strategic decisions regarding the allocation of capital and to make investments in initiatives that are focused on cultivating new markets for our solutions. We also use certain non-GAAP financial measures, including Adjusted EBITDA, as performance measures under our executive bonus plan. Further, we believe the exclusion of certain expenses in calculating Adjusted EBITDA facilitates comparisons of our operating performance on a period-to-period basis and, in the case of exclusion of acquisition-related expense and certain historical legal expenses, excludes items that we do not consider to be indicative of our core operating performance. Accordingly, we believe that Adjusted EBITDA provides useful information to investors and others in understanding and evaluating our operating results in the same manner as our management and board of directors.

Our use of Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our financial results as reported under GAAP. Some of these limitations are: (a) although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and Adjusted EBITDA does not reflect cash capital expenditure requirements for such replacements or for new capital expenditure requirements; (b) Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs; (c) Adjusted EBITDA does not reflect the potentially dilutive impact of equity-based compensation; (d) Adjusted EBITDA does not reflect tax payments that may represent a reduction in cash available to us; and (e) other companies, including companies in our industry, may calculate Adjusted EBITDA or similarly titled measures differently, which reduces its usefulness as a comparative measure.

Because of these and other limitations, you should consider Adjusted EBITDA alongside our other GAAP-based financial performance measures, net income and our other GAAP financial results. The following table presents a reconciliation of Adjusted EBITDA to net income, the most directly comparable GAAP measure, for each of the periods indicated (in thousands):

	Year Ended December 31,		
	2019	**2018**	**2017**
Adjusted EBITDA:			
Net income	$ 53,330	$ 21,524	$ 29,251
Adjustments:			
Interest expense, interest income and other income, net	(8,483)	503	1,133
Provision for / (benefit from) income taxes	5,566	(9,825)	2,990
Amortization and depreciation expense	22,134	21,721	17,734
Stock-based compensation expense	20,603	13,429	7,413
Acquisition-related expense	2,403	—	5,895
Litigation expense	12,754	45,729	7,212
Total adjustments	54,977	71,557	42,377
Adjusted EBITDA	$ 108,307	$ 93,081	$ 71,628

ITEM 7A. QUANTITATIVE AND QUALITATIVE 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, as well as to a lesser extent, foreign exchange rates and inflation.

Interest Rate Risk

We are primarily exposed to changes in short-term interest rates with respect to our cost of borrowing under our 2017 Facility with SVB. We monitor our cost of borrowing under our various facilities, taking into account our funding requirements, and our expectation for short-term rates in the future. As of December 31, 2019 and 2018, an increase or decrease in the interest rate on our 2017 Facility with SVB by 100 basis points would increase or decrease our annual interest expense by approximately $0.6 million and $0.7 million, respectively.

Foreign Currency Exchange Risk

Because substantially all of our revenue and operating expenses are denominated in U.S. dollars, we do not believe that our exposure to foreign currency exchange risk is material to our business, financial condition or results of operations. If a significant portion of our revenue and operating expenses becomes denominated in currencies other than U.S. dollars, we may not be able to effectively manage this risk, and our business, financial condition and results of operations could be adversely affected by translation and by transactional foreign currency conversions.

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 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

ALARM.COM HOLDINGS, INC.
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Alarm.com Holdings, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Alarm.com Holdings, Inc. and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of operations, equity, and cash flows for each of the three years in the period ended December 31, 2019, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principles

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019 and the manner in which it accounts for revenues from contracts with customers in 2018.

Basis for Opinions

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

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

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

As described in Management's Report on Internal Control over Financial Reporting, management has excluded PC Open Incorporated, a Washington corporation, doing business as OpenEye ("OpenEye"), from its assessment of internal control over financial reporting as of December 31, 2019 because it was acquired by the Company in a purchase business combination during 2019. We have also excluded OpenEye from our audit of internal control over financial reporting. OpenEye is an 85% owned subsidiary whose total assets and total revenues excluded from management's assessment and our audit of internal control over financial reporting represent 1% and 1%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2019.

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Acquisition of OpenEye - Valuation of Acquired Customer Relationships and Developed Technology Intangible Assets

As described in Notes 2 and 7 to the consolidated financial statements, the Company acquired 85% of the issued and outstanding capital stock of OpenEye for total consideration of $67.0 million on October 21, 2019, which resulted in $38.6 million of intangible assets being recorded. Intangible assets recorded by the Company primarily included customer relationships of $19.8 million and developed technology of $16.6 million. Management valued the single group of customer relationships using the multi-period excess earnings method and valued the developed technology by applying the relief from royalty method. As disclosed by management, this valuation requires management to apply significant judgment in estimating the fair value of intangible assets acquired, which involves the use of significant estimates and assumptions. Significant estimates and assumptions in valuing intangible assets include future expected cash flows, discount rates, attrition rates related to acquired customer relationships and royalty rates and obsolescence factors related to acquired developed technology.

The principal considerations for our determination that performing procedures relating to the valuation of acquired customer relationships and developed technology intangible assets recorded with the acquisition of OpenEye is a critical audit matter are there was significant judgment by management in estimating the fair value of the acquired customer relationships and developed technology intangible assets. This in turn led to significant auditor judgment, subjectivity, and effort in performing procedures and evaluating the significant assumptions relating to management's estimates, including future expected cash flows, discount rates, attrition rate, royalty rate, and obsolescence factors. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained from these procedures.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the acquisition accounting, including controls over management's valuation of the acquired customer relationships and developed technology intangible assets and controls over development of the significant assumptions related to the valuation of the acquired customer relationships and developed technology intangible assets, including future expected cash flows, discount rates, attrition rate, royalty rate, and obsolescence factors. These procedures also included, among others, (i) reading the purchase agreement; (ii) testing management's process for estimating the fair value of the acquired customer relationships and developed technology intangible assets; and (iii) testing management's significant assumptions relating to future expected cash flows, discount rates, attrition rate, royalty rate, and obsolescence factors used to estimate the fair value of the acquired customer relationships and developed technology intangible assets. Testing management's process included evaluating the appropriateness of the valuation methods, testing the completeness and accuracy of underlying data used in the valuation, and the reasonableness of significant assumptions, including the future expected cash flows, discount rates, attrition rate, royalty rate, and obsolescence factors. Evaluating the reasonableness of the future expected cash flows and customer attrition rate involved considering the past performance of the acquired businesses and, for future expected cash flows, economic and industry forecasts. Professionals with specialized skill and knowledge were used to assist in evaluating the appropriateness of management's valuation methods and significant assumptions, including discount rates, royalty rate, and obsolescence factors.

/s/ PricewaterhouseCoopers LLP
McLean, Virginia
February 25, 2020

We have served as the Company's auditor since 2009.

ALARM.COM HOLDINGS, INC.
Consolidated Statements of Operations
(in thousands, except share and per share data)

	Year Ended December 31,		
	2019	**2018**	**2017**
Revenue:			
SaaS and license revenue	$ 337,375	$ 291,072	$ 236,283
Hardware and other revenue	164,988	129,422	102,654
Total revenue	502,363	420,494	338,937
Cost of revenue[(1)]:			
Cost of SaaS and license revenue	50,066	44,933	35,610
Cost of hardware and other revenue	133,533	100,782	80,578
Total cost of revenue	183,599	145,715	116,188
Operating expenses:			
Sales and marketing	61,815	55,902	43,490
General and administrative	69,959	95,750	55,396
Research and development	114,443	89,204	72,755
Amortization and depreciation	22,134	21,721	17,734
Total operating expenses	268,351	262,577	189,375
Operating income	50,413	12,202	33,374
Interest expense	(2,974)	(2,918)	(2,199)
Interest income	4,922	2,272	1,031
Other income, net	6,535	143	35
Income before income taxes	58,896	11,699	32,241
Provision for / (benefit from) income taxes	5,566	(9,825)	2,990
Net income	53,330	21,524	29,251
Net loss attributable to redeemable noncontrolling interest	201	—	—
Net income allocated to participating securities	—	(3)	(13)
Net income attributable to common stockholders	$ 53,531	$ 21,521	$ 29,238
Per share information attributable to common stockholders:			
Net income per share:			
Basic	$ 1.11	$ 0.45	$ 0.63
Diluted	$ 1.06	$ 0.43	$ 0.59
Weighted average common shares outstanding:			
Basic	48,427,446	47,633,739	46,682,141
Diluted	50,273,889	49,692,184	49,153,948

(1) Exclusive of amortization and depreciation shown in operating expenses below.

See accompanying notes to the consolidated financial statements.

ALARM.COM HOLDINGS, INC.
Consolidated Balance Sheets
(in thousands, except share and per share data)

	December 31,	
	2019	**2018**
Assets		
Current assets:		
Cash and cash equivalents	$ 119,629	$ 146,061
Accounts receivable, net	76,373	49,510
Inventory, net	34,168	22,990
Other current assets	13,504	9,502
Total current assets	243,674	228,063
Property and equipment, net	38,548	27,757
Intangible assets, net	103,438	79,067
Goodwill	104,963	63,591
Deferred tax assets	19,137	28,952
Operating lease right-of-use assets	30,523	—
Other assets	17,516	13,555
Total assets	$ 557,799	$ 440,985
Liabilities, redeemable noncontrolling interest and stockholders' equity		
Current liabilities:		
Accounts payable, accrued expenses and other current liabilities	$ 48,727	$ 58,430
Accrued compensation	16,342	13,484
Deferred revenue	3,043	3,356
Operating lease liabilities	7,683	—
Total current liabilities	75,795	75,270
Deferred revenue	7,455	7,820
Long-term debt	63,000	67,000
Operating lease liabilities	37,199	—
Other liabilities	7,489	13,306
Total liabilities	190,938	163,396
Commitments and contingencies (Note 13)		
Redeemable noncontrolling interest	11,210	—
Stockholders' equity		
Preferred stock, $0.001 par value, 10,000,000 shares authorized; no shares issued and outstanding as of December 31, 2019 and December 31, 2018.	—	—
Common stock, $0.01 par value, 300,000,000 shares authorized; 48,700,963 and 48,103,038 shares issued; and 48,700,713 and 48,102,081 shares outstanding as of December 31, 2019 and December 31, 2018, respectively.	487	481
Additional paid-in capital	365,627	341,139
Accumulated deficit	(10,463)	(64,031)
Total stockholders' equity	355,651	277,589
Total liabilities, redeemable noncontrolling interest and stockholders' equity	$ 557,799	$ 440,985

See accompanying notes to the consolidated financial statements.

ALARM.COM HOLDINGS, INC.
Consolidated Statements of Cash Flows
(in thousands)

	Year Ended December 31,		
Cash flows from operating activities:	**2019**	**2018**	**2017**
Net income	$ 53,330	$ 21,524	$ 29,251
Adjustments to reconcile net income to net cash from operating activities:			
Provision for doubtful accounts	1,170	149	453
Reserve for product returns	(123)	273	2,055
Provision for notes receivable	(3,272)	3,319	—
Amortization on patents and tooling	700	900	965
Amortization and depreciation	22,134	21,721	17,734
Amortization of debt issuance costs	108	108	97
Amortization of operating leases	7,600	—	—
Deferred income taxes	2,599	(11,482)	2,488
Change in fair value of contingent liability	(198)	—	—
Undistributed losses from equity investees	—	—	120
Stock-based compensation	20,603	13,429	7,413
Gain on notes receivable	(6,931)	—	—
Acquired in-process research and development	850	—	—
Impairment of investment	605	—	—
Disposal of property and equipment	—	1,410	828
Changes in operating assets and liabilities (net of business acquisitions):			
Accounts receivable	(22,273)	(9,298)	(1,911)
Inventory	(6,491)	(8,813)	(3,335)
Other current and non-current assets	(2,887)	115	(2,542)
Accounts payable, accrued expenses and other current liabilities	(10,980)	30,615	3,774
Deferred revenue	(1,567)	(1,502)	(517)
Operating lease liabilities	(8,268)	—	—
Other liabilities	403	(1,758)	314
Cash flows from operating activities	47,112	60,710	57,187
Cash flows used in investing activities:			
Business acquisitions, net of cash acquired	(58,833)	—	(154,289)
Additions to property and equipment	(19,324)	(11,015)	(10,464)
Purchases of in-process research and development	(850)	—	—
Investment in cost and equity method investees	—	—	(42)
Issuances or purchases of notes receivable	(26,103)	(1,287)	(8,000)
Receipt of payment on notes receivable	31,696	—	4,000
Purchases of patents and patent licenses	—	(1,075)	—
Cash flows used in investing activities	(73,414)	(13,377)	(168,795)
Cash flows (used in) / from financing activities:			
Proceeds from credit facility	—	—	139,000
Repayments of credit facility	(4,000)	(4,000)	(74,700)
Payments of debt issuance costs	—	—	(438)
Repurchases of common stock	—	(1)	(9)
Issuances of common stock from equity-based plans	3,870	6,400	3,450
Cash flows (used in) / from financing activities	(130)	2,399	67,303
Net (decrease) / increase in cash and cash equivalents	(26,432)	49,732	(44,305)
Cash and cash equivalents at beginning of the period	146,061	96,329	140,634
Cash and cash equivalents at end of the period	$ 119,629	$ 146,061	$ 96,329

See accompanying notes to the consolidated financial statements.

ALARM.COM HOLDINGS, INC.
Consolidated Statements of Cash Flows - Continued
(in thousands)

	Year Ended December 31,		
	2019	2018	2017
Supplemental disclosures:			
Cash paid for interest	$ 2,730	$ 2,695	$ 2,010
Cash paid for / (received from) income taxes, net of refunds	2,254	(2,052)	1,805
Noncash investing and financing activities:			
Assumed options from business acquisition	—	—	1,375
Cash not yet paid for capital expenditures	837	1,857	322
Cash not yet paid for business and asset acquisitions - holdback	2,970	—	—
Contingent liability from business acquisition	2,595	—	—

See accompanying notes to the consolidated financial statements.

ALARM.COM HOLDINGS, INC.
Consolidated Statements of Equity
(in thousands)

	Redeemable Noncontrolling Interest	Preferred Stock Shares	Preferred Stock Amount	Common Stock Shares	Common Stock Amount	Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Equity
Balance as of December 31, 2016	**$ —**	**—**	**$ —**	**46,142**	**$ 461**	**$ 308,697**	**$ (117,909)**	**$ 191,249**
Adoption of accounting standard on employee share-based payments	—	—	—	—	—	31	(19)	12
Common stock issued in connection with equity-based plans	—	—	—	1,045	11	3,439	—	3,450
Vesting of common stock subject to repurchase	—	—	—	15	—	77	—	77
Stock-based compensation expense	—	—	—	—	—	7,413	—	7,413
Stock options assumed from acquisition	—	—	—	—	—	1,375	—	1,375
Net income	—	—	—	—	—	—	29,251	29,251
Balance as of December 31, 2017	**—**	**—**	**$ —**	**47,202**	**$ 472**	**$ 321,032**	**$ (88,677)**	**$ 232,827**
Adoption of accounting standard on revenue recognition	—	—	—	—	—	—	3,122	3,122
Common stock issued in connection with equity-based plans	—	—	—	888	9	6,391	—	6,400
Vesting of common stock subject to repurchase	—	—	—	12	—	55	—	55
Stock-based compensation expense	—	—	—	—	—	13,661	—	13,661
Net income	—	—	—	—	—	—	21,524	21,524
Balance as of December 31, 2018	**—**	**—**	**$ —**	**48,102**	**$ 481**	**$ 341,139**	**$ (64,031)**	**$ 277,589**
Adoption of accounting standard on leases	—	—	—	—	—	—	37	37
Common stock issued in connection with equity-based plans	—	—	—	598	6	3,864	—	3,870
Vesting of common stock subject to repurchase	—	—	—	1	—	8	—	8
Stock-based compensation expense	—	—	—	—	—	20,616	—	20,616
Noncontrolling interest assumed through acquisition	11,411	—	—	—	—	—	—	—
Net income attributable to common stockholders	(201)	—	—	—	—	—	53,531	53,531
Balance as of December 31, 2019	**$ 11,210**	**—**	**$ —**	**48,701**	**$ 487**	**$ 365,627**	**$ (10,463)**	**$ 355,651**

See accompanying notes to the consolidated financial statements.

Note 1. Organization

Alarm.com Holdings, Inc. (referred to herein as Alarm.com, the Company, or we) is the leading platform for the intelligently connected property. We offer a comprehensive suite of cloud-based solutions for the smart residential and commercial property, including interactive security, video monitoring, intelligent automation and energy management. Millions of property owners depend on our technology to intelligently secure, automate and manage their residential and commercial properties. Our solutions are delivered through an established network of over 9,000 trusted service provider partners, who are experts at selling, installing and supporting our solutions. We derive revenue from the sale of our cloud-based Software-as-a-Service, or SaaS, services, license fees, software, hardware, activation fees and other revenue. Our fiscal year ends on December 31.

Note 2. Summary of Significant Accounting Policies

Principles of Consolidation

Our consolidated financial statements include our accounts and those of our majority-owned and controlled subsidiaries after elimination of intercompany accounts and transactions. Equity investments over which we are able to exercise significant influence but do not control the investee are accounted for using the equity method.

We determine whether we have a controlling financial interest in an entity by first evaluating whether the entity is a voting interest entity or a variable interest entity, or VIE. Voting interest entities are entities that have sufficient equity and provide equity investor voting rights that give them power to make significant decisions relating to the entity's operations. The usual condition for a controlling financial interest in a voting interest entity is ownership of a majority voting interest. In VIEs, a controlling financial interest is attained through means other than voting rights and the entities lack one or more of the characteristics of a voting entity.

We have unconsolidated equity investments in third-party businesses. Equity investments with readily determinable fair values are recorded at fair value. Equity investments without readily determinable fair values are recorded using the measurement alternative. Under the alternative, we measure investments without readily determinable fair values at cost, less impairment, adjusted for observable price changes from orderly transactions for identical or similar investments. We make a separate election to use the measurement alternative for each eligible investment, and reassess whether an investment qualifies for the alternative at each reporting period. Adjustments resulting from impairment, fair value, or observable price changes are recorded in other income, net in our consolidated statements of operations.

Use of Estimates

The preparation of consolidated financial statements in conformity with accounting principles generally accepted in the United States of America, or GAAP, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. Our estimates, judgments and assumptions are continually evaluated based on available information and experience. Because of the use of estimates inherent in the financial reporting process, actual results could differ from those estimates. Estimates are used when accounting for revenue recognition, allowances for doubtful accounts, allowance for hardware returns, estimates of obsolete inventory, long-term incentive compensation, stock-based compensation, income taxes, legal reserves, contingent consideration and goodwill and intangible assets.

Reclassifications

Certain previously reported amounts in the consolidated statements of operations for the years ended December 31, 2018 and 2017 have been reclassified to conform to our current presentation to reflect interest income as a separate line item, which was previously included in other income, net.

Cash and Cash Equivalents

We consider all highly liquid instruments purchased with an original maturity from the date of purchase of three months or less to be cash equivalents. As of December 31, 2019 and 2018, we have invested $93.3 million and $117.4 million in cash equivalents in the form of money market funds with one financial institution, respectively. We consider these money market funds to be Level 1 financial instruments (see Note 10).

Accounts Receivable

Accounts receivable are principally derived from sales to customers located in the United States and Canada. Substantially all of our sales in Canada are transacted in U.S. dollars. Revenue in countries outside of North America accounted for 3%, 2% and 1% of our total revenue for the years ended December 31, 2019, 2018 and 2017, respectively. Accounts receivable balances related to service providers partners outside of North America were 7% and 4% as of December 31, 2019 and 2018, respectively. Our accounts receivable are stated at estimated realizable value. We utilize the allowance method to provide for doubtful accounts based on management's evaluation of the collectibility of the amounts due. Our estimate is based on historical collection experience and a review of the current status of accounts receivable. Each of our service provider partners is evaluated for creditworthiness through a credit review process at the inception of the arrangement or if risk indicators arise during our arrangement at such other time. Our terms for hardware sales to our service provider partners and distributors typically allow for returns for up to one year. We apply our estimate as a percentage of sales monthly, based on historical data, as a reserve against revenue to account for our provision for returns. We have not experienced write-offs for uncollectible accounts or sales returns that have differed significantly from our estimates.

