

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

FORM 10-K

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 001-38600

TENABLE HOLDINGS, INC.

(Exact name of registrant as specified in its charter)

Delaware

47-5580846

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer Identification Number)

7021 Columbia Gateway Drive, Suite 500, Columbia, Maryland, 21046

(Address of principal executive offices, including zip code)

(410) 872-0555

(Registrant's telephone number, including area code)

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

Title of each class	Trading symbol(s)	Name of exchange on which registered
Common stock, par value \$0.01 per share	TENB	Nasdaq Global Select Market

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes 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	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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

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

As of June 28, 2019, the aggregate market value of the common stock of the registrant held by non-affiliates was approximately \$1.2 billion.

The number of shares of the Registrant's common stock outstanding as of February 24, 2020 was 99,404,819.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to the 2020 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Annual Report on Form 10-K. The Proxy Statement will be filed with the Securities and Exchange Commission within 120 days after the year ended December 31, 2019.

TENABLE HOLDINGS, INC.
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PART I

Forward-Looking Statements

This Annual Report on Form 10-K, including the sections entitled "Business," "Risk Factors," and "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements that 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. Statements that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. 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 forward-looking statements include, but are not limited to, statements concerning the following:

- our market opportunity;
- the effects of increased competition as well as innovations by new and existing competitors in our market;
- our ability to adapt to technological change, release new products and product features and effectively enhance, innovate and scale our enterprise platform and solutions;
- our ability to effectively manage or sustain our growth and to achieve profitability;
- our ability to maintain and expand our customer base, including by attracting new customers;
- our relationships with third parties, including channel partners;
- completed and potential acquisitions and integration of complementary businesses and technologies;
- our ability to maintain, or strengthen awareness of, our brand;
- perceived or actual problems with the security, integrity, reliability, compatibility and quality of our platform and solutions;
- 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 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
- the future trading prices of our common stock and the impact of securities analysts' reports on these prices.

These statements represent the beliefs and assumptions of our management based on information currently available to us. Such forward-looking statements are subject to risks, uncertainties and other important factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to those discussed in the section titled "Risk Factors" included under Part I, Item 1A. Furthermore, such forward-looking statements speak only as of the date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances that occur after the date of this report.

Item 1. Business

Overview

We are a leading provider of solutions for a new category of cybersecurity that we call Cyber Exposure. Cyber Exposure is a discipline for managing, measuring and comparing cybersecurity risk in the digital era. We are building on our deep technology expertise in the traditional vulnerability assessment and management market and are expanding that market to include modern attack surfaces and to provide analytics that help organizations translate vulnerability data into business insights to understand and reduce their cybersecurity risk.

Digital transformation is driving radical change. As organizations modernize their IT infrastructure and adopt cloud or hybrid cloud architectures that are no longer housed in the confines of their corporate networks, they have less visibility and control over the security of these assets. Organizations are also increasingly implementing modern solutions, such as Internet of Things, or IoT, devices, web applications and application containers, to enable the rapid development and deployment of new products, services and business models, as well as to drive operational efficiencies. Further, safety-critical Operational Technology, or OT, such as Industrial Control Systems, are now network-connected and need to be secured from cybersecurity threats. This digital transformation increases IT complexity and cybersecurity risk as attack surfaces expand.

While other functions in an organization, such as finance and operations, have a system to help them manage and measure risk, cybersecurity risk has not historically been adequately measured and understood. We are building our enterprise platform to be the System of Record for cybersecurity risk. Our enterprise platform provides a unified view into the organization's state of security and enables security teams to prioritize and focus their remediation efforts, and translates vulnerability data into actionable business metrics and insights that boards of directors and executives can understand and use to make strategic decisions. We believe our Cyber Exposure solutions are transforming how cybersecurity risk is managed and measured and will help organizations more rapidly embrace digital transformation.