Notes Receivable

Notes receivable are presented net of an allowance for uncollectibility, if any. We accrue interest on notes receivable based on the contractual terms of the note. Outstanding notes receivable that are aged 30 days or more from the contractual payment date are considered past due. Notes receivable are evaluated for impairment at least quarterly. Impairment occurs when it is deemed probable that we will not be able to collect all amounts due according to the contractual terms of the loan. Factors considered in determining impairment include payment status, collateral value and the probability of collecting payments when due. We do not accrue interest on notes receivable that are considered impaired or are greater than 90 days past due based on their contractual payment terms. Notes receivable may be placed on nonaccrual status earlier if, in management's opinion, a timely collection of the full principal and interest becomes uncertain. After a note receivable has been placed in nonaccrual status, interest will be recognized when cash is received. A note receivable may be returned to accrual status after all of the customer's delinquent balances of principal and interest have been settled, and collection of all remaining contractual amounts due is reasonably assured. See Note 9 for further details on loans provided to one of our distribution partners and one of our suppliers.

Inventory

Our inventory, which is comprised of raw materials and finished goods, includes materials used to produce our wireless communications network enabled radios, video cameras, video recorders, home automation system parts and peripherals, is stated at the lower of cost or net realizable value, and is charged to cost of sales on a first in, first out, or FIFO, basis when the inventory is shipped from our manufacturer and received by our service provider partners. We periodically evaluate our inventory quantities for obsolescence based on criteria such as customer demand and changing technology and record an obsolescence write-off when necessary.

Leases

We determine if an arrangement contains a lease at the inception of the arrangement. As part of the lease determination process, we assess several factors, including, but not limited to, whether we have the right to control and direct the use of the asset and whether the other party has a substantive substitution right. If we enter into leases that contain multiple components, we identify separate lease components based on whether or not the right to use the underlying assets is distinct and either highly dependent or highly interrelated with other rights in the contract. We also evaluate whether there are any non-lease components in the arrangement. For certain classes of underlying assets, such as data centers, we have elected not to separate non-lease components from lease components. For all other classes of underlying assets, if separate lease and non-lease components are identified, we allocate the consideration in the contract to the lease and non-lease components using the relative stand-alone selling price method at the lease inception.

Many of our leases include options to renew at our sole discretion. We also have several leases that provide us an option to terminate the lease prior to the end of the lease term. These renewal and termination options are included in the lease term at the commencement date when we are reasonably certain the options will be exercised. When assessing the likelihood of electing these options, we consider the length of the renewal period, market conditions, our expansion plans, the existence of a termination penalty, as well as other factors. Our lease agreements do not contain any material residual value guarantees, restrictive covenants or variable lease payments.

Right-of-use, or ROU, assets represent our right to use an underlying asset for the term of the lease and lease liabilities represent our obligation to make lease payments throughout the term of the lease. ROU assets and lease liabilities are recognized as of the commencement date of the lease based on the present value of contractual lease payments due over the term of the lease. We use our incremental borrowing rate to determine the present value of the lease payments, as our leases do not state the rate implicit in the lease. Our incremental borrowing rate is determined on a collateralized basis at the commencement date of the lease.

ROU assets and lease liabilities resulting from operating leases are recorded on our consolidated balance sheets. We did not have any finance leases or subleases as of December 31, 2019 and 2018.

Lease expense is recognized on a straight-line basis over the term of the lease and is recorded in general and administrative expense. Some of our leases include tenant improvement allowances, which are recorded when we are reasonably certain to utilize the allowance and are amortized on a straight-line basis over the shorter of the lease terms or the asset lives. Leases with an initial lease term of twelve months or less are considered short-term leases. Short-term leases are not recorded on our consolidated balance sheets. Expenses associated with short-term leases are recognized on a straight-line basis over the term of the lease and are recorded in general and administrative expense. Short-term lease costs were immaterial for the year ended December 31, 2019.

Redeemable Noncontrolling Interests

Noncontrolling interests with redemption features that are not solely within our control are considered redeemable noncontrolling interests. Our redeemable noncontrolling interest relates to our 85% equity ownership interest in PC Open Incorporated, a Washington corporation, doing business as OpenEye (see Note 7). The OpenEye stockholder agreement contains a put option that gives the minority OpenEye stockholders the right to sell their OpenEye shares to us based on the fair value of the shares. The OpenEye stockholder agreement also contains a call option that gives us the right to purchase the remaining OpenEye shares from the minority OpenEye stockholders based on the fair value of the shares. The put and call options can each be exercised beginning in the first quarter of 2023. This redeemable noncontrolling interest is considered temporary equity and we report it between liabilities and stockholders' equity in the consolidated balance sheets. The amount of the net income or loss attributable to redeemable noncontrolling interests is recorded in the consolidated statements of operations and the accretion of the redemption value is recorded as an adjustment to additional paid-in capital. The redemption value of the of the noncontrolling interest was $11.2 million as of December 31, 2019.

Internal-Use Software

We capitalize the costs directly related to the development of internal-use software for our platforms during the application development stage of the projects. Such costs primarily include payroll and payroll-related costs for engineers and product development employees directly associated with the development project. Our internal-use software is reported at cost less accumulated depreciation. Depreciation begins once the project is ready for its intended use, which is usually when the code goes into production in weekly software builds on our platforms. We depreciate the asset on a straight-line basis over a period of three years, which is the estimated useful life. We update our software for our SaaS multi-tenant platforms on a weekly basis utilizing continuous agile development methods, which primarily consists of bug-fixes and user interface changes. We evaluate whether a project should be capitalized if it adds significant functionality to our platforms. Maintenance activities or minor upgrades are expensed in the period performed.

External Software

Costs incurred in researching and developing a computer software product that will be marketed and sold are charged to expense when incurred until technological feasibility is established. Technological feasibility is established upon completion of a detailed program design or, in its absence, completion of a working model (a beta version). After technological feasibility is established, certain payroll and payroll-related costs are capitalized for engineers and product development employees directly associated with the development project. Cost capitalization ceases when the product is available for general release. Our non-hosted software is typically developed in an agile environment with frequent revisions to product release features and functions. Agile development results in a short duration between completion of the detailed program design and beta release. Accordingly, as of December 31, 2019, we do not have any capitalized external software due to the shorter development cycle associated with agile development.

Revenue Recognition

We derive our revenue from three primary sources: the sale of cloud-based SaaS services on our integrated Alarm.com platform, the sale of licenses and services on our non-hosted software platform, or Software platform, and the sale of hardware products. We sell our platform and hardware solutions to service provider partners that resell our solutions and hardware to residential and commercial property owners, who are the service provider partners' customers. Our subscribers consist of all of the properties maintained by those residential and commercial property owners to which we are delivering at least one of our solutions. We also sell our hardware to distributors who resell the hardware to service provider partners. We enter into contracts with our service provider partners that establish pricing for access to our platform solutions and for the sale of hardware. These service provider contracts typically have an initial term of one year , with subsequent renewal terms of one year. Our service provider partners typically enter into contracts with our subscribers, which our service provider partners have indicated range from three to five years in length.

Our hardware includes cellular radio modules that enable access to our cloud-based platforms, as well as video cameras, video recorders, image sensors and other peripherals. Our service provider partners may purchase our hardware in anticipation of installing the hardware in a residential or commercial property when they create a new subscriber account, or for use in existing subscriber properties. The purchase of hardware occurs in a transaction that is separate and typically in advance of the purchase of our platform services. The performance obligation is primarily satisfied when the hardware is received by our service provider partner or distributor. Service provider partners transact with us to purchase our platform solutions and resell our solutions to a new subscriber, or to upgrade or downgrade the solutions of an existing subscriber, at which time the subscriber's access to our platform solutions is enabled and the delivery of the services commences. Our performance obligation related to providing our platform solutions is satisfied on a daily basis as the subscriber uses the platform services. The purchase of platform solutions and the purchase of hardware are separate transactions as revenue is recognized when control of the promised goods or services are transferred to our customers, in an amount that reflects the consideration that we expect to receive in exchange for those goods or services. We generate all of our revenue from contracts with customers.

SaaS and license revenue associated with our contracts is invoiced and revenue is recognized at an amount that corresponds directly with the value of the performance completed to date. Additionally, the consideration received from hardware sales corresponds directly with the stand-alone selling price of the hardware. As a result, we have elected to use the practical expedient related to the amount of transaction price allocated to the unsatisfied performance obligations and therefore, we have not disclosed the total remaining revenue expected to be recognized on all contracts or the expected period over which the remaining revenue would be recognized for the current period or any prior period.

To determine the transaction price, we analyze all of the performance obligations included in the contract. We consider the terms of the contract and our customary business practices, which typically do not include financing components or non-cash consideration. We have variable consideration in the form of retrospective volume discounts, rebate incentives, restocking fees and assurance-type warranties. The significant inputs related to variable consideration include the volume and amount of products and services sold historically and expected to be sold in the future, the availability and performance of our services and the historical and expected number of returns. Depending on the type of variable consideration and its predictability, we may apply an "expected value" approach or a "most likely amount" approach. We estimate the variable consideration at the onset of a contract and include the variable consideration within the transaction price if it is probable that a significant reversal of the variable consideration would not occur in the future. When determining whether the amount of variable consideration included in the transaction price should be constrained, we look at the history of hardware purchased and subscribers added by our service provider partners to estimate the likelihood of those service provider partners obtaining the retrospective volume discounts and rebates. At times, our contracts include consideration payable to a customer in the form of fixed discounts or rebates. We record the consideration payable to a customer as a reduction to the transaction price resulting in a reduction to revenue over the service period.

If we enter into contracts that contain multiple promised services, we evaluate which of the promised services represent separate performance obligations based on whether or not the promised services are distinct and whether or not the services are separable from other promises in the contract. If these criteria are met, then we allocate the transaction price to the performance obligations using the relative stand-alone selling price method at contract inception.

In determining the relative estimated selling prices, we consider market conditions, entity-specific factors and information about the customer or class of customer. Any discount within the contract is allocated proportionately to all of the separate performance obligations in the contract unless the terms of discount relate specifically to the entity's efforts to satisfy some but not all of the performance obligations.

For our standard service provider agreements, we have used a portfolio approach for purposes of revenue recognition, as each agreement has similar characteristics and we do not expect the effects of applying this approach would have a material impact on our financial statements as compared to assessing each agreement individually.

SaaS and License Revenue

We generate the majority of our SaaS and license revenue primarily from monthly fees charged to our service provider partners sold on a per subscriber basis for access to our cloud-based intelligently connected property platform and related solutions. Our fees per subscriber vary based upon the service plan and features utilized.

Under the terms of our contractual arrangements with our service provider partners, we bill a monthly fee to our service provider partners in advance of the month of service, with the exception of the initial partial month of service, which is paid in arrears. Due to the limited period of time between receipt of payment and delivery of service, we have not accounted for these advance payments as significant financing components. We typically transfer the promised SaaS services to our customers over time, which is evidenced by the fact that the customers receive and consume the benefits provided by our performance of the services as such services are rendered. As a result, we recognize revenue from SaaS services on a monthly basis as we satisfy our performance obligations. We have demonstrated that we can sell our SaaS offering on a stand-alone basis, as it can be sold separately from hardware and activation services. As there is neither a minimum required initial service term nor a stated renewal term in our contractual arrangements, we recognize revenue over the period of service, which is monthly. Our service provider partners typically incur and pay the same monthly fee per subscriber account for the entire period a subscriber account is active.

We offer multiple service level packages for our platform solutions including a range of solutions and a range of a la carte add-ons for additional features. The fee paid by our service provider partners each month for the delivery of our solutions is based on the combination of packages and add-ons enabled for each subscriber. We utilize tiered pricing plans where our service provider partners may receive prospective pricing discounts driven by volume.

We also generate SaaS and license revenue from the fees paid to us when we license our intellectual property to third parties for use of our patents. We bill a monthly fee to third parties based on the number of customers that were active during the prior month. We apply the usage-based royalty exception to recognize license revenue because the sole or predominant item to which the royalty relates is the license of intellectual property. Under the usage-based royalty exception, we recognize revenue on a monthly basis over the period of service. In addition, in certain markets our EnergyHub subsidiary sells its demand response service for an annual service fee, with pricing based on the number of subscribers or amount of aggregate electricity demand made available for a utility’s or market’s control.

Software License Revenue

Our SaaS and license revenue also includes our software license revenue from monthly fees charged to service providers sold on a per subscriber basis for access to our Software platform. The non-hosted software for interactive security, automation and related solutions is typically deployed and operated by the service provider in its own network operations center. Our agreements for the Software platform solution typically include software and services, such as post-contract customer support, or PCS. Software sales that include multiple elements are typically allocated to the various elements using the relative stand-alone selling price method. We apply the usage-based royalty exception to recognize license revenue associated with software hosted by our customers because the predominant item to which the royalty relates is the license of intellectual property. Under the usage-based royalty exception, we recognize revenue on a monthly basis over the period during which the services are expected to be performed. Under the terms of our contractual arrangements with our service provider partners, we are entitled to payment of a monthly fee that is billed per subscriber for the month of service. Our software license revenue during the years ended December 31, 2019, 2018 and 2017 was $43.4 million, $41.3 million and $29.7 million, respectively.

Hardware and Other Revenue

We generate hardware and other revenue primarily from the sale of video cameras, video recorders and cellular radio modules that provide access to our cloud-based platforms and, to a lesser extent, the sale of other devices, including image sensors and peripherals. We primarily transfer hardware to our customers upon delivery to the customer, which corresponds with the time at which the customer obtains control of the hardware. As a result, we recognize hardware and other revenue as we satisfy our performance obligations, which primarily occurs when the hardware is received by our service provider partner or distributor, net of a reserve for estimated returns. There are a few contracts in which we provide shipping and handling services to the customer after control of the hardware transfers to the customer. In these instances, we have elected to account for shipping and handling costs as activities performed to fulfill the promise to transfer hardware to the customer and not as a separate promised service.

Amounts due from the sale of hardware are payable in accordance with the terms of our agreements with our service provider partners or distributors, and are not contingent on resale to end-users, or to service provider partners in the case of sales of hardware to distributors. Payment for our hardware is typically due within 30 days from shipment, with the exception of certain hardware finance arrangements, which are paid over a 36-month period. Our distributors sell directly to our service provider partners under terms between the two parties.

When determining the amount of consideration we expect to be entitled to for the sale of our hardware, we estimate the variable consideration associated with customer returns. We record a reserve against revenue for hardware returns based on historical returns. For the years ended December 31, 2019, 2018 and 2017, our reserve against revenue for hardware returns was 1%, 2% and 2% of hardware and other revenue, respectively. We evaluate our hardware reserve on a quarterly basis or if there is an indication of significant changes in return experience. Historically, our returns of hardware have not significantly differed from our estimated reserve. Additionally, we provide assurance-type warranties related to the intended functionality of the products and services provided and those warranties typically allow for the return of hardware up to one year past the date of sale. These warranties were not identified as separate performance obligations.

Our hardware and other revenue also includes our revenue from the sale of perpetual licenses that provide our customers in the commercial market the right to use our OpenEye video surveillance software for an indefinite period of time in exchange for a one-time license fee, which is generally paid at contract inception. Our perpetual licenses provide a right to use intellectual property that is functional in nature and has significant stand-alone functionality. Accordingly, for perpetual licenses of functional intellectual property, revenue is recognized at the point-in-time when control has been transferred to the customer, which occurs once the software has been made available to the customer.

Hardware and other revenue may also include activation fees charged to some of our service provider partners for activation of a new subscriber account on our platforms, as well as fees paid by service provider partners for our marketing services. Our service provider partners use services on our platforms, such as support tools and applications, to assist in the installation of our solutions in subscriber properties. This installation marks the beginning of the service period on our platforms and, on occasion, we earn activation revenue for fees charged for this service. The activation fee is non-refundable, separately negotiated and specified in our contractual arrangements with our service provider partners and is charged to the service provider partner for each subscriber activated on our platforms. The decision whether to charge an activation fee is based in part on the expected number of subscribers to be added by our service provider partners and as a result, many of our largest service provider partners do not pay an activation fee. Activation fees are not offered on a stand-alone basis separate from our SaaS offering and are billed and received at the beginning of the arrangement. We record activation fees initially as deferred revenue and we recognize these fees ratably over the expected term of the subscribers' account which we estimate is ten years based on our annual attrition rate. The portion of these activation fees included in current and long-term deferred revenue as of our balance sheet date represents the amounts that will be recognized ratably as revenue over the following twelve months, or longer as appropriate, until the ten-year expected term is complete. The balance of deferred revenue for activation fees was $8.1 million and $9.2 million as of December 31, 2019 and 2018, respectively, which combines current and long-term balances.

Cost of Revenue

Our cost of SaaS and license revenue primarily includes the amounts paid to wireless network providers and, to a lesser extent, the costs of running our network operations centers which are expensed as incurred, as well as patent and royalty costs in connection with technology licensed from third-party providers. Our cost of SaaS and license revenue also includes our cost of software license revenue, which primarily includes the payroll and payroll-related costs of the department dedicated to providing service exclusively to those service providers that host the Software platform. Our cost of software license revenue during the years ended December 31, 2019, 2018 and 2017 was $1.3 million, $1.7 million and $1.2 million, respectively. Our cost of hardware and other revenue primarily includes cost of raw materials, tooling and amounts paid to our third-party manufacturer for production and fulfillment of our cellular radio modules and image sensors, and procurement costs for our video cameras and video recorders, which we purchase from an original equipment manufacturer, and other devices. Our cost of hardware and other revenue also includes royalty costs in connection with technology licensed from third-party providers.

We record the cost of SaaS and license revenue as expenses are incurred, which corresponds to the delivery period of our services to our subscribers. We record the cost of hardware and other revenue primarily when the hardware and other services are delivered to the service provider partner, which occurs when control of the hardware and other services transfers to the service provider partner. Our cost of revenue excludes amortization and depreciation shown in operating expenses.

Contract Asset and Contract Liability Balances

At contract inception, we assess the goods and services promised in our contracts with customers and identify a performance obligation for each distinct promise to transfer a good or service, or bundle of goods or services. To identify the performance obligations, we consider all of the goods or services promised in the contract, whether explicitly stated or implied based on customary business practices. We record a contract asset when we satisfy a performance obligation by transferring a promised good or service. Contract assets can be conditional or unconditional depending on whether another performance obligation must be satisfied before payment can be received. We receive payments from our service provider partners based on the billing schedule established in our contracts. All of the accounts receivable presented in the balance sheet represent unconditional rights to consideration. We do not have any assets from contracts containing conditional rights and we do not have any assets from satisfied performance obligations that have not been invoiced.

We recognize an asset related to the costs incurred to obtain a contract only if we expect to recover those costs and we would not have incurred those costs if the contract had not been obtained. We recognize an asset from the costs incurred to fulfill a contract if the costs (i) are specifically identifiable to a contract, (ii) enhance resources that will be used in satisfying performance obligations in future and (iii) are expected to be recovered. Our contract assets consist of capitalized commission costs and upfront payments made to a customer. Based on the policy above, we capitalize a portion of our commission costs as an incremental cost of obtaining a contract. When calculating the incremental cost of obtaining a contract, we exclude any commission costs related to metrics that could be satisfied without obtaining a contract, including training-related metrics. We amortize our commission costs over a period of three years, which is consistent with the period over which the products and services related to the commission are transferred to the customer. The three-year period was determined based on our review of historical enhancements and upgrades to our products and services. We applied the portfolio approach to account for the amortization of contract costs as each contract has similar characteristics. Upfront payments made to a customer are capitalized and amortized over the expected period of benefit and are recorded as a reduction to revenue.

Contract liabilities include payments received in advance of performance under the contract, and are realized with the associated revenue recognized under the contract. All of the deferred revenue presented in the balance sheets represents contract liabilities resulting from advance cash receipts from customers or amounts billed in advance to customers from the sale of services. Changes in deferred revenue are due to our performance under the contract as well as to cash received from new contracts for which services have not been provided.

Research and Development

Our research and development costs consist primarily of personnel and related expenses for our employees working on our product development and software and device engineering teams, including salaries, bonuses, stock-based compensation, benefits and other personnel costs. Our research and development of new products and services is a multidisciplinary effort across our product management, program management, software engineering, device engineering, quality engineering, configuration management and network operations teams. Also included are non-personnel costs, such as consulting and professional fees paid to third-party development resources. We invest substantial resources in research and development to enhance our platforms and applications, support our technology infrastructure, develop new capabilities and conduct quality assurance testing.

Fair Value Measurements

The accounting standard for fair value measurements provides a framework for measuring fair value and requires disclosures regarding fair value measurements. Fair value is defined as the price that would be received for an asset or the exit price that would be paid to transfer a liability in the principal or most advantageous market in an orderly transaction between market participants on the measurement date. This accounting standard established a fair value hierarchy, which requires an entity to maximize the use of observable inputs, where available. The following summarizes the three levels of inputs:

Level 1 - Quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date;

Level 2 - Inputs other than quoted prices included within Level 1 that are observable for similar assets and liabilities, either directly or indirectly; quoted prices in markets that are not active; and

Level 3 - Unobservable inputs supported by little or no market activity.

The carrying amount of financial assets, including cash and cash equivalents, accounts receivable and accounts payable approximates fair value because of the short maturity and liquidity of those instruments.

Assets and Liabilities Measured at Fair Value on a Recurring Basis - in 2019, 2018 and 2017, we recorded liabilities for subsidiary unit awards and a contingent consideration liability related to acquisitions at fair value on a recurring basis.

Assets Measured at Fair Value on a Nonrecurring Basis - We measure certain assets, including property and equipment, goodwill and intangible and long-lived assets at fair value on a nonrecurring basis. These assets are recognized at fair value when they are deemed to be other-than-temporarily impaired. Additionally, equity investments without readily determinable fair values are recognized at fair value on a nonrecurring basis when observable price changes from orderly transactions for identical or similar investments become available.

Concentration of Credit Risk

The financial instruments that potentially subject us to concentrations of credit risk consists principally of cash and cash equivalents and accounts receivables. All of our cash and cash equivalents are held at financial institutions that management believes to be of high credit quality. Our cash and cash equivalent accounts may exceed federally insured limits at times. We have not experienced any losses on cash and cash equivalents to date. To manage accounts receivable risk, we evaluate the credit worthiness of our service provider partners and maintain an allowance for doubtful accounts. The majority of our accounts receivable balance is due from our service provider partners in North America. We assess the concentrations of credit risk with respect to accounts receivables based on one industry and geographic region and believe that our reserve for uncollectible accounts is appropriate based on our history and this concentration.

Stock-Based Compensation

We compensate our executive officers, board of directors, employees and consultants with stock-based compensation plans under our 2015 Equity Incentive Plan, or 2015 Plan. We record stock-based compensation expense based upon the award's grant date fair value and use an accelerated attribution method, net of actual forfeitures, in which compensation cost for each vesting tranche in an award is recognized ratably from the service inception date to the vesting date for that tranche. Our equity awards generally vest over five years and are settled in shares of our common stock. During 2019, 2018 and 2017, we recognized compensation expense of $20.6 million, $13.4 million and $7.4 million, respectively, and associated income tax benefit of $5.2 million, $7.6 million and $12.7 million, respectively, in connection with our stock-based compensation plans. We account for stock-based compensation arrangements with non-employees based upon the award's grant date fair value. The fair value of these options is measured using the Black-Scholes option pricing model reflecting the same assumptions as applied to employee options in each of the reported periods, other than the expected life, which is assumed to be the remaining contractual life of the option.

Our Employee Stock Purchase Plan, or 2015 ESPP, allows eligible employees to purchase shares of our common stock at 90% of the fair market value of the closing price on the purchase date. The maximum number of shares of our common stock that a participant may purchase during any calendar year is limited to the lesser of 10% of the participant's base compensation for that year or the number of shares with a fair market value of $15,000. The 2015 ESPP is considered compensatory for purposes of share-based compensation expense. Compensation expense is recognized for the amount of the discount, net of actual forfeitures, over the six-month purchase period.

401(k) Defined Contribution Plan

We adopted the Alarm.com Holdings 401(k) Plan, or the Plan, on April 30, 2009. All of our employees are eligible to participate in the Plan. For the years ended December 31, 2019 and 2018, our discretionary match was 100% of employee contributions up to 10% of salary and up to a $4,000 maximum match. For the year ended December 31, 2017, our discretionary match was 100% of employee contributions up to 6% of salary and up to a $3,000 maximum match. We recognized compensation expense of $3.2 million, $2.7 million and $1.8 million for the years ended December 31, 2019, 2018 and 2017, respectively, related to our matching contributions.

Business Combinations

We are required to allocate the purchase price of acquired companies to the identifiable tangible and intangible assets acquired and liabilities assumed at the acquisition date based upon their estimated fair values. The net assets and results of operations of an acquired entity are included in our consolidated financial statements from the acquisition date. Acquisition-related costs are expensed as incurred. Goodwill as of the acquisition date represents the excess of the purchase consideration of an acquired business over the fair value of the underlying net tangible and intangible assets acquired net of liabilities assumed. This valuation requires management to apply significant judgment in estimating the fair value of long-lived and intangible assets acquired, which involves the use of significant estimates and assumptions.

Significant estimates and assumptions in valuing intangible assets include estimates about future expected cash flows, discount rates, attrition rates related to acquired customer relationships, royalty rates and obsolescence factors related to acquired developed technology and royalty rates relate to acquired trade names.

During the measurement period, we may record adjustments to the assets acquired and liabilities assumed. Any adjustments to provisional amounts that are identified during the measurement period are recorded in the reporting period in which the adjustment amounts are determined. Upon the conclusion of the measurement period, any subsequent adjustments are recorded to earnings.

Some acquisitions may include contingent consideration, which is an obligation to make future payments to the seller contingent upon the achievement of future operational or financial targets. We estimated the fair value of the contingent consideration liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. Significant estimates and assumptions in valuing contingent consideration include estimates about future financial results, revenue volatility and the discount rate. The fair value of the contingent consideration is estimated on a quarterly basis and changes in the fair value of the contingent consideration resulting from information that existed subsequent to the acquisition date are recorded in the consolidated statements of operations.

On October 21, 2019, we acquired 85% of the issued and outstanding capital stock of OpenEye. Certain stockholders of OpenEye have the right to receive an earn-out payment of up to an additional $11.0 million based upon satisfaction of certain calendar 2020 revenue targets. As of December 31, 2019, the estimated fair value of the contingent consideration related to the potential earn-out payment using a Monte Carlo simulation model was $2.6 million, and this amount is recorded in accrued compensation in the consolidated balance sheets.

Goodwill, Intangible Assets and Long-lived Assets

Goodwill

Goodwill represents the excess of (1) the aggregate of the fair value of consideration transferred in a business combination, over (2) the fair value of assets acquired, net of liabilities assumed. Goodwill is allocated to our reporting units, which are our operating segments or one level below our operating segments. Goodwill is not amortized, but is subject to annual impairment tests. We perform our annual impairment review of goodwill on October 1 and when a triggering event occurs between annual impairment tests. We test our goodwill at the reporting unit level. We perform either a qualitative analysis or a quantitative analysis every year depending on the changes to our goodwill balance as well as changes in our business and the economy. Qualitative factors we consider include, but are not limited to, macroeconomic conditions, industry and market conditions, company specific events, changes in circumstances and market capitalization. The amount of goodwill impairment is calculated as the amount by which a reporting unit's carrying value exceeds its fair value, not to exceed the carrying amount of goodwill.

For our 2019 annual impairment review, we performed a qualitative assessment for our Alarm.com reporting unit, our only reporting unit with a goodwill balance. Based on the results of our qualitative assessment, we determined that it was not more likely than not that the fair value of our reporting unit was less than its carrying amount, including goodwill. Therefore, we concluded that there was no goodwill impairment as of October 1, 2019. Our assessment was performed as of October 1, 2019, and we have determined there have been no triggering events from our assessment date through December 31, 2019.

Intangible Assets and Long-lived Assets

Intangible assets are initially valued at fair value using generally accepted valuation methods appropriate for the type of intangible asset. Intangible assets with definite lives are amortized over their estimated useful lives. We evaluate the recoverability of our intangible assets with definite lives and long-lived assets for impairment whenever events or circumstances indicate that the carrying amount of the assets may not be recoverable. Recoverability of intangible assets with definite lives and long-lived assets are measured by comparison of the carrying amount of the asset to the future undiscounted cash flows the asset is expected to generate. If the asset is considered to be impaired, the amount of any impairment is measured as the difference between the carrying value and the fair value of the impaired asset.

For the year ended December 31, 2019, we determined there were no impairments of our intangible assets with definite lives or long-lived assets.

Advertising Costs

We expense advertising costs as incurred. Advertising costs totaled $7.5 million, $11.4 million and $4.1 million for the years ended December 31, 2019, 2018 and 2017, respectively. Advertising costs are included within sales and marketing expenses on our consolidated statements of operations.

Accounting for Income Taxes

We account for income taxes under the asset and liability method as required by accounting standards codification, or ASC 740, "*Income Taxes*," which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that are included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date.

We record net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such a determination, we consider all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. Due to the uncertainty of realization of certain deferred tax assets related to our Canadian net operating losses and research and development tax credits, we established a valuation allowance of $0.3 million during the second quarter of 2019, which remained at $0.3 million as of December 31, 2019. As of December 31, 2018, based on our historical and expected future taxable earnings, we believed it was more likely than not that we would realize all of the benefit of the existing deferred tax assets. Accordingly, we did not record a valuation allowance as of December 31, 2018.

We are subject to income taxes in the United States and foreign jurisdictions based upon our business operations in those jurisdictions. Significant judgment is required in evaluating uncertain tax positions. We record uncertain tax positions in accordance with ASC 740-10 on the basis of a two-step process whereby (1) we determine whether it is more likely than not that the tax positions will be sustained based on the technical merits of the position, and (2) with respect to those tax positions that meet the more-likely-than-not recognition threshold, we recognize the largest amount of tax benefit that is greater than 50% likely to be realized upon ultimate settlement with the related tax authority. We record interest and penalties as a component of our income tax provision.

Comprehensive Income

Our comprehensive income for each of the years ended December 31, 2019, 2018 and 2017 was equal to our net income disclosed in the consolidated statements of operations.

Earnings per Share

Our basic net income per share attributable to common stockholders is calculated by dividing the net income attributable to common stockholders by the weighted-average number of shares of common stock outstanding for the period.

Our diluted net income per share attributable to common stockholders is calculated by giving effect to all potentially dilutive common stock when determining the weighted-average number of common shares outstanding. For purposes of the diluted net income per share calculation, options to purchase common stock, restricted stock units and unvested shares issued upon the early exercise of options that are subject to repurchase are considered to be potential common stock.

We have issued securities other than common stock that participate in dividends ("participating securities"), and therefore utilize the two-class method to calculate net income per share. These participating securities include unvested shares issued upon the early exercise of options that are subject to repurchase which have non-forfeitable rights to participate in any dividends declared on our common stock. The two-class method requires a portion of net income to be allocated to the participating securities to determine the net income attributable to common stockholders. We also have redeemable noncontrolling interest related to our 85% equity ownership interest in OpenEye. When calculating net income attributable to the common stockholders, net income attributable to redeemable noncontrolling interest should be excluded from net income. As a result, net income attributable to the common stockholders is equal to the net income less (i) dividends paid on unvested shares with any remaining earnings allocated in accordance with the bylaws between the outstanding common and preferred stock and (ii) net income attributable to redeemable noncontrolling interest as of the end of each period.

Recent Accounting Pronouncements

Adopted

On February 25, 2016, the Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, 2016-02, "*Leases (Topic 842)*" or Topic 842, which requires lessees to recognize operating and financing lease liabilities and corresponding ROU assets on the balance sheet. The update also requires improved disclosures to help users of financial statements better understand the amount, timing and uncertainty of cash flows arising from leases. In July 2018, the FASB amended the update to allow entities to apply the transition requirements of Topic 842 at the adoption date rather than at the beginning of the earliest comparative period presented. Accordingly, the amendments in Topic 842 were effective for us beginning January 1, 2019.

On January 1, 2019, we adopted Topic 842 by applying the modified retrospective approach to all of our leases in effect as of that date. We used the optional transition method, which required us to record the initial effect of Topic 842 as a cumulative-effect adjustment to retained earnings on January 1, 2019. Additionally, we elected to use the package of practical expedients for the adoption of Topic 842, which allowed us 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 existing leases qualify for capitalization under Topic 842. We also used the hindsight practical expedient when determining the lease term and assessing impairment of ROU assets.

The adoption of Topic 842 resulted in the recording of the following amounts on our consolidated balance sheets (in thousands):

Balance Sheet Caption	**As of January 1, 2019**
Property and equipment, net	$ 1,057
Operating lease right-of-use assets	28,432
Operating lease liabilities (current)	5,699
Operating lease liabilities (noncurrent)	36,957
Accounts payable, accrued expenses and other current liabilities	(1,548)
Other liabilities	(11,656)
Accumulated deficit	37

The adoption of Topic 842 did not materially impact our consolidated statements of operations, consolidated statement of equity or consolidated statements of cash flows.

Not Yet Adopted

On June 16, 2016, the FASB issued ASU 2016-13, "*Financial Instruments - Credit Losses (Topic 326),*" which provides guidance designed to provide financial statement users with more information about the expected credit losses on financial instruments and other commitments to extend credit held by a reporting entity at each reporting date. From November 2018 to February 2020, amendments to Topic 326 were issued to clarify numerous accounting topics. When determining such expected credit losses, the guidance requires companies to apply a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. The amendment is effective on a modified retrospective basis for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted for fiscal years and interim periods beginning after December 15, 2018. To date, we have assessed the manner in which we currently estimate the allowance for doubtful accounts on our trade receivables, the composition of our notes receivable and our historical credit loss activity. We are currently assessing forecasted market conditions and the impact this pronouncement may have on our consolidated financial statements. This pronouncement will require additional disclosures within our notes to the consolidated financial statements.

On August 28, 2018, the FASB issued ASU 2018-13, "*Fair Value Measurement (Topic 820): Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement,"* which provides guidance designed to improve the effectiveness of fair value measurement disclosures in notes to the financial statements. The update removes several existing disclosure requirements, including, but not limited to: (i) the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, (ii) the policy for timing of transfers between levels and (iii) the valuation processes for Level 3 fair value measurements. The update also adds additional disclosure requirements for public companies, including but not limited to: (i) the changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period and (ii) the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements. The update also modifies and clarifies several existing disclosure requirements. The amendment in this update is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. The additional disclosure requirements and one of the modifications to an existing disclosure requirement should be applied prospectively while all other disclosure changes should be applied retrospectively to all periods presented upon the effective date. Early adoption is permitted. We are currently assessing the impact this pronouncement may have on our fair value measurement disclosures; however, this pronouncement is not expected to have a material impact on our consolidated financial statements.

On December 18, 2019, the FASB issued ASU 2019-12, "*Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes,*" which simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The update also simplifies GAAP for other areas of Topic 740 by clarifying and amending existing guidance to improve consistent application. The amendment in this update is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. Early adoption is permitted. We are currently assessing the impact this pronouncement may have on our consolidated financial statements.

On January 16, 2020, the FASB issued ASU 2020-1, "*Investments-Equity Securities (Topic 321), Investments-Equity Method and Joint Ventures (Topic 323), and Derivatives and Hedging (Topic 815): Clarifying the Interactions between Topic 321, Topic 323, and Topic 815*," which provides guidance on the interaction between accounting standards related to equity securities, equity method investments and certain derivatives. This amendment clarifies that an entity should consider observable transactions that require it to either apply or discontinue the equity method of accounting for the purposes of applying the measurement alternative immediately before applying, or upon discontinuing, the equity method. The amendment also clarifies that an entity should not consider whether, upon the settlement of the forward contract or exercise of the purchased option, individually or with existing investments, the underlying securities would be accounted for under the equity method or the fair value option in accordance with the financial instruments guidance. The amendment in this update is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years. Early adoption is permitted. This pronouncement is not expected to have a material impact on our consolidated financial statements.

Note 3. Revenue from Contracts with Customers

Contract Assets

Our contract assets consist of capitalized commission costs and upfront payments made to customers. The current portion of capitalized commission costs and upfront payments made to customers are included in other current assets within our consolidated balance sheets. The non-current portion of capitalized commission costs and upfront payments made to customers are reflected in other assets within our consolidated balance sheets. Our amortization of contract assets during the years ended December 31, 2019 and 2018 were $2.4 million and $2.0 million, respectively. There were no amortized commission costs during the year ended December 31, 2017.

We review the capitalized costs for impairment at least annually. Impairment exists if the carrying amount of the asset recognized from contract costs exceeds the remaining amount of consideration we expect to receive in exchange for providing the goods and services to which such asset relates, less the costs that relate directly to providing those good and services and that have not been recognized as an expense. We did not record an impairment loss on our contract assets during the years ended December 31, 2019, 2018 and 2017.

The changes in our contract assets are as follows (in thousands):

	Year Ended December 31,	
	2019	2018
Beginning of period balance	$ 2,881	$ —
Commission costs and upfront payments to a customer capitalized in period	4,141	4,864
Amortization of contract assets	(2,444)	(1,983)
End of period balance	$ 4,578	$ 2,881

Contract Liabilities

Contract liabilities include payments received in advance of performance under the contract, and are realized with the associated revenue recognized under the contract. The changes in our contract liabilities are as follows (in thousands):

	Year Ended December 31,	
	2019	2018
Beginning of period balance	$ 11,176	$ 12,678
Revenue deferred and acquired in current period	6,127	3,954
Revenue recognized from amounts included in contract liabilities	(6,805)	(5,456)
End of period balance	$ 10,498	$ 11,176

The revenue recognized from amounts included in contract liabilities primarily relates to prepayment contracts with customers as well as payments of activation fees.

Note 4. Accounts Receivable, Net

The components of accounts receivable, net are as follows (in thousands):

	December 31,	
	2019	2018
Accounts receivable	$ 80,032	$ 52,850
Allowance for doubtful accounts	(2,584)	(1,425)
Allowance for product returns	(1,075)	(1,915)
Accounts receivable, net	$ 76,373	$ 49,510

For the years ended December 31, 2019, 2018 and 2017, we recorded a provision for doubtful accounts of $1.2 million, $0.1 million and $0.5 million, respectively.

For the year ended December 31, 2019, we recorded a reduction to the reserve for product returns of $0.1 million. For the years ended December 31, 2018 and 2017, we recorded a $0.3 million and $2.1 million reserve for product returns in our hardware and other revenue, respectively. Historically, we have not experienced write-offs for uncollectible accounts or sales returns that have differed significantly from our estimates.

Note 5. Inventory, Net

The components of inventory, net are as follows (in thousands):

	December 31,	
	2019	2018
Raw materials	$ 8,921	$ 6,396
Finished goods	25,247	16,594
Total inventory, net	$ 34,168	$ 22,990

Note 6. Property and Equipment, Net

Furniture and fixtures, computer software and equipment, leasehold improvements and real property are recorded at cost and presented net of depreciation. We record land at historical cost. During the application development phase, we record capitalized development costs in our construction in progress account and then reclass the asset to internal-use software when the project is ready for its intended use, which is usually when the code goes into production. Furniture, fixtures and office equipment and computer software and hardware are depreciated on a straight-line basis over lives ranging from three to five years. Internal-use software is amortized on a straight-line basis over a three-year period. Leasehold improvements are amortized on a straight-line basis over the shorter of the lease terms or the asset lives. Real property is amortized on a straight-line basis over lives ranging from 15 to 39 years.