Our enterprise platform offerings provide broad visibility into security issues such as vulnerabilities, misconfigurations, internal and regulatory compliance violations and other indicators of the state of an organization's security across IT infrastructure and applications, cloud environments and Industrial IoT and OT environments. We also provide deep analytics to help organizations score, trend and compare their cyber exposure over time, and communicate cyber risk in business terms to make better strategic decisions. Our enterprise platform integrates and analyzes data from our native collectors alongside IT asset, vulnerability and threat data from third-party systems and applications to prioritize security issues for remediation and focus an organization's resources based on risk and business criticality.

We have experienced rapid growth in recent periods. In 2019, 2018 and 2017 our total revenue was \$354.6 million, \$267.4 million and \$187.7 million, respectively, representing year-over-year growth rates of 33% from 2018 to 2019 and 42% from 2017 to 2018. Our net loss was \$99.0 million, \$73.5 million and \$41.0 million in 2019, 2018 and 2017, respectively.

Our Platform Offerings

Our vision is to empower every organization to understand and reduce their cybersecurity risk.

Our Enterprise Platform Offerings

Our enterprise platform enables organizations to answer foundational and strategic questions such as:

- Where are we exposed?
- Where should we prioritize based on risk?
- Are we reducing our exposure over time?
- How do we compare to our peers?

Our enterprise platform offerings include Tenable.io, which is our software as a service, or SaaS, offering, and Tenable.sc, which is our on-premises offering, both of which provide organizations with applications purpose-built for areas of both traditional and modern attack surfaces. These applications are designed with views, workflows and dashboards to help identify vulnerabilities, internal and regulatory compliance violations, misconfigurations and other cybersecurity issues, prioritize these issues for remediation and provide insightful remediation guidance. In addition, our enterprise platform offerings provide a depth of insight that stems from risk-based and predictive analytics.

In 2019, we released Predictive Prioritization, which combines vulnerability data and threat intelligence to predict which vulnerabilities are most likely to be exploited. We also combine asset data to layer in the asset's business criticality to further help prioritization. Additionally, with the general availability of Tenable Lumin in 2019, we help organizations score their cyber exposure, or level of cyber risk, across technology areas, teams or business units, prioritize where to focus to reduce their risk, track improvement over time and benchmark their organization to industry peers. We leverage our unique data asset of vulnerability knowledge built over 20 years and combine it with other data sources, such as threat intelligence and asset information. Through machine learning algorithms, we provide insights

that help organizations focus based on business impact. As we extend our depth of analytics to measure cybersecurity risk beyond vulnerability prioritization, for example, to assess which public cloud platforms pose the most risk to an organization, we believe Lumin will become a key component of an organization's cybersecurity portfolio to help security executives better understand their overall cyber risk posture and make strategic decisions based on these insights.

Enterprises typically start with vulnerability management to secure traditional IT assets and expand their deployment over time to cover more traditional IT assets and/or more types of modern assets by deploying additional applications. For organizations with hybrid IT environments, some customers choose to expand their deployments to include both Tenable.sc and Tenable.io as an integrated solution spanning both on-premises and cloud-based management.

Our enterprise platform offerings deliver the following capabilities:

- *Live asset discovery.* We can automatically discover a broad range of traditional and modern IT assets, including on-premises infrastructure, web applications, cloud environments, mobile devices, containers, IoT devices and OT systems. We use a combination of active scanning, passive network monitoring and public cloud monitoring via our connector to identify known and unknown assets on the network.
- *Automated exposure assessment.* With every change in a customer's computing environment, we can automatically assess and identify where there are vulnerabilities, internal and regulatory compliance violations and misconfigurations across assets and cloud environments, such as missing software patches or outdated software versions. In addition, we can help optimize existing security technology investments to identify indicators of cyber exposure, such as improperly configured anti-virus software.
- *Deep analytics to allow for prioritization.* We combine our product and vulnerability research IP with third-party data to provide business context and allow organizations to prioritize remediation efforts based on the business criticality of the asset and the likelihood of exploit. Predictive Prioritization enables organizations to reduce business risk by focusing on the vulnerabilities with the greatest likelihood of imminently being exploited, by combining Tenable vulnerability data with third-party threat and vulnerability data across more than 150 data sources using a proprietary machine learning algorithm developed by our Tenable Research data science team to predict the likelihood of a vulnerability being exploited. Predictive Prioritization provides a threat-based view of vulnerabilities, which is a critical component of modern risk-based vulnerability management.
- *Open and extensible platform.* Our enterprise platform ingests a wide set of third-party data sources to enhance analysis and integrates that data with industry-leading IT workflow, security information and event management, or SIEM, and systems management tools to accelerate remediation and provide common visibility across security and IT operations teams.
- *Cyber exposure measurement.* Tenable Lumin leverages our expansive knowledge base of assets and vulnerabilities coupled with data science insights to help our customers objectively score, trend and benchmark cyber exposure across their organizations, including by business unit or geography, and compare their cyber exposure against industry peers and best practices. We believe this capability is critical to help security executives effectively translate technical information and communicate cybersecurity risk to a non-technical audience, including the C-suite and the Board of Directors, to make better strategic decisions on where to focus investment to maximize cybersecurity risk reduction. As we continue to expand our database with more vulnerability and asset intelligence as well as additional third-party data sources, we anticipate that we will be able to leverage these insights in Lumin to measure an organization's cyber exposure beyond vulnerabilities to overall cybersecurity program effectiveness. Lumin is a key component of building the System of Record for cybersecurity to help organizations make better decisions around cybersecurity risk, including but not limited to vulnerability prioritization. This supports our vision to create industry standard metrics and benchmarks for cyber exposure to create an objective measure of cyber risk.

Nessus

Our co-founder is the creator of Nessus, one of the most widely deployed vulnerability assessment solutions in the cybersecurity industry, which underpins our enterprise platform. Since the introduction of Nessus in 1998, an extensive community of Nessus users has emerged. We continue to cultivate knowledge and affinity within this user base, which, when combined with our enterprise customers and our Tenable Research team of cybersecurity and data science experts, creates powerful network effects in the form of a continuous feedback loop of data and insights. We use these

learnings to expand our assessment capabilities and coverage, continually optimize our solutions and inform our product strategy and innovation priorities. We believe these data and insights will also fuel and strengthen our benchmarking capabilities over time.

Nessus Professional

Nessus Professional is a vulnerability assessment solution for identifying security vulnerabilities, configuration issues and malware. Nessus Professional serves as both a stand-alone product designed for security consultants and practitioners performing one-time or ad-hoc assessment as well as an on-ramp product to our enterprise platform. With broad vulnerability coverage, accurate analysis and an easy-to-use interface, Nessus Professional offers a cost-effective and comprehensive solution for security consultants and users with ad-hoc assessment needs.

Nessus Essentials

We also offer a free version of our Nessus product, Nessus Essentials, which includes vulnerability and configuration assessment for a limited number of assets, but does not include access to support and certain features that Nessus Professional customers enjoy.

Technology Architecture

Our platform is built from the ground up to support the needs of modern IT assets and environments. Our platform's scalability can meet the requirements of the largest global enterprise customers, which may require assessment for millions of assets.

Foundational elements of our technology architecture include:

- **Public cloud infrastructure for agility.** Our use of the public cloud delivers agility and market responsiveness without the capital investment or time delay involved with planning, purchasing and deploying hardware. It also provides a flexible cost profile in which capacity can be quickly adjusted up or down in response to new opportunities and market demand, with relatively modest fixed costs.
- **Scalability.** Our platform scales up and down to continuously meet customer demands, through the use of public cloud infrastructure around the world. This approach provides elastic resources for compute, data transfer and storage, and allows us to meet the needs of even the largest global enterprises and government agencies. Our platform manages and supports millions of assets for multiple enterprise customers across a variety of industries, with the ability to process millions of application programming interface, or API, calls daily. The platform can scale to support IoT deployments that are an order of magnitude larger than IT deployments.
- **Availability.** Our modern architecture, leveraging state-of-the-art public cloud services, offers high availability and high performance. It provides geographic redundancy, as well as automated backup, without the need for us to build redundant infrastructure. As a result, we offer a service level agreement for Tenable.io that promises 99.95% availability to help ensure the reliability of operation for our customers.
- **Extensibility and integration.** Our open API and software development kit, or SDK, enables import of data from third-party sources and sensors-including competitor products-to augment our native discovery, assessment and analytics. This is essential to providing a unified view of assets, vulnerabilities and exposure across the enterprise. These capabilities also enable flexible export of our data to third party systems.
- **Unified Platform.** Our products are built on a unified platform with a unified data model that enables us to share data, assets and vulnerabilities across our applications so our customers can run workflows and have a consistent user experience across our products.
- **Widely adopted industry standard file format.** The ".Nessus" file format for vulnerability data used in all of our products is openly documented and supported by dozens of products and programming languages, which simplifies integration with our ecosystem partners' technologies.