The components of property and equipment, net are as follows (in thousands):

	December 31,	
	2019	2018
Furniture, fixtures and office equipment	$ 5,604	$ 4,102
Computer software and hardware	17,767	16,228
Internal-use software	8,949	5,072
Construction in progress	4,232	3,790
Leasehold improvements	23,223	18,338
Real property	4,917	707
Land	1,398	508
Total property and equipment	66,090	48,745
Accumulated depreciation	(27,542)	(20,988)
Property and equipment, net	$ 38,548	$ 27,757

Depreciation expense related to property and equipment for the years ended December 31, 2019, 2018 and 2017 was $5.9 million, $5.7 million and $5.4 million, respectively. Amortization expense related to internal-use software of $1.9 million, $0.8 million and $0.4 million was included in those expenses for the years ended December 31, 2019, 2018 and 2017, respectively. We had no disposals and write-offs of property and equipment that impacted the consolidated statements of operations during the year ended December 31, 2019. Within the Alarm.com segment, we disposed of and wrote off $1.4 million and $0.8 million of capitalized costs to research and development expenses within the consolidated statements of operations primarily related to the design of internal-use software that no longer met the requirements for capitalization during the years ended December 31, 2018 and 2017, respectively. In December 2019, we purchased land and a commercial building located in Liberty Lake, Washington for $5.1 million. Once renovations are complete, this building will be used by OpenEye for sales and training, research and development, warehousing and administrative purposes.

Note 7. Acquisitions

Asset Acquisition

On September 18, 2019, Alarm.com Incorporated, one of our wholly-owned subsidiaries, acquired certain assets of an unrelated third party. Substantially all of the acquired assets consisted of in-process research and development, or IPR&D. We believe the acquisition of the IPR&D will strengthen our comprehensive suite of cloud-based solutions.

In consideration for the purchase of the IPR&D, we paid $0.9 million in cash on September 18, 2019, with the remaining $0.1 million expected to be paid 18 months following the acquisition date, subject to offset for any indemnification obligations. The $1.0 million consideration related to IPR&D was expensed at the time of the asset acquisition and was included in research and development expense in our consolidated statements of operations during 2019, as the IPR&D had no alternative future use.

OpenEye

On October 21, 2019, Alarm.com Incorporated, one of our wholly-owned subsidiaries, acquired 85% of the issued and outstanding capital stock of OpenEye. OpenEye provides cloud-managed video surveillance solutions for the enterprise commercial market. We believe the acquisition of OpenEye will provide a key element to our comprehensive suite of interactive cloud-based services spanning video, access control, intrusion and automation for domestic and international commercial enterprises.

In consideration for the purchase of 85% of the issued and outstanding capital stock of OpenEye, we paid $61.2 million in cash on October 21, 2019, after deducting $2.8 million related to an agreed holdback. Pursuant to the terms of the stock purchase agreement, following the preliminary determination of the working capital of OpenEye as of the closing date, the purchase price increased by $0.2 million. The working capital adjustment is expected to be finalized and paid to the stockholders of OpenEye in the first half of 2020 along with a portion of the holdback. The remaining amount of the holdback is expected to be paid to the stockholders of OpenEye by the fourth quarter of 2022, subject to offset for any indemnification obligations. An earn-out of up to an additional $11.0 million is payable if certain calendar 2020 revenue targets are met, of which $2.8 million was recorded at October 21, 2019. The purchase price allocation, which is pending the final determination of the working capital and tax adjustments, was not finalized as of the filing date of this Annual Report on Form 10-K.

The table below sets forth the purchase consideration and the preliminary allocation to estimate the fair value of the tangible and intangible net assets acquired (in thousands):

	October 21, 2019
Calculation of Purchase Consideration:	
Cash paid, net of working capital adjustment	$ 61,403
Holdback consideration	2,820
Contingent consideration	2,793
Total consideration	$ 67,016
Estimated Tangible and Intangible Net Assets:	
Cash	$ 2,352
Accounts receivable	5,742
Inventory	4,687
Other current assets	216
Property and equipment	296
Customer relationships	19,805
Developed technology	16,583
Trade name	2,219
Accounts payable	(2,746)
Accrued expenses	(1,017)
Other current liabilities	(1,683)
Deferred tax liability	(8,510)
Deferred revenue	(889)
Redeemable noncontrolling interest	(11,411)
Goodwill	41,372
Total estimated tangible and intangible net assets	$ 67,016

Goodwill of $41.4 million reflects the value of acquired workforce and synergies we expect to achieve from integrating OpenEye's cloud-managed video surveillance solutions into our existing comprehensive suite of interactive cloud-based services for domestic and international commercial enterprises. None of the goodwill recognized is expected to be deductible for income tax purposes in future periods. We allocate goodwill to reporting units based on expected benefit from synergies and have preliminarily allocated the goodwill to the Alarm.com segment.

Fair Value of Net Assets Acquired and Intangibles

In accordance with ASC 805, OpenEye constituted a business and the assets and liabilities were recorded at their respective fair values as of October 21, 2019. We developed our estimate of the fair value of intangible net assets using a multi-period excess earnings method for customer relationships, the relief from royalty method for the developed technology and the relief-from-royalty method for the trade name.

Customer Relationships

We recorded the customer relationships intangible separately from goodwill based on determination of the length, strength and contractual nature of the relationship that OpenEye shared with its customers. We valued the single group of customer relationships using the multi-period excess earnings method, an income approach. The significant assumptions used in the income approach include estimates about future expected cash flows from customer contracts, the attrition rate and the discount rate. We are amortizing the customer relationships, valued at $19.8 million, on an attribution basis derived from the discounted cash flows of the model over an estimated useful life of 13 years.

Developed Technology

Developed technology primarily consists of intellectual property of proprietary software that is marketed for sale. We valued the developed technology by applying the relief from royalty method, an income approach. The significant assumptions used in the relief from royalty method include estimates about future expected cash flows from the developed technology, the royalty rate, the obsolescence factor and the discount rate. We are amortizing the OpenEye developed technology, valued at $16.6 million, on an attribution method based on the discounted cash flows of the model over an estimated useful life of nine years.

Trade Name

We valued the trade names acquired using a relief from royalty method. The significant assumptions used in the income approach include future expected cash flows from the trade name, the royalty rate and the discount rate. We are amortizing the trade names, valued at $2.2 million, on an attribution basis derived from the discounted cash flows of the model over an estimated useful life of five years.

Redeemable Noncontrolling Interests

Our redeemable noncontrolling interest relates to our 85% equity ownership interest in OpenEye. The OpenEye stockholder agreement contains a put option that gives the minority OpenEye stockholders the right to sell their remaining 15% equity ownership interest to us based on the fair value of the shares. The OpenEye stockholder agreement also contains a call option that gives us the right to purchase the remaining OpenEye shares from the minority OpenEye stockholders based on the fair value of the shares. The put and call options can each be exercised beginning in the first quarter of 2023. The redeemable noncontrolling interest was recorded at fair value on October 21, 2019, by applying the income approach using unobservable inputs for projected cash flows, including projected financial results and a discount rate, which are considered Level 3 inputs. This redeemable noncontrolling interest is considered temporary equity and we report it between liabilities and stockholders' equity in the consolidated balance sheets. The redemption value of the of the noncontrolling interest was $11.4 million as of October 21, 2019, and decreased to $11.2 million as of December 31, 2019.

Contingent Consideration

We account for the contingent consideration related to the potential earn-out payment using fair value and establish a liability for the future earn-out payment based on an estimation of revenue attributable to perpetual licenses and subscription licenses over the 2020 calendar year. We estimated the fair value of the liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. At October 21, 2019, the fair value of the liability was $2.8 million. See Note 10 for details on the unobservable inputs used in the fair value estimate.

Connect and Piper Business Units from Icontrol Networks, Inc.

On March 8, 2017, in accordance with the asset purchase agreement we entered into with Icontrol Networks, Inc., or Icontrol, on June 23, 2016, we acquired certain assets and assumed certain liabilities of the Connect line of business and all of the outstanding equity interests of the two subsidiaries through which Icontrol conducted its Piper line of business, or the Acquisition. Connect provides an interactive security and home automation platform for service providers. Piper provides an all-in-one video and home automation hub. We expect the addition of new technology infrastructure, talent, key relationships and hardware devices to help accelerate our development of intelligent, data-driven smart residential and commercial property services.

The cash consideration was $148.5 million, after the estimated working capital adjustment, of which $14.5 million was deposited in escrow and was released in accordance with the asset purchase agreement upon the finalization of indemnification obligations of Icontrol stockholders and the final determination of closing working capital. We used $81.5 million of cash on hand and drew $67.0 million under our senior line of credit with Silicon Valley Bank, or SVB, and a syndicate of lenders to fund the Acquisition.

The Acquisition also included non-cash consideration. In accordance with the terms of the asset purchase agreement, we were obligated to assume the Icontrol 2013 Equity Incentive Plan and Icontrol 2003 Stock Plan, or collectively, the Icontrol Plans, and converted the 2,001,387 unvested employee stock options into 70,406 Alarm.com stock options using a conversion ratio stated in the agreement to convert the original exercise price and number of options. The fair value of the unvested stock options on the date of the Acquisition was $1.7 million calculated using a Black-Scholes model with a volatility and risk-free interest rate over the expected term of the options and the closing price of the Alarm.com common stock on the date of acquisition. We applied our graded vesting accounting policy to the fair value of these assumed options and determined $1.4 million of the fair value was attributable to pre-combination services and was included as a component of total purchase consideration. The remaining $0.3 million of the fair value was determined to be attributable to post-combination services and are being recognized over the remaining service periods of the stock options.

The table below sets forth the purchase consideration and the fair value allocation of the tangible and intangible net assets acquired (in thousands):

		March 8, 2017
Calculation of Purchase Consideration:		
Cash paid, net of working capital adjustment	$	148,500
Assumed stock options		1,375
Total consideration	$	149,875
Tangible and Intangible Net Assets:		
Cash	$	211
Accounts receivable		11,421
Current assets		883
Long-term assets		4,446
Customer relationships		93,260
Developed technology		4,770
Trade name		170
Current liabilities		(1,608)
Long-term liabilities		(288)
Goodwill		36,610
Total tangible and intangible net assets	$	149,875

Goodwill of $36.6 million reflects the value of acquired workforce and synergies we expect to achieve from integrating support for Connect's security service providers and for the Software platform. The goodwill will be deductible for tax purposes. We allocated goodwill to reporting units based on expected benefit from our synergies, and have allocated the goodwill to the Alarm.com segment.

The purchase price allocation for the Acquisition was finalized during the third quarter of 2017. The final fair value of the assets and liabilities related to the Acquisition reflects an increase of $0.1 million in tangible assets, net and a decrease of $0.1 million in goodwill based on working capital adjustments identified by us.

Fair Value of Net Assets Acquired and Intangibles

In accordance with ASC 805, the business units acquired in the Acquisition constituted a business and the assets and liabilities were recorded at their respective fair values as of March 8, 2017. We developed our estimate of the fair value of intangible net assets using a multi-period excess earnings method for customer relationships, the relief from royalty method for the developed technology and the relief from royalty method for the trade name.

Customer Relationships

We recorded the customer relationships intangible separately from goodwill based on determination of the length, strength and contractual nature of the relationship that Connect shared with its customers. We valued two groups of customer relationships using the multi-period excess earnings method, an income approach. We used several assumptions in the income approach, including attrition and renewal rate, margin and discount rate. We are amortizing the first customer relationship, valued at $92.5 million, on an attribution basis derived from the discounted cash flows of the model over an estimated useful life of twelve years and the second group of customer relationships, valued at $0.8 million, on the same basis, over an estimated useful life of four years.

Developed Technology

Developed technology primarily consists of intellectual property of proprietary software that is marketed for sale. The Software platform is software for interactive security, automation and related solutions that is typically deployed and operated by the service provider in its own network operations center. We valued the developed technology by applying the relief from royalty method, an income approach. We used several assumptions in the relief from royalty method, which included royalty rate and discount rate. We are amortizing the Connect developed technology, valued at $4.4 million, on an attribution method based on the discounted cash flows of the model over an estimated useful life of three years. Other developed technologies, valued at $0.3 million, were also acquired.

Trade Name

We determined that there was no fair value for the Connect trade name as the largest service provider partner for Connect had re-branded the interactive security and automation platform and marketed it under the service provider partner's own name. We valued the other trade names acquired using a relief from royalty method. We used several assumptions in the income approach, including royalty and discount rates. We are amortizing the other trade names, valued at $0.2 million, on an attribution basis derived from the discounted cash flows of the model over an estimated useful life of three years.

Deferred Tax Asset

The equity interests in the subsidiaries we acquired provided for a carryover tax basis in goodwill and intangible assets that arose from a previous acquisition. We recorded a deferred tax asset of $4.1 million that represents the excess of the carryover tax basis in those previously acquired goodwill and intangible assets over the fair value of goodwill and intangible assets we recorded on the date of the Acquisition.

ObjectVideo

On January 1, 2017, in accordance with an asset purchase agreement, we acquired certain assets of ObjectVideo, Inc., or ObjectVideo, that constituted a business now called ObjectVideo Labs, LLC, or ObjectVideo Labs, including products, technology portfolio and engineering team. ObjectVideo was a pioneer in the fields of video analytics and computer vision with technology that extracts meaning and intelligence from video streams in real-time to enable object tracking, pattern recognition and activity identification. We anticipate that the ObjectVideo Labs engineering team's capabilities and expertise will accelerate our research and development of video services and video analytic applications. In addition, ObjectVideo Labs will continue to perform advanced research and engineering services for the federal government. The consideration included $6.0 million of cash paid at closing.

The table below sets forth the purchase consideration and the fair value allocation of the tangible and intangible net assets acquired (in thousands):

	January 1, 2017
Calculation of Purchase Consideration:	
Cash paid, net of working capital adjustment	$ 6,000
Tangible and Intangible Net Assets:	
Developed technology	$ 3,800
Current liabilities	(58)
Goodwill	2,258
Total tangible and intangible net assets	$ 6,000

Goodwill of $2.3 million reflects the value of acquired workforce and expected synergies from pairing ObjectVideo Labs' video analytics capabilities with our offerings. The goodwill will be deductible for tax purposes.

The purchase price allocation for the ObjectVideo Labs acquisition was finalized during the third quarter of 2017. The final fair value of the assets and liabilities related to the ObjectVideo Labs acquisition reflects an increase of $0.4 million in developed technology and a decrease of $0.4 million in goodwill as well as a corresponding change to amortization of the developed technology based on our use of the replacement cost method to value the developed technology.

Fair Value of Net Assets Acquired and Intangibles

In accordance with ASC 805, the assets and liabilities of ObjectVideo Labs we acquired were recorded at their respective fair values as of January 1, 2017, the date of the acquisition. We developed our estimate of the fair value of intangible assets using the replacement cost method for the developed technology.

Developed Technology

Developed technology recorded separately from goodwill consists of intellectual property such as proprietary software used internally for revenue producing activities. ObjectVideo Labs proprietary software consists of source code and video analytics testing programs used internally to provide video analytics consulting services and research and development to customers and for the SaaS Alarm.com platform. We valued the developed technology by applying the replacement cost method. We used several assumptions in this cost approach, which included analyzing costs that a company would expect to incur to recreate an asset of equivalent utility. We amortized the developed technology, valued at $3.8 million, on a straight-line basis over an estimated useful life of two years which coincides with the rapidly developing technology of video analytics.

Unaudited Pro Forma Information - OpenEye

The following unaudited pro forma data is presented as if OpenEye were included in our historical consolidated statements of operations beginning January 1, 2018. These pro forma results do not necessarily represent what would have occurred if all the business combination had taken place on January 1, 2018, nor do they represent the results that may occur in the future.

This pro forma financial information includes our historical financial statements and those of our OpenEye business combination with the following adjustments: (i) we adjusted the pro forma amounts for income taxes, (ii) we adjusted for amortization expense assuming the fair value adjustments to intangible assets had been applied beginning January 1, 2018, and (iii) we adjusted for transaction fees incurred and reclassified them to January 1, 2018.

The pro forma adjustments were based on available information and upon assumptions that we believe are reasonable to reflect the impact of these acquisitions on our historical financial information on a supplemental pro forma basis, as follows (in thousands, except per share data):

	Pro Forma Year Ended December 31,	
	2019	2018
Revenue	$ 527,550	$ 451,013
Net income attributable to common stockholders	51,075	13,264
Net income attributable to common stockholders per share - basic	$ 1.05	$ 0.27
Net income attributable to common stockholders per share - diluted	$ 1.02	$ 0.26

Business Combinations in Operations - OpenEye

The operations of the OpenEye business combination discussed above were included in the consolidated financial statements as of the acquisition date. The following table presents the revenue and earnings of the business combination in the year of acquisition as reported within the consolidated financial statements (in thousands):

	Year Ended December 31, 2019
Revenue	$ 5,863
Net loss	(1,646)

Unaudited Pro Forma Information - Connect and Piper Business Units from Icontrol and ObjectVideo Labs

The following unaudited pro forma data is presented as if the Acquisition and ObjectVideo Labs were included in our historical consolidated statements of operations beginning January 1, 2016. These pro forma results do not necessarily represent what would have occurred if all the business combinations had taken place on January 1, 2016, nor do they represent the results that may occur in the future.

This pro forma financial information includes our historical financial statements and those of our business combinations with the following adjustments: (i) we adjusted the pro forma amounts for income taxes, (ii) we applied interest expense as if the additional borrowing for the acquisitions were as of January 1, 2016, (iii) we adjusted for amortization expense assuming the fair value adjustments to intangible assets had been applied beginning January 1, 2016, and (iv) we adjusted for transaction fees incurred and reclassified them to January 1, 2016.

The pro forma adjustments were based on available information and upon assumptions that we believe are reasonable to reflect the impact of these acquisitions on our historical financial information on a supplemental pro forma basis, as follows (in thousands, except per share data):

	Pro Forma Year Ended December 31, 2017
Revenue	$ 350,007
Net income	33,191
Net income per diluted share	$ 0.68

Business Combinations in Operations - Connect and Piper Business Units from Icontrol and ObjectVideo Labs

The operations of each of the business combinations discussed above were included in the consolidated financial statements as of each of their respective acquisition dates. The following table presents the revenue and earnings of the business combinations in the year of acquisition as reported within the consolidated financial statements (in thousands):

	Year Ended December 31, 2017
Revenue	$ 33,418
Net loss	(4,072)

For the Acquisition, we included the results of Connect's operations since its acquisition date in the Alarm.com segment and the results of Piper's operations since its acquisition date in the Other segment. We included the results of ObjectVideo Labs operations since its acquisition date in the Alarm.com segment.

Note 8. Goodwill and Intangible Assets, Net

The changes in goodwill by reportable segment are outlined below (in thousands):

	Alarm.com	Other	Total
Balance as of January 1, 2018	$ 63,591	$ —	$ 63,591
Goodwill acquired	—	—	—
Balance as of December 31, 2018	63,591	—	63,591
Goodwill acquired	41,372	—	41,372
Balance as of December 31, 2019	$ 104,963	$ —	$ 104,963

On October 21, 2019, we acquired 85% of the issued and outstanding capital stock of OpenEye and recorded $41.4 million of goodwill in the Alarm.com segment. There were no impairments of goodwill recorded during the years ended December 31, 2019, 2018 or 2017. As of December 31, 2019, the accumulated balance of goodwill impairments was $4.8 million, which is related to our acquisition of EnergyHub in 2013.

The following table reflects changes in the net carrying amount of the components of intangible assets (in thousands):

	Customer Relationships	Developed Technology	Trade Name	Total
Balance as of January 1, 2018	$ 88,526	$ 5,532	$ 228	$ 94,286
Amortization	(11,262)	(3,854)	(103)	(15,219)
Balance as of December 31, 2018	77,264	1,678	125	79,067
Intangible assets acquired	19,805	16,583	2,219	38,607
Amortization	(12,673)	(1,441)	(122)	(14,236)
Balance as of December 31, 2019	$ 84,396	$ 16,820	$ 2,222	$ 103,438

We recorded $14.2 million, $15.2 million and $12.3 million of amortization related to our intangible assets for the years ended December 31, 2019, 2018 and 2017, respectively. There were no impairments of long-lived assets during the years ended December 31, 2019, 2018 and 2017.

The following tables reflect the weighted-average remaining life and carrying value of finite-lived intangible assets (in thousands, except weighted-average remaining life):

	December 31, 2019			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value	Weighted-Average Remaining Life
Customer relationships	$ 123,731	$ (39,335)	$ 84,396	9.8
Developed technology	30,542	(13,722)	16,820	8.7
Trade name	3,304	(1,082)	2,222	4.8
Other	234	(234)	—	—
Total intangible assets	$ 157,811	$ (54,373)	$ 103,438	

	December 31, 2018			
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Value	Weighted-Average Remaining Life
Customer relationships	$ 103,926	$ (26,662)	$ 77,264	9.9
Developed technology	13,959	(12,281)	1,678	2.1
Trade name	1,084	(959)	125	2.4
Other	234	(234)	—	—
Total intangible assets	$ 119,203	$ (40,136)	$ 79,067	

The following table reflects the future estimated amortization expense for intangible assets (in thousands):

Year Ended December 31,	Amortization
2020	$ 16,071
2021	15,224
2022	14,075
2023	12,763
2024	11,580
2025 and thereafter	33,725
Total future amortization expense	$ 103,438

Note 9. Other Assets

Purchases of Patents and Patent Licenses

From time to time, we enter into agreements to purchase patents or patent licenses. The carrying value, net of amortization, of our purchased patents and patent licenses was $2.4 million and $2.9 million as of December 31, 2019 and 2018, respectively. As of December 31, 2019 and 2018, $0.5 million of patent costs were included in other current assets and $1.9 million and $2.4 million of patent costs were included in other assets, respectively. In October 2018, we purchased six patents for $1.1 million, which increased our historical patent costs related to purchased patents and patent licenses to $5.9 million. We are amortizing the patent costs over the estimated useful lives of the patents, which range from three years to twelve years. Patent cost amortization of $0.4 million, $0.5 million and $0.7 million was included in cost of SaaS and license revenue in our consolidated statements of operations for the years ended December 31, 2019, 2018 and 2017, respectively. Patent cost amortization of $0.1 million and less than $0.1 million was included in amortization and depreciation in our consolidated statements of operations for the year ended December 31, 2019 and 2018, respectively. There was no amortization of patent costs included in amortization and depreciation during the year ended December 31, 2017.

Loan to a Distribution Partner

In September 2016, we entered into dealer and loan agreements with a distribution partner. The dealer agreement enables the distribution partner to resell our SaaS services and hardware to their subscribers. Under the loan agreements, we agreed to loan the distribution partner up to $4.0 million, collateralized by all assets owned by the distribution partner. The advance period for the loan was amended in August 2017 to begin each year on September 1 and end each year on December 31. Interest on the outstanding principal accrued at a rate per annum equal to the greater of 6.0% or the Eurodollar Base Rate, or LIBOR, plus 4.0%, as determined on the first date of each annual advance period. The repayment of principal and accrued interest was due in three installments beginning in July and ending in August following the advance period. The term date of the loan was August 31, 2019; however, the borrower had the option to extend the term of the loan for two successive terms of one year each.

In May 2018, the loan agreement with our distribution partner was amended to convert the entire $4.0 million note receivable outstanding into a $4.0 million term loan. The term loan matures on July 31, 2022 and requires annual principal repayments of $1.0 million on July 31 of each year, commencing on July 31, 2019. The term loan also requires monthly interest payments, with interest accruing on the outstanding principal balance at a rate per annum equal to 6.0% through June 30, 2018 and a rate per annum equal to the LIBOR rate on the first of any interest period plus 7.0% beginning on July 1, 2018. As of December 31, 2019 and 2018, $1.0 million of the note receivable balance was included in other current assets in our consolidated balance sheets. As of December 31, 2019 and 2018, $2.0 million and $3.0 million of the note receivable balance was included in other assets in our consolidated balance sheets, respectively.

In April 2017, we entered into a subordinated credit agreement with an affiliated entity of the distribution partner and loaned the affiliated entity $3.0 million, with a maturity date of November 21, 2022. Interest on the outstanding principal balance accrues at a rate of 8.5% per annum and requires monthly interest payments. The $3.0 million loan receivable balance was included in other assets as of December 31, 2019 and 2018.

For the years ended December 31, 2019, 2018 and 2017, we recognized $1.9 million, $1.3 million and $1.2 million of revenue from the distribution partners associated with these loans.

Loan to a Hardware Supplier

In October 2018, we entered into a subordinate convertible promissory note with one of our hardware suppliers, or the October 2018 Promissory Note, which was amended in November 2018, January 2019 and February 2019 as a result of the hardware supplier's financial restructuring. In March 2019, we entered into a separate secured promissory note with the same hardware supplier, which, together with the October 2018 Promissory Note, we refer to as the Promissory Notes. Under the Promissory Notes, we agreed to provide the hardware supplier loans of up to $7.4 million, collateralized by all assets owned by the supplier. Interest on the outstanding principal accrued at a rate per annum equal to 12.0%, of which 6.0% per annum was payable in cash and the remaining 6.0% per annum was payable in kind. Payment of accrued interest was due quarterly beginning with the quarter ended March 31, 2019. The repayment of principal was due at the term date, which was the earlier of (i) the five-year anniversary of the issuance date of each of the Promissory Notes, (ii) the occurrence of a change of control, (iii) one day following the maturity day of the hardware supplier's senior indebtedness or (iv) immediately upon the acceleration of the hardware supplier's senior indebtedness.

In March 2019, we also purchased and acquired a secured promissory note, or the Acquired Promissory Note, that matured on March 30, 2019 and was originally executed between our hardware supplier and another third-party secured creditor. The Acquired Promissory Note had an outstanding balance of $26.6 million as of December 31, 2018, including interest. Interest on the outstanding principal accrued at a rate per annum equal to 13.0%. Under the terms of the Acquired Promissory Note, we paid $16.4 million to the third-party secured creditor in exchange for all of the rights associated with the Acquired Promissory Note, including a security interest and a right to enforce that interest against all assets owned by the hardware supplier. In addition to the $16.4 million paid in March 2019, we agreed to pay the third-party secured creditor an additional $6.0 million, subject to certain contingencies measured as of May 4, 2019. Based on the outcome of those contingencies, we recorded a $6.0 million liability in March 2019 related to the Acquired Promissory Note and paid the $6.0 million contingent liability during the three months ended September 30, 2019. The fair value of the Acquired Promissory Note at the date of purchase was $22.4 million, which represented the initial cash consideration paid in March 2019 and the contingent consideration paid in September 2019.

On May 6, 2019, we entered into a forbearance agreement with the hardware supplier, or the Forbearance Agreement. Under the Forbearance Agreement, the hardware supplier agreed to pay us the outstanding balance of principal and interest under the Promissory Notes and the Acquired Promissory Note before June 30, 2019. In consideration for the full and timely payments under the Forbearance Agreement, we agreed to temporarily forbear from exercising the remedies available to us with respect to the collateral securing the Promissory Notes and the Acquired Promissory Note. On June 24, 2019, we entered into a Forbearance Extension Agreement with the hardware supplier, under which the hardware supplier agreed to pay us $7.4 million on or before June 24, 2019. In consideration for the $7.4 million payment under the Forbearance Extension Agreement, we agreed to temporarily forbear from exercising the remedies available to us with respect to the collateral securing the Promissory Notes and the Acquired Promissory Note until July 10, 2019.

On June 24, 2019, we received a payment of $7.4 million from the supplier for the partial satisfaction of amounts due under the Promissory Notes and the Acquired Promissory Note. On July 15, 2019, we received an additional payment of $25.0 million from the supplier and converted the remaining $5.6 million outstanding notes receivable balance into an equity investment in the hardware supplier within the Alarm.con segment. We have concluded that the $5.6 million equity investment does not meet the criteria for consolidation and will be accounted for using the measurement alternative. Under the alternative, we measure investments without readily determinable fair values at cost, less impairment, adjusted for observable price changes from orderly transactions for identical or similar investments. As a result of the payments received, we reversed the $3.3 million reserve related to the October 2018 Promissory Note that was previously recorded during the three months ended December 31, 2018. The reversal of the reserve was recorded as a reduction to general and administrative expense in our consolidated statements of operations during the three months ended June 30, 2019.

As a result of the $25.0 million payment received and conversion of the $5.6 million outstanding notes receivable balance into an equity investment on July 15, 2019, we recorded interest of $1.7 million within interest income and a gain of $6.9 million within other income, net, in our consolidated statements of operations during the year ended December 31, 2019, related to the Promissory Notes and the Acquired Promissory Note.

As of December 31, 2019, there was no remaining outstanding balance of the Promissory Notes and the Acquired Promissory Note. As of December 31, 2018, the outstanding balance of the Promissory Notes excluding interest was $3.3 million and was included in other assets in our consolidated balance sheets prior to any adjustments for impairment.

Prepaid Expenses

As of December 31, 2019, $6.1 million of prepaid expenses were included in other current assets. As of December 31, 2018, $5.0 million of prepaid expenses were included in other current assets. In February 2020, we made a prepayment of $4.7 million for long lead-time parts related to our inventory.

Note 10. Fair Value Measurements

The following tables presents our assets and liabilities measured at fair value on a recurring basis (in thousands):

	Fair Value Measurements on a Recurring Basis as of December 31, 2019			
Fair value measurements in:	Level 1	Level 2	Level 3	Total
Assets:				
Money market accounts	$ 93,303	$ —	$ —	$ 93,303
Total	$ 93,303	$ —	$ —	$ 93,303
Liabilities:				
Subsidiary unit awards	$ —	$ —	$ 171	$ 171
Contingent consideration liability from acquisitions	—	—	2,595	2,595
Total	$ —	$ —	$ 2,766	$ 2,766

	Fair Value Measurements on a Recurring Basis as of December 31, 2018			
Fair value measurements in:	Level 1	Level 2	Level 3	Total
Assets:				
Money market accounts	$ 117,392	$ —	$ —	$ 117,392
Total	$ 117,392	$ —	$ —	$ 117,392
Liabilities:				
Subsidiary unit awards	$ —	$ —	$ 385	$ 385
Total	$ —	$ —	$ 385	$ 385

The following table summarizes the change in fair value of the Level 3 liabilities with significant unobservable inputs (in thousands):

	Fair Value Measurements Using Significant Unobservable Inputs		
	Year Ended December 31, 2019		Year Ended December 31, 2018
	Subsidiary Unit Awards	Contingent Consideration Liability from Acquisitions	Subsidiary Unit Awards
Beginning of period balance	$ 385	$ —	$ 3,160
Acquired liabilities	—	2,793	—
Changes in fair value included in earnings	(14)	(198)	27
Settlements	(200)	—	(2,802)
End of period balance	$ 171	$ 2,595	$ 385

The money market accounts are included in our cash and cash equivalents in our consolidated balance sheets. Our money market assets are valued using quoted prices in active markets.

The liability for the subsidiary unit awards relates to agreements established with employees of our subsidiaries for cash awards contingent upon the subsidiary companies meeting certain financial milestones such as revenue, working capital, EBITDA and EBITDA margin. We account for these subsidiary awards using fair value and establish liabilities for the future payment for the repurchase of subsidiary units under the terms of the agreements based on estimating revenue, working capital, EBITDA and EBITDA margin of the subsidiary units over the periods of the awards through the anticipated repurchase dates. We estimated the fair value of each liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. The fair value of each liability is calculated with thousands of projected outcomes, the results of which are averaged and then discounted to estimate the present value. At each reporting date until the respective payment dates, we will remeasure these liabilities, using the same valuation approach based on the applicable subsidiary's revenue and future collection of financed customer receivables, the unobservable inputs, and we will record any changes in the employee's compensation expense. Some of the awards are subject to the employees' continued employment and therefore, recorded on a straight-line basis over the remaining service period. During the year ended December 31, 2019, we settled $0.2 million of the liability related to the subsidiary unit awards. The remaining liability balances are included in either accounts payable, accrued expenses and other current liabilities or other liabilities in our consolidated balance sheets (see Note 13).

The contingent consideration liability consists of the potential earn-out payment related to our acquisition of 85% of the issued and outstanding capital stock of OpenEye on October 21, 2019. The earn-out payment is contingent on the satisfaction of certain calendar 2020 revenue targets and has a maximum potential payment of up to $11.0 million. We account for the contingent consideration using fair value and establish a liability for the future earn-out payment based on an estimation of revenue attributable to perpetual licenses and subscription licenses over the 2020 calendar year. We estimated the fair value of the liability by using a Monte Carlo simulation model for determining each of the projected measures by using an expected distribution of potential outcomes. The contingent consideration liability was valued with Level 3 unobservable inputs, including the revenue volatility and the discount rate. At October 21, 2019, the fair value of the liability was $2.8 million. At each reporting date until the payment date in 2021, we will remeasure the liability, using the same valuation approach. Changes in the fair value resulting from information that existed subsequent to the acquisition date are recorded in the consolidated statements of operations. During the year ended December 31, 2019, the contingent consideration liability decreased $0.2 million to $2.6 million as compared to the initial liability recorded at the acquisition date, primarily due to a change to OpenEye's 2020 projected revenue. The unobservable inputs used in the valuation as of December 31, 2019 included a revenue volatility of 45% and a discount rate of 3%. Selecting another revenue volatility or discount rate within an acceptable range would not result in a significant change to the fair value of the contingent consideration liability.

The contingent consideration liability is included in other liabilities in our consolidated balance sheet as of December 31, 2019 (see Note 13).

We monitor the availability of observable market data to assess the appropriate classification of financial instruments within the fair value hierarchy. Changes in economic conditions or model-based valuation techniques may require the transfer of financial instruments from one fair value level to another. In such instances, the transfer is reported at the beginning of the reporting period. There were no transfers between Levels 1, 2 or 3 during the years ended December 31, 2019, 2018 and 2017. We also monitor the value of the investments for other-than-temporary impairment on a quarterly basis. No other-than-temporary impairments occurred during the years ended December 31, 2019, 2018 and 2017.

Note 11. Leases

We lease office space, data centers and office equipment under non-cancelable operating leases with various expiration dates through 2026. In August 2014, we signed a lease for office space in Tysons, Virginia, where we relocated our headquarters to in February 2016. We have subsequently entered into amendments to this lease to provide us with additional office space. In May 2019 and July 2019, we entered into two amendments to the lease for our corporate headquarters, which provides for additional office space, additional parking spaces, the extension of additional storage space and additional tenant improvement allowance. The lease term ends in 2026, includes a five-year renewal option and a cumulative tenant improvement allowance of $11.2 million.

Supplemental information related to leases is presented in the table below (in thousands, except weighted-average term and discount rate):

	Year Ended December 31, 2019
Operating lease cost	$ 7,600
Cash paid for amounts included in the measurement of operating lease liabilities	8,268
Operating lease right-of-use assets obtained in exchange for new operating lease liabilities	7,886

	December 31, 2019
Weighted-average remaining lease term — operating leases	5.7 years
Weighted-average discount rate — operating leases	4.0%

Maturities of lease liabilities are as follows (in thousands):

Year Ended December 31,	Operating Leases[(1)]
2020	$ 9,333
2021	9,230
2022	8,189
2023	7,553
2024	6,827
2025 and thereafter and thereafter	9,174
Total lease payments	50,306
Less: imputed interest[(2)]	5,424
Present value of lease liabilities	$ 44,882

(1) Operating lease payments exclude $5.1 million of legally binding minimum lease payments for leases executed but not yet commenced and includes less than $0.1 million for options to extend lease terms that were reasonably certain of being exercised.
(2) Imputed interest was calculated using the incremental borrowing rate applicable for each lease.

Prior to our adoption of Topic 842, rent expense was $6.3 million and $6.2 million for the years ended December 31, 2018 and 2017, respectively.

The following table presents the future minimum lease payments under the non-cancelable operating leases as of December 31, 2018 prior to our adoption of Topic 842 (in thousands):

Year Ended December 31,	Minimum Lease Payments
2019	$ 7,044
2020	7,168
2021	6,974
2022	6,719
2023	6,348
2024 and thereafter	14,838
Total	$ 49,091

Note 12. Liabilities

The components of accounts payable, accrued expenses and other current liabilities are as follows (in thousands):

	December 31, 2019	December 31, 2018
Accounts payable	$ 32,878	$ 20,214
Accrued expenses	10,092	34,557
Subsidiary unit awards	141	200
Other current liabilities	5,616	3,459
Accounts payable, accrued expenses and other current liabilities	$ 48,727	$ 58,430

The components of other liabilities are as follows (in thousands):

	December 31, 2019	December 31, 2018
Deferred rent	$ —	$ 11,656
Contingent consideration liability from acquisitions	2,595	—
Holdback liability from acquisitions	1,650	—
Other liabilities	3,244	1,650
Other liabilities	$ 7,489	$ 13,306

Note 13. Debt, Commitments and Contingencies

The debt, commitments and contingencies described below would require us, or our subsidiaries, to make payments to third parties under certain circumstances.

Debt

On October 6, 2017, we entered into a $125.0 million senior secured revolving credit facility, or the 2017 Facility, with SVB, as administrative agent, PNC Bank, National Association, as documentation agent, and a syndicate of lenders. Upon entry into the 2017 Facility, we borrowed $72.0 million, which was used to repay the previously outstanding balance under our previous credit facility. The 2017 Facility matures in October 2022 and includes an option to further increase the borrowing capacity to $175.0 million with the consent of the lenders. Costs incurred in connection with the 2017 Facility were capitalized and are being amortized as interest expense over the term of the 2017 Facility. The 2017 Facility is secured by substantially all of our assets, including our intellectual property. During each of the years ended December 31, 2019 and 2018, we repaid $4.0 million of the outstanding balance of the 2017 Facility.

The outstanding principal balance on the 2017 Facility accrues interest at a rate equal to, at our option, either (1) LIBOR, plus an applicable margin based on our consolidated leverage ratio, or (2) the highest of (a) the Wall Street Journal prime rate, (b) the Federal Funds rate plus 0.50%, or (c) LIBOR plus 1.00% plus an applicable margin based on our consolidated leverage ratio. For the year ended December 31, 2019, we elected for the outstanding principal balance to accrue interest at LIBOR plus 1.50%, LIBOR plus 1.75%, LIBOR plus 2.00%, and LIBOR plus 2.50% when our consolidated leverage ratio is less than 1.00:1.00, greater than or equal to 1.00:1.00 but less than 2.00:1.00, greater than or equal to 2.00:1.00 but less than 3.00:1.00

and greater than or equal to 3.00:1.00, respectively. The 2017 Facility also carries an unused line commitment fee of 0.20%. For the years ended December 31, 2019, 2018 and 2017, the effective interest rate on the credit facilities was 4.45%, 4.13% and 4.16%, respectively.

The carrying value of the 2017 Facility was $63.0 million and $67.0 million as of December 31, 2019 and 2018, respectively. The 2017 Facility includes a variable interest rate that approximates market rates and, as such, we classified the liability as Level 2 within the fair value hierarchy and determined that the carrying amount of the 2017 Facility approximated its fair value as of December 31, 2019 and 2018. The 2017 Facility contains various financial and other covenants that require us to maintain a maximum consolidated leverage ratio not to exceed 3.25:1.00 and a consolidated fixed charge coverage ratio of at least 1.25:1.00. As of December 31, 2019, we were in compliance with all financial and non-financial covenants and there were no events of default.