Our Technology Ecosystem

We have partnered and/or integrated with market leading technology companies to pioneer the industry's first Cyber Exposure ecosystem to help organizations build resilient cybersecurity programs. Our ecosystem consists of a variety of third-party data import sources into our platform offerings, as well as export of our data out to third-party IT

systems. Our technology ecosystem connects disparate solutions and data to automate processes and accelerate an organization's ability to understand, manage and reduce its cyber exposure.

We integrate a variety of third-party data sources, including ticketing, configuration management databases, or CMDBs, and systems management, into our platform to augment our native data collection and help with analysis and remediation prioritization. Furthermore, our data is also exported out to enrich third-party IT management and security systems.

Our Growth Strategy

Our objectives are to maintain our market leadership in Cyber Exposure and to capture our large market opportunity. To accomplish these objectives, we intend to:

- **Continue to Acquire New Enterprise Platform Customers.** We believe there is a substantial opportunity to increase adoption of our enterprise platform offerings. We have experienced growth in new enterprise platform customers due to investments in sales and marketing. We intend to continue to aggressively pursue new domestic and international customers by adding sales capacity and leveraging our network of channel partnerships around the world.
- **Expand Asset Coverage Within Our Customer Base.** We believe we have a significant opportunity to expand our relationships with our existing customers by targeting additional teams, business units or geographies, pursuing broad enterprise deployments and generally expanding our coverage of their IT assets.
- **Invest in Our Technology Platform and Expand Use Cases.** We intend to continue to innovate and develop our enterprise platform, including the addition of incremental capabilities, such as coverage of new attack surfaces and asset types and the addition of analytical capabilities, to help our customers measure and benchmark their cyber exposure. As we collect more data and ingest more data from third-party sources, we believe our data set will become even more valuable over time, which will allow us to continue to develop new analytical products and capabilities to our existing product suite over time.
- **Explore Acquisition Opportunities.** In 2019 we acquired Indegy Ltd., or Indegy, a leader in industrial cybersecurity that provides visibility, security and control across OT environments. Indegy further extends our depth of OT expertise and intelligence and our breadth of OT-specific capabilities from vulnerability management to asset inventory, configuration management and threat detection. We may acquire other businesses, technology and/or development personnel that will expand and enhance the functionality of our platform offerings.

Customers

We sell and market our enterprise platform offerings through our field sales force that works closely with our channel partners, which includes a network of distributors and resellers, in developing sales opportunities. We use a two-tiered channel model whereby we sell our enterprise platform offerings to our distributors, which in turn sell to our resellers, which then sell to end users, which we call customers.

Our customers are located in over 160 countries and include enterprises of all sizes and span a wide range of industries, including manufacturing, energy and industrials; technology, media and telecommunications; banking, insurance and finance; government, education and non-profit; healthcare; and retail and consumer.

As of December 31, 2019, we had over 30,000 customers who licensed our Tenable.io, Tenable.sc or Nessus Professional products. Our customers include more than 50% of the Fortune 500 and over 30% of the Global 2000 organizations at December 31, 2019. In 2019, 2018 and 2017, no single customer represented more than 2% of our revenue.