On November 30, 2018, we amended the 2017 Facility to incorporate the parameters that must be met for us to repurchase our outstanding common stock under the stock repurchase program authorized by our board of directors on November 29, 2018 (see Note 14).

Commitments and Contingencies

Repurchase of Subsidiary Units

In 2011, we formed a subsidiary that offers to professional residential property management and vacation rental management companies technology solutions for remote monitoring and control of properties, including access control and energy management. Since its formation, we granted an award of subsidiary stock to the founder and president. The vesting of the award is based upon the subsidiary meeting certain minimum financial targets from the date of commercial availability, which was determined to be June 1, 2013, until the fourth anniversary. In 2016, we amended the term of the award, extending the valuation date for the first payment in cash to December 31, 2017, amending the financial targets and allowing for payments in cash based on the future collection of financed customer receivables from 2018 to 2020 that existed as of the valuation date. During 2019 and 2018, we settled $0.2 million and $2.8 million of the liability related to the subsidiary unit awards, respectively. We recorded a liability of $0.1 million in accounts payable, accrued expenses and other current liabilities and less than $0.1 million in other liabilities related to this commitment in our consolidated balance sheet as of December 31, 2019. We recorded a liability of $0.2 million in accounts payable, accrued expenses and other current liabilities and a liability of $0.2 million in other liabilities related to this commitment in our consolidated balance sheet as of December 31, 2018.

At each reporting date until the respective payment dates, we will remeasure these liabilities, and we will record any changes in fair value in general and administrative expense (see Note 10).

Contingent Consideration

On October 21, 2019, we acquired 85% of the issued and outstanding capital stock of OpenEye. Certain stockholders of OpenEye have the right to receive an earn-out payment of up to an additional $11.0 million based upon satisfaction of certain calendar 2020 revenue targets. At October 21, 2019, the fair value of the contingent consideration liability was $2.8 million. At each reporting date until the payment date in 2021, we will remeasure the liability, using the same valuation approach. Changes in the fair value resulting from information that existed subsequent to the acquisition date are recorded in the consolidated statements of operations. During the year ended December 31, 2019, the contingent consideration liability decreased $0.2 million to $2.6 million as compared to the initial liability recorded at the acquisition date, primarily due to a change to OpenEye's 2020 projected revenue. The contingent consideration liability is included in other liabilities in our consolidated balance sheet as of December 31, 2019 (see Note 10).

Indemnification Agreements

We have various agreements that may obligate us to indemnify the other party to the agreement with respect to certain matters. Generally, these indemnification provisions are included in contracts arising in the normal course of business. Although we cannot predict the maximum potential amount of future payments that may become due under these indemnification agreements, we do not believe any potential liability that might arise from such indemnity provisions is probable or material.

Letters of Credit

As of December 31, 2019 and 2018, we had no outstanding letters of credit under the 2017 Facility.

Legal Proceedings

On June 2, 2015, Vivint, Inc., or Vivint, filed a lawsuit against us in U.S. District Court, District of Utah, alleging that our technology directly and indirectly infringes six patents that Vivint purchased. Vivint is seeking permanent injunctions, enhanced damages and attorneys' fees. We answered the complaint on July 23, 2015. Among other things, we asserted defenses based on non-infringement and invalidity of the patents in question. On August 19, 2016, the U.S. District Court, District of Utah stayed the litigation pending inter partes review by the U.S. Patent Trial and Appeal Board, or PTAB, of five of the patents in suit. In March 2017, the PTAB issued final written decisions relating to two patents finding all challenged claims unpatentable. In May 2017, the PTAB issued final written decisions relating to the remaining three patents that found certain claims unpatentable, while certain other claims were not found to be unpatentable. Vivint appealed the decisions to the U.S. Court of Appeals for the Federal Circuit, or the Federal Circuit, and we cross-appealed. In July 2018, the Federal Circuit issued orders affirming the PTAB's March 2017 decisions that invalidated all challenged claims of two patents. The U.S. District Court, District of Utah lifted the stay on the litigation on June 26, 2017, with Vivint proceeding with its case on four of the six patents in its complaint. No trial date has been set. In September 2017, the U.S. Patent and Trademark Office, or PTO, ordered ex parte reexaminations of certain claims of two of the remaining patents in suit, at our request. On October 30, 2018 and November 5, 2018, the PTO issued final office actions in the pending reexaminations rejecting all claims being examined as unpatentable over the prior art. Vivint appealed these rejections to the PTAB on March 29, 2019 and April 4, 2019. The U.S. District Court, District of Utah has ordered the litigation regarding the nine claims (from two patents) rejected by the PTO during the reexaminations be stayed until May 15, 2020. On April 3, 2019, the U.S. District Court, District of Utah heard argument on the parties' cross motions for claim construction and Alarm.com's motion for partial summary judgment as to invalidity. Decisions on these motions are pending. On December 20, 2018, the Federal Circuit issued an order regarding the inter partes review of three of the remaining patents in suit that vacated, reversed and remanded the PTAB's ruling with regard to the construction of a term ("communication device identification code") as requested by Alarm.com and affirmed the PTAB's May 2017 rulings invalidating certain of the Vivint patents in all other respects. On July 24, 2019, the PTAB issued further decisions with respect to two of the remaining patents in suit, finding additional claims unpatentable in view of the Federal Circuit's December 20, 2018 decision. One of the claims asserted in the litigation was found unpatentable in the July 14, 2019 decisions, and the U.S. District Court, District of Utah has stayed the proceedings with respect to that claim until May 15, 2020. Vivint appealed the July 24, 2019 decisions to the Federal Circuit on September 25, 2019.

Should Vivint prevail in proving Alarm.com infringes one or more of its patent claims, we could be required to pay damages of Vivint's lost profits and/or a reasonable royalty for sales of our solution. Since all remaining patent claims in the litigation have expired, Vivint shall not be entitled to injunctive relief as a remedy in this matter. While we believe we have valid defenses to Vivint's claims, any of these outcomes could result in a material adverse effect on our business. Based on currently available information, we have determined a loss is not probable or reasonably estimable at this time.

On April 25, 2017, Alarm.com Incorporated and its wholly-owned subsidiary ICN Acquisition, LLC, filed a patent infringement complaint against Protect America, Inc., or Protect America, and SecureNet Technologies, LLC, or SecureNet, in the United States District Court for the Eastern District of Virginia. The complaint sought injunctive relief to stop the further sale of the infringing Protect America and SecureNet products and systems, and damages for the infringement of Alarm.com's patents. The complaint asserted that the technology in the Protect America and SecureNet Alarm Systems products infringe one or more claims of Alarm.com's patents: United States Patent Numbers 7,113,090; 7,633,385; 8,395,494; 8,493,202; 8,612,591; 8,860,804; and 9,141,276. In June 2017, Alarm.com filed an amended complaint against Protect America only in the Western District of Texas and voluntarily dismissed SecureNet from the suit. In December 2019, Alarm.com entered into a confidential settlement agreement with Protect America which resulted in the dismissal of the lawsuit without prejudice.

On October 22, 2019, EcoFactor, Inc., or EcoFactor, filed a complaint with the U.S. International Trade Commission, or ITC, naming Alarm.com Incorporated and Alarm.com Holdings, Inc., among others, as proposed respondents. The complaint alleges that Alarm.com's smart thermostats infringe three U.S. patents owned by EcoFactor. EcoFactor is seeking a permanent limited exclusion order and permanent cease and desist order. On November 22, 2019, the ITC instituted an investigation into EcoFactor's allegations naming Alarm.com Incorporated, Alarm.com Holdings, Inc. and others as respondents. We answered the complaint on December 19, 2019. Among other things, we asserted defenses based on non-infringement and invalidity of the patents in question. The administrative law judge presiding over the investigation has set March 15, 2021 as the target date for completion of the investigation. The evidentiary hearing is scheduled to begin on July 21, 2020.

On November 11, 2019, EcoFactor filed a lawsuit against us in U.S. District Court, District of Massachusetts, alleging infringement of the same three patents asserted against us in the ITC. EcoFactor is seeking permanent injunctions, enhanced damages and attorneys' fees. On December 26, 2019, the court issued an order staying the lawsuit pending the conclusion of the related ITC investigation.

On January 31, 2020, EcoFactor filed a second lawsuit against us in U.S. District Court, Western District of Texas, alleging Alarm.com's products and services infringe four additional U.S. patents owned by EcoFactor. EcoFactor is seeking permanent injunctions, enhanced damages and attorneys' fees. Our response to the complaint is due on March 5, 2020.

Should EcoFactor prevail in the ITC investigation, Alarm.com thermostats manufactured abroad could be excluded from importation into the United States. Should EcoFactor prevail in its district court lawsuits we could be required to pay damages and/or a reasonable royalty for sales of our solution, we could be enjoined from making, using and selling our solution if a license or other right to continue selling such elements is not made available to us, and we could be required to pay ongoing royalties and comply with unfavorable terms if such a license is made available to us. While we believe we have valid defenses to EcoFactor's claims, the outcome of these legal claims cannot be predicted with certainty and any of these outcomes could result in an adverse effect on our business. Based on currently available information, we have determined a loss is not probable or reasonably estimable at this time.

On December 30, 2015, a putative class action lawsuit was filed against us in the U.S. District Court for the Northern District of California, or the Court, which alleged violations of the Telephone Consumer Protection Act, or TCPA, and sought to hold us responsible for the marketing activities of one of our service providers as well as telemarketing calls made by one of this service provider's sub-dealer agents under principles of agency and vicarious liability. On August 30, 2018, we reached an agreement in principle to settle the case for total cash consideration of $28.0 million. On October 25, 2018, we entered into a definitive settlement agreement, or Settlement Agreement, and submitted it to the Court for approval. The Court granted preliminary approval of the Settlement Agreement on December 19, 2018 and final approval on August 13, 2019.

In entering into the definitive settlement agreement, we made no admission of liability. Pursuant to the Settlement Agreement, among other things, (1) we agreed to pay total cash consideration of $28.0 million into a settlement fund, (2) we agreed to implement certain business practice changes to increase awareness of TCPA compliance, (3) each party to the Settlement Agreement agreed to a mutual release of claims relating to any claim or potential claim relating to the marketing activities described in the complaint, and (4) each party covenanted not to sue the other with regard to the released claims. In addition, we agreed to no longer allow the service provider identified in the litigation as purportedly violating the TCPA to continue activating new accounts for Alarm.com products and services following preliminary Court approval of the Settlement Agreement.

We made an initial payment of $5.0 million to the settlement administrator on January 2, 2019, and the remaining payment of $23.0 million was made on September 30, 2019. The release of claims includes all alleged damages incurred related to the lawsuit. Any attorneys' fees awarded by the Court and all costs of notice and claims administration will be paid from the settlement fund. We currently expect all distributions to be completed by August 2020. The $28.0 million settlement was reflected in general and administrative expenses within our consolidated statements of operations for the three and nine months ended September 30, 2018.

In addition to the matters described above, we may be required to provide indemnification to certain of our service provider partners for certain claims regarding our solutions. For example, we are incurring costs associated with the indemnification of our service provider ADT, LLC in two ongoing patent infringement suits: Applied Capital, Inc. v. The ADT Corporation et al. and Varatec, LLC v. ADT, LLC.

On July 13, 2016, Applied Capital, Inc., or Applied Capital, filed a lawsuit against ADT, LLC, the ADT Corporation, and Icontrol Networks, Inc. in U.S. District Court, the District of New Mexico. *Applied Capital, Inc v. The ADT Corporation et al.*, D. New Mexico Case No. 1-16-cv-00815. Icontrol was dismissed without prejudice on May 22, 2017. Applied Capital alleges that ADT's sales of ADT Pulse directly and indirectly infringes U.S. Patent Nos. 8,378,817 and 9,728,082, which were allegedly purchased by Applied Capital. Applied Capital is seeking damages and attorneys' fees. ADT answered Applied Capital's amended complaint on July 16, 2018. Among other things, ADT has asserted defenses based on non-infringement and invalidity of the patents-in-suit. On April 5, 2019, Applied Capital filed a lawsuit for breach of contract against Rodney Fox, the inventor of the patents-in-suit, in the Second Judicial District Court, County of Bernalillo in New Mexico State Court (No. D-202-CV-2019-02841). Mr. Fox counterclaimed, alleging that he is the rightful owner of the patents-in-suit. Based on the dispute of ownership, on October 15, 2019, ADT filed a motion to stay in this matter pending its resolution. Applied Capital and Mr. Fox reached settlement and stipulated to dismissal of the New Mexico State Court action on October 31, 2019. The court issued its claim construction order on August 12, 2019, fact discovery closed on November 12, 2019, and the parties served opening expert reports on December 16, 2019. Rebuttal expert reports are due on February 10, 2020 and expert discovery closes on February 28, 2020. Applied Capital filed its Second Amended Complaint on January 27, 2020 and ADT answered, adding a claim of inequitable conduct, on February 10, 2020. The pretrial conference is scheduled for August 5, 2020; however, the trial date has not yet been set.

On March 4, 2019, Varatec, LLC, or Varatec, sued ADT, LLC d/b/a ADT Security Services in U.S. District Court for the Northern District of Illinois. *Varatec, LLC v. ADT, LLC d/b/a ADT Security Services*, N.D. Illinois Case No. 1-19-cv-01543. Varatec alleges that ADT's sales of ADT Pulse directly and indirectly infringe U.S. Patent No. 7,792,256, which was assigned to Varatec. Varatec seeks a permanent injunction, enhanced damages, and attorneys' fees. On May 23, 2019, ADT filed a motion seeking to dismiss the complaint for failure to state a claim, on the basis that the asserted patent fails to claim patent eligible subject matter. On July 3, 2019, third-party Unified Patents Inc. filed a petition seeking inter parties review of the asserted patent by the PTAB. After the completion of briefing of ADT's motion to dismiss, the parties agreed to stay the case pending resolution of the inter partes review, and the court granted the parties' motion on August 14, 2019. Unified Patent's petition for inter parties review was instituted on December 31, 2019 and Varatec's response is due on March 23, 2020. The stay remains in place.

Should either Applied Capital or Varatec prevail on the claims that one or more elements of ADT's products infringe, we could be required to indemnify ADT for damages in the form of a reasonable royalty or ADT could be enjoined from making, using and selling our solution if a license or other right to continue selling our technology is not made available to us or we are unable to design around such patents, and required to pay ongoing royalties and comply with unfavorable terms if such a license is made available to us. The outcome of these legal claims cannot be predicted with certainty. We believe there are valid defenses to the claims made by Applied Capital and Varatec. Based on currently available information, we have determined a loss is not probable or reasonably estimable at this time.

We may also be a party to litigation and subject to claims incident to the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we currently believe that the final outcome of these ordinary course matters will not have a material adverse effect on our business.

Other than the preceding matters, we are not a party to any lawsuit or proceeding that, in the opinion of management, is reasonably possible or probable of having a material adverse effect on our financial position, results of operations or cash flows. We reserve for contingent liabilities based on ASC 450, "*Contingencies*," when it is determined that a liability, inclusive of defense costs, is probable and reasonably estimable. Litigation is subject to many factors that are difficult to predict, so there can be no assurance that, in the event of a material unfavorable result in one or more claims, we will not incur material costs.

Note 14. Stockholders' Equity

Authorized shares

We are authorized to issue two classes of stock, common stock and preferred stock. On June 9, 2015, the board of directors amended and restated our Amended and Restated Certificate of Incorporation, effective upon the closing of our IPO on July 1, 2015, and authorized us to issue up to 300,000,000 shares of common stock and 10,000,000 shares of undesignated preferred stock.

Common and Preferred Stock

As of December 31, 2019 and 2018, there were 48,700,963 and 48,103,038 shares of common stock issued, and 48,700,713 and 48,102,081 shares of common stock outstanding, respectively. As of December 31, 2019 and 2018, there were no preferred shares issued and outstanding. Each outstanding share of common stock is entitled to one vote per share.

Stock Repurchase Program

On November 29, 2018, our board of directors authorized a stock repurchase program, under which we are authorized to purchase up to an aggregate of $75.0 million of the Company's outstanding common stock during the two-year period ending November 29, 2020. No shares of the Company's stock were repurchased under this program during the years ended December 31, 2019 and 2018.

Note 15. Stock-Based Compensation

Stock-based compensation expense is included in the following line items in the consolidated statements of operations (in thousands):

	Year Ended December 31,		
Stock-based compensation expense data:	**2019**	**2018**	**2017**
Sales and marketing	$ 2,075	$ 1,196	$ 561
General and administrative	6,474	4,901	2,638
Research and development	12,054	7,332	4,214
Total stock-based compensation expense	$ 20,603	$ 13,429	$ 7,413

The following table summarizes the components of non-cash stock-based compensation expense (in thousands):

	Year Ended December 31,		
	2019	**2018**	**2017**
Stock options and assumed options	$ 3,783	$ 3,511	$ 3,913
Restricted stock units	16,627	9,770	3,366
Restricted stock awards	—	1	19
Employee stock purchase plan	193	147	115
Total stock-based compensation expense	$ 20,603	$ 13,429	$ 7,413
Tax benefit from stock-based awards	$ 5,154	$ 7,581	$ 12,719

2015 Equity Incentive Plan

We issue stock options pursuant to our 2015 Plan. The 2015 Plan allows for the grant of stock options to employees and for the grant of nonqualified stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards, or RSUs, performance-based stock awards, and other forms of equity compensation to our employees, directors and non-employee directors and consultants.

In June 2015, our board of directors adopted and our stockholders approved our 2015 Plan pursuant to which we initially reserved a total of 4,700,000 shares of common stock for issuance under the 2015 Plan, which included shares of our common stock previously reserved for issuance under our Amended and Restated 2009 Stock Incentive Plan, or the 2009 Plan. The number of shares of common stock reserved for issuance under the 2015 Plan will automatically increase on January 1 each year, for a period of not more than ten years, commencing on January 1, 2016 through January 1, 2024, by 5% of the total number of shares of common stock outstanding on December 31 of the preceding calendar year, or a lesser number of shares as may be determined by the board of directors. As a result of the adoption of the 2015 Plan, no further grants may be made under the 2009 Plan. As of December 31, 2019, 6,527,550 shares remained available for future grant under the 2015 Plan.

Stock Options

Stock options under the 2015 Plan have been granted at exercise prices based on the closing price of our common stock on the date of grant. Stock options under the 2009 Plan were granted at exercise prices as determined by the board of directors to be the fair market value of our common stock. Our stock options generally vest over a five-year period and each option, if not exercised or forfeited, expires on the tenth anniversary of the grant date.

Certain stock options granted under the 2015 Plan and previously granted under the 2009 Plan may be exercised before the options have vested. Unvested shares issued as a result of early exercise are subject to repurchase by us upon termination of employment or services at the original exercise price. The proceeds from the early exercise of stock options are initially recorded as a current liability and are reclassified to common stock and additional paid-in capital as the awards vest and our repurchase right lapses. There were 250 and 957 unvested shares of common stock outstanding subject to our right of repurchase as of December 31, 2019 and 2018, respectively. We repurchased 27 and 107 of these unvested shares of common stock related to early exercised stock options in connection with employee terminations during the years ended December 31, 2019 and 2018, respectively. We recorded less than $0.1 million in accounts payable, accrued expenses and other current liabilities on our consolidated balance sheets for the proceeds from the early exercise of the unvested stock options as of December 31, 2019 and 2018.

We account for stock-based compensation options based on the fair value of the award as of the grant date. We recognize stock-based compensation expense using the accelerated attribution method, net of actual forfeitures, in which compensation cost for each vesting tranche in an award is recognized ratably from the service inception date to the vesting date for that tranche.

We value our stock options using the Black-Scholes option pricing model, which requires the input of subjective assumptions, including the risk-free interest rate, expected term, expected stock price volatility and dividend yield. The risk-free interest rate assumption is based upon observed interest rates for constant maturity U.S. Treasury securities consistent with the expected term of our stock options. The expected term represents the period of time the stock options are expected to be outstanding and is based on the "simplified method." Under the "simplified method," the expected term of an option is presumed to be the mid-point between the vesting date and the end of the contractual term. We use the "simplified method" due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected term of the stock options. Beginning in November 2019, the expected volatility for options granted is based on historical volatilities of our stock over the estimated expected term of the stock options. The expected volatility for options granted prior to November 2019 was based on historical volatilities of our stock and publicly traded stock of comparable companies over the estimated expected term of the stock options.

There were 186,500, 219,450 and 252,100 stock options granted during the years ended December 31, 2019, 2018 and 2017, respectively. We declared and paid dividends in June 2015 in anticipation of our IPO, which we closed on July 1, 2015. Subsequent to the IPO, we do not expect to declare or pay dividends on a recurring basis. As such, we assume that the dividend rate is 0%.

The following table summarizes the assumptions used for estimating the fair value of stock options granted:

	Year Ended December 31,		
	2019	2018	2017
Volatility	39.6 - 42.2%	41.9 - 60.8%	44.4 - 61.6%
Expected term	6.3 - 7.5 years	6.3 years	6.3 years
Risk-free interest rate	1.4 - 2.5%	2.3 - 3.0%	2.0 - 2.2%
Dividend rate	—%	—%	—%

The following table summarizes stock option activity:

	Number of Options	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2018	2,057,800	$ 15.37	6.3	$ 75,101
Granted	186,500	56.32		
Exercised	(321,768)	7.81		15,061
Forfeited	(15,627)	22.82		
Expired	(1,154)	15.47		
Outstanding as of December 31, 2019	1,905,751	$ 20.60	6.0	$ 45,344
Vested and expected to vest as of December 31, 2019	1,906,001	$ 20.60	6.0	$ 45,351
Exercisable as of December 31, 2019	1,310,486	$ 13.06	5.1	$ 39,459

The weighted average grant date fair value for our stock options granted during the years ended December 31, 2019, 2018 and 2017 was $25.01, $19.43 and $14.95, respectively. The total fair value of stock options vested during the years ended December 31, 2019, 2018 and 2017 was $3.4 million, $3.5 million and $3.5 million, respectively. The aggregate intrinsic value of stock options exercised during the years ended December 31, 2019, 2018 and 2017 was $15.1 million, $32.7 million and $35.0 million, respectively. As of December 31, 2019, the total compensation cost related to nonvested awards not yet recognized was $5.3 million, which will be recognized over a weighted average period of 2.5 years. Cash received from exercises of stock options was $2.5 million, $5.2 million and $2.6 million during the years ended December 31, 2019, 2018 and 2017, respectively.

Stock Options Assumed from Acquisition

On March 8, 2017, we completed the Acquisition and assumed the Icontrol Plans. The assumed unvested stock options are exercisable for 70,406 shares of Alarm.com common stock. On March 15, 2017, we filed a Form S-8 Registration Statement related to the Acquisition. The registration also covers an additional 2,308,615 shares of common stock that were automatically added to the shares authorized for issuance under the 2015 Plan pursuant to an evergreen provision contained in the 2015 Plan and an additional 461,723 shares of common stock that were automatically added to the shares authorized for issuance under the 2015 ESPP, pursuant to an evergreen provision contained in the 2015 ESPP.

In accordance with the terms of the asset purchase agreement, we were obligated to assume the Icontrol Plans, and converted the 2,001,387 unvested employee stock options into 70,406 Alarm.com stock options using a conversion ratio stated in the agreement to convert the original exercise price and number of options. The fair value of the unvested stock options on the date of the Acquisition was $1.7 million calculated using a Black-Scholes model with a volatility and risk-free interest rate over the expected term of the options and the closing price of the Alarm.com common stock on the date of acquisition. We applied our graded vesting accounting policy to the fair value of these assumed options and determined $1.4 million of the fair value was attributable to pre-combination services and was included as a component of total purchase consideration. The remaining $0.3 million of the fair value was determined to be attributable to post-combination services and will be recognized over the remaining service periods of the stock options.

The following table summarizes the assumptions used for estimating the fair value of stock options assumed from the Connect business unit of Icontrol:

	Year Ended December 31,
	2017
Volatility	42.7 - 44.4%
Expected term	2.5 - 5.0 years
Risk-free interest rate	1.4 - 2.0%
Dividend rate	—%

The following table summarizes the assumed stock option activity:

	Number of Options	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2018	21,633	$ 6.61	6.5	$ 979
Exercised	(5,672)	4.72		319
Forfeited	(22)	4.55		
Expired	(134)	10.54		
Outstanding as of December 31, 2019	15,805	$ 7.26	5.7	$ 564
Vested and expected to vest as of December 31, 2019	15,805	$ 7.26	5.7	$ 564
Exercisable as of December 31, 2019	15,177	$ 7.08	5.7	$ 545

The weighted average grant date fair value for the assumed stock options granted during the year ended December 31, 2017 was $4.78. There were no new grants assumed under the Icontrol Plans in 2019 and 2018. The total fair value of assumed stock options vested during the years ended December 31, 2019, 2018 and 2017 was $0.1 million. The aggregate intrinsic value of assumed stock options exercised during the years ended December 31, 2019, 2018 and 2017 was $0.3 million, $0.7 million and $0.3 million, respectively. As of December 31, 2019, the total compensation cost related to the nonvested awards not yet recognized was less than $0.1 million, which will be recognized over a weighted average period of 0.2 years. Cash received from exercises of stock options was less than $0.1 million, $0.1 million and less than $0.1 million during the years ended December 31, 2019, 2018 and 2017, respectively.

Restricted Stock Awards

In March 2017, we assumed 1,622 stock options from Connect upon completion of the Acquisition, which were early exercised according to the provisions of the Icontrol Plans for which the employees had not yet provided service for the applicable vesting periods. We canceled those stock options and issued restricted stock awards, or RSAs, with no exercise price at the fair value of Alarm.com common stock upon the closing of the Acquisition and recorded less than $0.1 million of compensation expense during the years ended December 31, 2018 and 2017. There were no outstanding RSAs as of December 31, 2018. There were no repurchases of RSAs during the year ended December 31, 2018. We repurchased 750 RSAs in connection with employee terminations during the year ended December 31, 2017.

Restricted Stock Units

There was an aggregate of 827,764, 381,545 and 534,146 RSUs granted to certain of our employees during the years ended December 31, 2019, 2018 and 2017, respectively. The RSUs vest over a five-year period from the vesting commencement date, which is generally the grant date. We account for RSUs based on the fair value of the award as of the grant date. We recognize stock-based compensation expense using the accelerated attribution method, net of actual forfeitures, in which compensation cost for each vesting tranche in an award is recognized ratably from the grant date to the vesting date for that tranche. The condition for vesting of the RSUs is based on continued employment. As of December 31, 2019, the total unrecognized compensation expense related to RSU awards granted amounted to $44.6 million, which is expected to be recognized over a weighted average period of 2.8 years.

The following table summarizes RSU activity:

	Number of RSUs	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2018	871,752	$ 38.37	$ 45,218
Granted	827,764	52.16	
Vested	(243,701)	36.90	13,592
Forfeited	(69,327)	45.12	
Outstanding as of December 31, 2019	1,386,488	$ 46.52	$ 59,577
Vested and expected to vest as of December 31, 2019	1,386,488	$ 46.52	$ 59,577

Employee Stock Purchase Plan

Our board of directors adopted our 2015 ESPP in June 2015. As of December 31, 2019, 2,004,184 shares have been reserved for future grant under the 2015 ESPP, with provisions established to increase the number of shares available on January 1 of each subsequent year for nine years. The annual automatic increase in the number of shares available for issuance under the 2015 ESPP is the lesser of 1% of each class of common stock outstanding as of December 31 of the preceding fiscal year, 1,500,000 shares of common stock, or such lesser number as determined by the board of directors. The 2015 ESPP allows eligible employees to purchase shares of our common stock at 90% of the fair market value, rounded up to the nearest cent, based on the closing price of our common stock on the purchase date. The maximum number of shares of our common stock that a participant may purchase during any calendar year shall not exceed such number of shares having a fair market value equal to the lesser of $15,000 or 10% of the participant's base compensation for that year.

The 2015 ESPP is considered compensatory for purposes of share-based compensation expense due to the 10% discount on the fair market value of the common stock. For the years ended December 31, 2019, 2018 and 2017, an aggregate of 26,811, 29,131 and 25,616 shares were purchased by employees for which we recognized $0.2 million, $0.1 million and $0.1 million of compensation expense, respectively. Compensation expense is recognized for the amount of the discount, net of actual forfeitures and voluntary withdrawals, over the six-month purchase period.

Note 16. Earnings Per Share

Basic and Diluted Earnings Per Share

The components of basic and diluted earnings per share are as follows (in thousands, except share and per share amounts):

	Year Ended December 31,		
	2019	2018	2017
Net income	$ 53,330	$ 21,524	$ 29,251
Net loss attributable to redeemable noncontrolling interest	201	—	—
Net income allocated to participating securities	—	(3)	(13)
Net income attributable to common stockholders (A)	$ 53,531	$ 21,521	$ 29,238
Weighted average common shares outstanding — basic (B)	48,427,446	47,633,739	46,682,141
Dilutive effect of stock options, restricted stock units and restricted stock awards	1,846,443	2,058,445	2,471,807
Weighted average common shares outstanding — diluted (C)	50,273,889	49,692,184	49,153,948
Net income per share:			
Basic (A/B)	$ 1.11	$ 0.45	$ 0.63
Diluted (A/C)	$ 1.06	$ 0.43	$ 0.59

The following securities have been excluded from the calculation of diluted weighted average common shares outstanding as the inclusion of these securities would have an anti-dilutive effect:

	Year Ended December 31,		
	2019	2018	2017
Stock options	223,259	229,294	258,917
Restricted stock awards	—	—	129
Restricted stock units	136,600	148,175	188,050
Common stock subject to repurchase	250	957	13,281

Participating securities are composed of certain stock options granted under the 2015 Plan, and previously granted under the 2009 Equity Incentive Plan, that may be exercised before the options have vested. Unvested shares have a non-forfeitable right to dividends. Unvested shares issued as a result of early exercise are subject to repurchase by us upon termination of employment or services at the original exercise price. The common stock subject to repurchase is no longer classified as participating securities when shares revert to common stock outstanding as the awards vest and our repurchase right lapses.

Our redeemable noncontrolling interest relates to our 85% equity ownership interest in OpenEye. The OpenEye stockholder agreement contains a put option that gives the minority OpenEye stockholders the right to sell their OpenEye shares to us based on the fair value of the shares. The OpenEye stockholder agreement also contains a call option that gives us the right to purchase the remaining OpenEye shares from the minority OpenEye stockholders based on the fair value of the shares. The put and call options can each be exercised beginning in the first quarter of 2023. This redeemable noncontrolling interest is considered temporary equity and we report it between liabilities and stockholders’ equity in the consolidated balance sheets. The amount of the net income or loss attributable to redeemable noncontrolling interests is recorded in the consolidated statements of operations.

Note 17. Significant Service Providers

During the years ended December 31, 2019, 2018 and 2017, our 10 largest revenue service provider partners accounted for 52%, 57% and 60% of our consolidated revenue. One of our service provider partners within the Alarm.com segment individually represented greater than 15% but not more than 20% of our revenue for the years ended December 31, 2019, 2018 and 2017. Another one of our service provider partners in the Alarm.com segment individually represented greater than 10% but not more than 15% of our revenue for the year ended December 31, 2017.

One individual service provider partner in the Alarm.com segment represented more than 10% of accounts receivable as of December 31, 2019 and 2018.

Note 18. Income Taxes

The Tax Cuts and Jobs Act, or the Tax Act, was signed into law on December 22, 2017. This legislation made significant changes in U.S. tax law, including a reduction in the corporate tax rate, changes to net operating loss carryforwards and carrybacks and a repeal of the corporate alternative minimum tax. The legislation reduced the U.S. corporate income tax rate from 35% to 21%. As a result of the enacted Tax Act, we were required to revalue deferred tax assets and liabilities at the rate in effect when the deferred tax balances are scheduled to reverse. This revaluation resulted in an additional $8.8 million of income tax expense and a corresponding reduction in the deferred tax asset which was recorded during the year ended December 31, 2017.

Additionally, on December 22, 2017, the Securities and Exchange Commission staff issued Staff Accounting Bulletin No. 118, or SAB 118, to address the application of GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. Specifically, SAB 118 provides a measurement period for companies to evaluate the impacts of the Tax Act on their financial statements. We completed the accounting for the tax effects of the Tax Act during the three months ended September 30, 2018 and decreased our provisional estimate from $8.8 million to $8.7 million.

The components of our income tax expense are as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Current			
Federal	$ 1,615	$ 741	$ 584
State	900	653	(88)
Foreign	452	263	6
Total Current	2,967	1,657	502
Deferred			
Federal	2,622	(8,821)	3,837
State	(23)	(2,643)	(1,368)
Foreign	—	(18)	19
Total Deferred	2,599	(11,482)	2,488
Total	$ 5,566	$ (9,825)	$ 2,990

The difference between the income tax expense at the federal statutory rate and income tax expense in the consolidated statements of operations is as follows:

	Year Ended December 31,		
	2019	2018	2017
Federal statutory rate	21.0%	21.0 %	35.0%
State income tax expense, net of federal benefits	0.6	(3.4)	0.1
Nondeductible meals and entertainment	0.8	2.1	0.6
Nondeductible employee fringe benefits	—	1.3	—
Research and development tax credits	(7.9)	(48.7)	(16.1)
Tax windfall benefits	(7.5)	(55.7)	(36.5)
Change in tax rate due to tax reform	—	—	27.8
Change in tax rate	0.4	(1.4)	(0.6)
Other	2.1	0.8	(1.0)
Effective rate	9.5%	(84.0)%	9.3%

The components of our net deferred tax assets (liabilities) are as follows (in thousands):

	December 31,	
	2019	2018
Deferred tax assets, non-current		
Provision for doubtful accounts	$ 606	$ 576
Depreciation	267	—
Provision for notes receivable	—	829
Accrued expenses	3,114	9,588
Deferred revenue	2,060	2,226
Operating lease liabilities	10,929	—
Deferred rent	—	3,334
Stock-based compensation	8,840	6,064
Acquisition costs	2,811	3,092
Subsidiary unit compensation	185	138
Equity investments	243	119
Inventory reserve	30	—
Net operating losses	1,289	1,210
Tax credits	7,755	5,140
Intangible assets and prepaid patent licenses	—	758
Other	106	158
Total deferred tax assets, non-current prior to valuation allowance	38,235	33,232
Valuation allowance	(322)	—
Total deferred tax assets, non-current, net of valuation allowance	37,913	33,232
Deferred tax liabilities, non-current		
Intangible assets and prepaid patent licenses	(6,162)	(12)
Operating lease right-of-use assets	(7,441)	—
Depreciation	(3,030)	(3,393)
Sales commissions	(766)	(704)
Contingent liability	(170)	(172)
Internally developed software	(1,208)	—
Total deferred tax liabilities, non-current	(18,777)	(4,281)
Net deferred tax assets, non-current	$ 19,136	$ 28,951

A reconciliation of the beginning and ending amounts of unrecognized tax benefits (without related interest expense) is as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Beginning balance	$ 2,801	$ 1,973	$ 681
Additions based on tax positions of the current year	718	857	718
Additions based on tax positions of prior year	18	147	373
Decreases based on tax positions of prior year	(253)	—	—
Additions resulting from acquisitions	—	—	277
Decreases due to lapse of applicable statute of limitations	(219)	(176)	(76)
Ending balance	$ 3,065	$ 2,801	$ 1,973

Our effective income tax rates were 9.5%, (84.0)% and 9.3% for the years ended December 31, 2019, 2018 and 2017, respectively. Our effective tax rates were below the statutory rate primarily due to the tax windfall benefits from employee stock-based payment transactions, foreign derived intangible income deductions and research and development tax credits claimed, partially offset by the impact of non-deductible meal and entertainment expenses and state taxes.

We recognize a valuation allowance if, based on the weight of available evidence, both positive and negative, it is more likely than not that some portion, or all, of net deferred tax assets will not be realized. Due to the uncertainty of realization of certain deferred tax assets acquired as part of the Acquisition in 2017 related to our Canadian net operating losses and research and development tax credits totaling $0.3 million, we established a valuation allowance of $0.3 million during the second quarter of 2019, which remained at $0.3 million as of December 31, 2019. As of December 31, 2018, based on our historical and expected future taxable earnings, we believed it was more likely than not that we would realize all of the benefit of the existing deferred tax assets. Accordingly, we did not record a valuation allowance as of December 31, 2018.

We apply guidance for uncertainty in income taxes that requires the application of a more likely than not threshold to the recognition and de-recognition of uncertain tax positions. If the recognition threshold is met, this guidance permits us to recognize a tax benefit measured at the largest amount of the tax benefit that, in our judgment, is more likely than not to be realized upon settlement. We recorded unrecognized tax benefits of $0.6 million, $0.8 million and $1.0 million for research and development tax credits claimed during the years ended December 31, 2019, 2018 and 2017, respectively.

As of December 31, 2019 and 2018, we accrued $0.2 million and $0.1 million of total interest related to unrecognized tax benefits, respectively. We recognize interest and penalties related to unrecognized tax benefits as a component of income tax expense.

We are not aware of any events that make it reasonably possible that there would be a significant change in our unrecognized tax benefits over the next twelve months. Our cumulative liability for uncertain tax positions was $3.1 million and $2.8 million as of December 31, 2019 and 2018, respectively, and if recognized, would reduce our income tax expense and the effective tax rate.

We file income tax returns in the United States and Canada. We are no longer subject to U.S. income tax examinations for years prior to 2016, with the exception that operating loss carryforwards generated prior to 2016 may be subject to tax audit adjustment. We are generally no longer subject to state and local income tax examinations by tax authorities for years prior to 2016.

As of December 31, 2019, we had federal net operating loss carryforwards of $4.9 million, which are scheduled to begin to expire in 2030. As of December 31, 2019, we had state net operating loss carryforwards of $1.7 million, which are scheduled to begin to expire in 2027. As of December 31, 2019, we had federal research and development tax credit carryforwards of $5.2 million, which are scheduled to begin to expire in 2038. As of December 31, 2019, we had state research and development tax credit carryforwards of $4.3 million, which are scheduled to begin to expire in 2021. The federal net operating loss carryforward arose in connection with the 2013 acquisition of EnergyHub. Utilization of net operating loss carryforwards may be subject to annual limitations due to ownership change limitations as provided by the Internal Revenue Code of 1986, as amended.

Note 19. Segment Information

We have two reportable segments:

- Alarm.com segment
- Other segment

Our chief operating decision maker is our chief executive officer. Management determined the operational data used by the chief operating decision maker is that of the two reportable segments. Management bases strategic goals and decisions on these segments and the data presented below is used to measure financial results.

Our Alarm.com segment represents our cloud-based and Software platforms for the intelligently connected property and related solutions that contributed 93%, 93% and 94% of our revenue for the years ended December 31, 2019, 2018 and 2017, respectively. Our Other segment is focused on researching, developing and offering residential and commercial automation solutions and energy management products and services in adjacent markets. Inter-segment revenue includes sales of hardware between our segments.

Management evaluates the performance of its segments and allocates resources to them based on operating income (loss) as compared to prior periods and current performance levels. The reportable segment operational data is presented in the tables below (in thousands):

	Year Ended December 31, 2019				
	Alarm.com	Other	Intersegment Alarm.com	Intersegment Other	Total
SaaS and license revenue	$ 317,580	$ 19,795	$ —	$ —	$ 337,375
Hardware and other revenue	156,265	20,919	(4,301)	(7,895)	164,988
Total revenue	473,845	40,714	(4,301)	(7,895)	502,363
Operating income / (loss)	52,046	(1,639)	134	(128)	50,413
Assets	589,952	17,844	(49,997)	—	557,799

	Year Ended December 31, 2018				
	Alarm.com	Other	Intersegment Alarm.com	Intersegment Other	Total
SaaS and license revenue	$ 278,013	$ 13,059	$ —	$ —	$ 291,072
Hardware and other revenue	119,221	20,316	(4,749)	(5,366)	129,422
Total revenue	397,234	33,375	(4,749)	(5,366)	420,494
Operating income / (loss)	16,927	(4,708)	(273)	256	12,202
Assets	482,666	19,629	(61,309)	(1)	440,985

	Year Ended December 31, 2017				
	Alarm.com	Other	Intersegment Alarm.com	Intersegment Other	Total
SaaS and license revenue	$ 227,583	$ 8,700	$ —	$ —	$ 236,283
Hardware and other revenue	92,445	15,154	(2,945)	(2,000)	102,654
Total revenue	320,028	23,854	(2,945)	(2,000)	338,937
Operating income / (loss)	41,439	(8,248)	(175)	358	33,374

Our SaaS and license revenue for the Alarm.com segment included software license revenue of $43.4 million, $41.3 million and $29.7 million for the years ended December 31, 2019, 2018 and 2017, respectively. There was no software license revenue recorded for the Other segment during the years ended December 31, 2019, 2018 and 2017.

Depreciation and amortization expense was $22.1 million, $21.4 million and $17.4 million for the Alarm.com segment for the years ended December 31, 2019, 2018 and 2017, respectively. Depreciation and amortization expense was less than $0.1 million, $0.3 million and $0.3 million for the Other segment for the years ended December 31, 2019, 2018 and 2017, respectively. Additions to property and equipment were $15.6 million, $11.7 million and $9.3 million for the Alarm.com segment for the years ended December 31, 2019, 2018 and 2017, respectively. Additions to property and equipment were $0.7 million, $0.1 million and $0.1 million for the Other segment for the years ended December 31, 2019, 2018 and 2017, respectively.

We derived substantially all revenue from North America for the years ended December 31, 2019, 2018 and 2017. Substantially all our long-lived assets were in North America as of December 31, 2019 and 2018.

Note 20. Related Party Transactions

Installation Partner

Our installation partner in which we have a 48.2% ownership interest performs installation services for security dealers and also provides installation services for us and certain of our subsidiaries. We account for this investment using the equity method. As of December 31, 2019 and 2018, our investment balance in our installation partner was zero. During the years ended December 31, 2019, 2018 and 2017, we recorded $0.4 million, $0.4 million and $0.7 million of cost of hardware and other revenue in connection with this installation partner. As of December 31, 2019 and 2018, the accounts payable balance to our installation partner was less than $0.1 million.

Affiliate Lease

OpenEye leases its production and administration operations facility from a company that is controlled by certain employees of OpenEye, or the Landlord. The lease term is one year with an expiration date of October 20, 2020. OpenEye can terminate the lease at any time by providing 30 days' prior written notice and the Landlord can terminate the lease by providing 90 days' prior written notice. Total minimum lease payments over the term of the lease are $0.2 million. During the year ended December 31, 2019, we recorded less than $0.1 million of rent expense in connection with this lease arrangement. There was no accounts payable balance due to the Landlord under this lease arrangement as of December 31, 2019.

Note 21. Quarterly Financial Data (unaudited)

The following table shows selected unaudited quarterly consolidated statement of operations data for each of our eight most recently completed quarters. In the opinion of management, the information for each of these quarters has been prepared on the same basis as our audited financial statements and include all adjustments, consisting of normal recurring adjustments and accruals, necessary for the fair statement of financial information in accordance with GAAP. Historical results are not necessarily indicative of results that may be achieved in future periods, and operating results for quarterly periods are not necessarily indicative of operating results for a full year.

Information about prior period acquisitions that may affect the comparability of the selected financial information presented below is included in Note 7. Information about the $28.0 million expense recorded in general and administrative expense during the three months ended September 30, 2018, which relates to the agreement reached to settle the legal matter alleging violations of the TCPA and may affect the comparability of the quarterly financial data presented below, is included in Note 13. Information about the $1.7 million of interest recorded within interest income and the $6.9 million of gain recorded within other income, net, during the three months ended September 30, 2019, which relates to the Promissory Notes proceeds and the Acquired Promissory Note proceeds received from one of our hardware suppliers and may affect the comparability of the quarterly financial data presented below, is included in Note 9. The selected consolidated statements of operation data in amounts are presented below (in thousands, except per share data):

	Three Months Ended							
	Mar. 31, 2018	June 30, 2018	Sept. 30, 2018	Dec. 31, 2018	Mar. 31, 2019	June 30, 2019	Sept. 30, 2019	Dec. 31, 2019
Total revenue	$ 92,756	$ 104,488	$ 111,848	$ 111,402	$ 112,335	$ 121,660	$ 127,880	$ 140,488
Total cost of revenue	28,377	36,488	41,992	38,858	38,950	44,556	47,523	52,570
Net income / (loss)	10,515	10,733	(7,652)	7,928	9,010	13,796	17,690	12,834
Net income / (loss) attributable to common stockholders	10,512	10,732	(7,652)	7,928	9,010	13,796	17,690	13,035
Net income / (loss) per share attributable to common stockholders								
Basic	$ 0.22	$ 0.23	$ (0.16)	$ 0.16	$ 0.19	$ 0.29	$ 0.36	$ 0.27
Diluted	$ 0.21	$ 0.22	$ (0.16)	$ 0.16	$ 0.18	$ 0.27	$ 0.35	$ 0.26

Alarm.com Holdings, Inc.
Schedule II
Valuation and Qualifying Accounts and Reserves
(In thousands)

Description	Balance at Beginning of Year	Additions Charged Against Revenue	Additions Charged to Other Accounts	Deductions	Balance at End of Year
Year Ended December 31, 2019					
Allowance for doubtful accounts	$ 1,425	$ —	$ 1,170	$ (11)	$ 2,584
Allowance for product returns	1,915	(123)	105	(822)	1,075
Allowance for notes receivable	3,319	—	(3,272)	(31)	16
Deferred tax valuation allowance	—	—	322	—	322
Year Ended December 31, 2018					
Allowance for doubtful accounts	$ 1,449	$ —	$ 149	$ (173)	$ 1,425
Allowance for product returns	2,471	273	—	(829)	1,915
Allowance for notes receivable	—	—	3,319	—	3,319
Year Ended December 31, 2017					
Allowance for doubtful accounts	$ 1,282	$ —	$ 453	$ (286)	$ 1,449
Allowance for product returns	2,314	2,055	—	(1,898)	2,471

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

We maintain "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to the company’s management, including its chief executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2019. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

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 Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our management, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2019 based on the framework in *Internal Control-Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on the results of its evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2019.

Our independent registered public accounting firm, PricewaterhouseCoopers LLP, has audited our financial statements included in this Annual Report on Form 10-K and the effectiveness of our internal control over financial reporting as of December 31, 2019. The report of PricewaterhouseCoopers LLP is incorporated by reference to Item 8 of this Annual Report on Form 10-K.

On October 21, 2019, we acquired 85% of the issued and outstanding capital stock of PC Open Incorporated, a Washington corporation, doing business as OpenEye. In accordance with guidance issued by the Securities and Exchange Commission, management's assessment of the effectiveness of our internal control over financial reporting excluded the internal control activities of OpenEye, which is included in our December 31, 2019 consolidated financial statements, for which total assets and total revenue of OpenEye represented 1% of the related consolidated financial statement amounts as of and for the year ended December 31, 2019.

Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during our most recent fiscal quarter ended December 31, 2019 that have materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, believes that our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent 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. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. 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, have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by management override of the controls. 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 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.

ITEM 9B. OTHER INFORMATION

Election of New Director

Effective February 21, 2020, we appointed Simone Wu to serve on the Board of Directors, or the Board, as a Class II director. Ms. Wu will serve for the term expiring at our upcoming 2020 Annual Meeting of Stockholders or until her earlier death, resignation or removal. Ms. Wu has been appointed to the Audit Committee of the Board.

Ms. Wu, 55, is the Senior Vice President, General Counsel, Corporate Secretary and External Affairs for Choice Hotels International, Inc., a position she has held since 2015, and previously served as the Senior Vice President, General Counsel, Corporate Secretary & Chief Compliance Officer at Choice Hotels from 2012 to 2015. From 2001 to 2012, she held a number of positions of increasing responsibility with XO Communications, including serving as its General Counsel. Ms. Wu earned a B.A. in Political Science from the University of Michigan and a J.D. from Columbia University.

Ms. Wu will be compensated in accordance with our standard compensation arrangements for non-employee directors, which are described in greater detail in our definitive proxy statement on Schedule 14A relating to our 2019 Annual Meeting of Stockholders, which was filed with the Securities and Exchange Commission, or the SEC, on April 26, 2019.

In connection with her appointment, we entered into an indemnity agreement with Ms. Wu, a copy of which has been filed as Exhibit 10.24 hereto and incorporated herein by reference.

Ms. Wu was not selected as a director pursuant to any arrangements or understandings with us or with any other person, and there are no related party transactions between us and Ms. Wu that would require disclosure under Item 404(a) of Regulation S-K.

PART III.

We will file a definitive Proxy Statement for our Annual Meeting, or our 2020 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 2020 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 Item 10 is hereby incorporated by reference to the sections of our 2020 Proxy Statement under the captions "Information Regarding Committees of the Board of Directors," "Election of Directors," "Executive Officers" and "Delinquent Section 16(a) Reports."

We have adopted a written Code of Business Conduct and Ethics, or the Code of Conduct, applicable to all of our employees, executive officers and directors, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A current copy of the Code of Conduct is available on the Investors section of our website, www.alarm.com, under "Corporate Governance." We intend to disclose on our website any amendments to, or waivers from, our Code of Conduct that are required to be disclosed pursuant to SEC rules.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is hereby incorporated by reference to the sections of our 2020 Proxy Statement under the captions "Executive Compensation," "Director Compensation" and “Information Regarding Committees of the Board of Directors."

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

The information required by Item 12 is hereby incorporated by reference to the sections of our 2020 Proxy Statement under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information."

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by Item 13 is hereby incorporated by reference to the sections of our 2020 Proxy Statement under the captions "Transactions with Related Persons" and "Independence of the Board of Directors."

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by Item 14 is hereby incorporated by reference to the section of our 2020 Proxy Statement under the caption "Principal Accountant Fees and Services" and “Pre-Approval Policies and Procedures.”

PART IV.

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

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

(1) Consolidated Financial Statements and Reports of Independent Registered Public Accounting Firm
(2) Consolidated Financial Statement Schedule
(3) Exhibits are incorporated herein by reference or are filed with this Annual Report as indicated below

(b) Exhibits

		Incorporated by Reference			
Exhibit	Description	Schedule / Form	File Number	Exhibit	File Date
2.1	Asset Purchase Agreement by and among ICN Acquisition, LLC, Icontrol Networks, Inc., the Seller Stockholders, Fortis Advisors LLC, and the Registrant as Guarantor, dated as of June 23, 2016	8-K	001-37461	2.1	June 23, 2016
2.2	Amendment No. 1 to Asset Purchase Agreement by and among ICN Acquisition, LLC, Icontrol Networks, Inc., the Seller Stockholders, Fortis Advisors LLC, and the Registrant as Guarantor, dated November 15, 2016	8-K	001-37461	2.1	November 16, 2016
3.1	Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-37461	3.1	July 2, 2015
3.2	Amended and Restated Bylaws of the Registrant	8-K	001-37461	3.2	July 2, 2015
4.1	Form of Common Stock Certificate of the Registrant	S-1	333-204428	4.1	May 22, 2015
4.2	Amended and Restated Registration Rights Agreement by and among the Registrant and certain of its stockholders, dated July 11, 2012	S-1	333-204428	4.2	May 22, 2015
4.3*	Description of Securities Registered Pursuant To Section 12 of the Securities Exchange Act of 1934, As Amended				
10.1	Deed of Office Lease Agreement between Registrant and Marshall Property LLC, dated August 8, 2014	S-1	333-204428	10.2	May 22, 2015
10.2	First Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and Marshall Property LLC, dated May 29, 2015	10-Q	001-37461	10.1	August 15, 2016
10.3	Second Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and Marshall Property LLC, dated October 19, 2015	10-Q	001-37461	10.2	August 15, 2016
10.4	Third Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and Marshall Property LLC, dated May 6, 2016	10-Q	001-37461	10.3	August 15, 2016
10.5	Fourth Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and Marshall Property LLC, dated September 15, 2016	10-Q	001-37461	10.3	November 14, 2016
10.6	Fifth Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and Marshall Property LLC, dated January 31, 2017	10-K	001-37461	10.7	March 16, 2017
10.7	Sixth Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and TMG TMC 3, L.L.C., dated October 10, 2018	10-K	001-37461	10.8	March 1, 2019
10.8	Seventh Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and TMG TMC 3, L.L.C., dated May 16, 2019	10-Q	001-37461	10.1	August 9, 2019
10.9	Eighth Amendment to Deed of Office Lease Agreement by and between Alarm.com Incorporated and TMG TMC 3, L.L.C., dated July 17, 2019	10-Q	001-37461	10.2	August 9, 2019
10.10†	Amended and Restated 2009 Stock Incentive Plan, Form of Non-Qualified Stock Option Agreement and Form of Early Exercise Notice and Restricted Stock Purchase Agreement thereunder	S-1	333-204428	10.3	May 22, 2015
10.11†	2015 Equity Incentive Plan	10-Q	001-37461	10.1	August 14, 2015
10.12†	Form of Option Grant Package under 2015 Equity Incentive Plan	10-K	001-37461	10.10	February 28, 2018

10.13†	Form of RSU Notice and Agreement under 2015 Equity Incentive Plan	10-K	001-37461	10.12	March 1, 2019
10.14†	Form of Early Exercise Restricted Stock Purchase Agreement	10-K	001-37461	10.7	February 29, 2016
10.15†	2015 Employee Stock Purchase Plan	10-Q	001-37461	10.2	August 14, 2015
10.16†	Alarm.com Holdings, Inc. Executive Bonus Plan	10-Q	001-37461	10.1	May 9, 2019
10.17†	Form of Indemnity Agreement by and between Registrant and each of its directors and executive officers	S-1/A	333-204428	10.9	June 11, 2015
10.18†	Offer Letter by and between the Registrant and Steve Valenzuela dated October 12, 2016	8-K	001-37461	10.1	November 14, 2016
10.19#	Reformed Master Services Agreement by and between Alarm.com Incorporated and ADT LLC, effective as of August 19, 2016	10-Q	001-37461	10.2	November 14, 2016
10.20	Senior Secured Credit Facilities Credit Agreement by and among the Registrant, Alarm.com Incorporated, Silicon Valley Bank, Bank of America, N.A. and the several lenders from time to time parties thereto, dated October 6, 2017	10-Q	001-37461	10.2	November 9, 2017
10.21	First Amendment to the Senior Secured Credit Facilities Credit Agreement by and among the Registrant, Alarm.com Incorporated, Silicon Valley Bank, Bank of America, N.A. and the several lenders from time to time parties thereto, dated November 30, 2018	10-K	001-37461	10.25	March 1, 2019
10.22	Class Action Settlement Agreement by and between Alarm.com Holdings, Inc., Alarm.com Incorporated, Abante Rooter and Plumbing, Inc., Mark Hankins and Philip J. Charvat, individually and on behalf of all others similarly situated	10-K	001-37461	10.27	March 1, 2019
10.23*^	First Amendment to Reformed Master Services Agreement by and between Alarm.com Incorporated and ADT LLC, effective as of December 9, 2019				
10.24*	Indemnity Agreement by and between Alarm.com Holdings, Inc. and Simone Wu				
21.1*	Subsidiaries of the Registrant				
23.1*	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm				
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				
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				
32.1**	Certification of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document				
101.SCH*	Inline XBRL Taxonomy Extension Schema Document				
101.CAL*	Inline XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF*	Inline XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB*	Inline XBRL Taxonomy Extension Label Linkbase Document				
101.PRE*	Inline XBRL Taxonomy Extension Presentation Linkbase Document				
104*	Cover Page Interactive Data File - the cover page interactive data is embedded within the Inline XBRL document or included within the Exhibit 101 attachments				

* Filed herewith.
** Furnished herewith.
† Indicates management contract or compensatory plan.
\# Confidential treatment has been granted by the Securities and Exchange Commission as to certain portions of this document.
^ Portions of this document (indicated by "[***]") have been omitted because they are not material and would likely cause competitive harm to Alarm.com Holdings, Inc. if disclosed.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

SIGNATURES

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

Alarm.com Holdings, Inc.

Date: February 25, 2020

By: /s/ Stephen Trundle
Stephen Trundle
President and Chief Executive Officer
(Principal Executive Officer)

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

Signature	Title	Date
/s/ Stephen Trundle Stephen Trundle	President, Chief Executive Officer and Director *(Principal Executive Officer)*	February 25, 2020
/s/ Steve Valenzuela Steve Valenzuela	Chief Financial Officer *(Principal Financial Officer and Principal Accounting Officer)*	February 25, 2020
/s/ Timothy McAdam Timothy McAdam	Chairman of the Board of Directors	February 25, 2020
/s/ Donald Clarke Donald Clarke	Director	February 25, 2020
/s/ Darius G. Nevin Darius G. Nevin	Director	February 25, 2020
/s/ Hugh Panero Hugh Panero	Director	February 25, 2020
/s/ Mayo Shattuck Mayo Shattuck	Director	February 25, 2020
Simone Wu	Director	

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BOARD OF DIRECTORS

Stephen Trundle
President and Chief Executive Officer
Alarm.com

Timothy McAdam
General Partner
Technology Crossover Ventures

Donald Clarke
Chief Financial Officer
Plex Systems, Inc.

Darius G. Nevin
Member
G3 Capital Partners, LLC

Hugh Panero
Owner
Yellow Brick Road Ventures, LLC

Mayo Shattuck
Chairman
Exelon Corporation

Simone Wu
Senior Vice President, General Counsel,
Corporate Secretary & External Affairs,
Choice Hotels International, Inc.

EXECUTIVE OFFICERS

Stephen Trundle
President and Chief Executive Officer

Steve Valenzuela
Chief Financial Officer

Jeffrey Bedell
Chief Strategy and Innovation Officer

David Hutz
Chief Systems Architect

Daniel Kerzner
Chief Product Officer

Jean-Paul Martin
Chief Technology Officer and Co-Founder

Daniel Ramos
Senior Vice President and Corporate Secretary

CORPORATE INFORMATION

Corporate Headquarters
Alarm.com Holdings, Inc.
8281 Greensboro Drive, Suite 100
Tysons, VA 22102
Phone: 877.389.4033

Stock Listing
Alarm.com Holdings Inc. stock is publicly traded on The Nasdaq Global Select Market under the ticker symbol: **ALRM**

Investor Relations
Our investor relations website is located at investors.alarm.com
Contact ir@alarm.com

Independent Registered Public Accounting Firm
PricewaterhouseCoopers LLP
1800 Tysons Boulevard
McLean, VA 22102

Transfer Agent
American Stock Transfer & Trust Company, LLC
6201 15th Avenue
Brooklyn, NY 11219
Phone: 1.800.937.5449
www.astfinancial.com

Annual Meeting of Stockholders
June 3, 2020 at 9:00 a.m. ET

COMMITTEE COMPOSITION

	Audit	Nominating & Corporate Governance	Compensation
Timothy McAdam (Chairman of the Board)		Chair	Member
Donald Clarke	Chair		
Darius G. Nevin	Member		Chair
Hugh Panero	Member		
Mayo Shattuck		Member	
Simone Wu	Member		

Chairman of the Board   Chair   Member

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