Sales and Marketing

Our sales strategy employs both a direct-touch approach through our sales forces and a low-touch approach through sales closed by our channel partners and transacted on our e-commerce website. Both direct-touch and channel-originated sales are fulfilled through our channel partnerships. Our sales and customer success renewal teams collaborate closely with our channel partners to prospect, manage and support our customers, developing and maintaining close relationships with all of our enterprise platform customers.

We sell to organizations of all sizes across a broad range of industries, with a specific focus on enterprise accounts. Our sales team is divided by customer size and geography, including Americas; Europe, the Middle East and Africa, or EMEA; and Asia Pacific and Japan, or APAC.

Our partner ecosystem provides us with a number of advantages, including increased in-bound registered sales leads, broader geographic reach and greater deal velocity. Our channel partners include distributors, value-added resellers, system integrators and managed security service providers.

Our marketing efforts focus on cultivating brand awareness and leveraging our brand strength with Nessus, building demand across all segments with a specific emphasis on our enterprise customers and delivering tailored marketing programs focused on security executives, functional managers and security practitioners and consultants with Nessus. We also provide educational programs to DevOps teams for our Container Security and Web Application Scanning products. We execute marketing programs targeted at new customer acquisition, customer retention and cross-selling and up-selling of products across our platform.

Research and Development

Our engineering expertise combines extensive security product development experience with individuals who possess deep cloud and user interface design background. Our engineering team has groups that focus on Nessus configuration auditing, Nessus vulnerability enumeration, passive network traffic analysis and system log analysis, including public cloud.

Additionally, our Tenable Research team includes a team of cybersecurity and data science experts who produce original research and apply data science techniques to our security telemetry data to provide meaningful insights. This data fuels the benchmarking offering in our enterprise platform and we believe will become a trusted source throughout the industry for understanding Cyber Exposure. Tenable Research, including data science, is a key component of our thought leadership.

We believe ongoing and timely development of new products and features is imperative to maintaining our competitive position. We continue to invest in development of our solutions across our global innovation centers in Columbia, Maryland; Los Angeles, California; San Jose, California; Dublin, Ireland; and Tel Aviv, Israel.

Our research and development expense was \$87.1 million, \$76.7 million and \$57.7 million in 2019, 2018 and 2017, respectively.

Backlog

We define backlog as contractually committed orders to be invoiced under our existing agreements that are not included in the deferred revenue on our consolidated balance sheets. As of December 31, 2019 and 2018, we had backlog of \$3.6 million and \$3.3 million, respectively. We expect substantially all of the backlog at December 31, 2019 to be invoiced within the following twelve months.

Competition

The market for cybersecurity solutions is fragmented, intensely competitive and constantly evolving. We compete with a range of established and emerging cybersecurity software and services vendors, as well as homegrown solutions. With the introduction of new technologies and market entrants, we expect the competitive environment to remain intense going forward. Our competitors include: vulnerability management and assessment vendors, including Qualys and Rapid7; diversified security software and services vendors, including IBM; endpoint security vendors with nascent vulnerability assessment capabilities, including Tanium and CrowdStrike; and providers of point solutions that compete with some of the features present in our solutions. We also compete against internally-developed efforts that often use open source solutions.

We believe that the principal competitive factors affecting the market for cybersecurity solutions include product functionality, breadth and depth of offerings, flexibility of delivery models, ease of deployment and use, integration capabilities such as open APIs and scalability, uptime and performance. We believe that our suite of solutions generally competes favorably with respect to these factors and may serve as a complement to the solutions offered by our competitors in some cases. Some of our more established actual and potential competitors have greater name recognition, longer operating histories, more established customer relationships, larger marketing budgets and

significantly greater resources than we do. In addition, as our market grows and rapidly changes, we expect it will continue to attract new competitors, including companies that are larger and more established than us and smaller emerging companies, which could introduce new products and services.

Intellectual Property

Our success depends in part upon our ability to protect our core technology and intellectual property. We rely on a combination of trade secrets, copyrights, patents and trademarks, as well as contractual protections, to establish and protect our intellectual property rights and protect our proprietary technology.

As of December 31, 2019, we had 16 issued patents and six patent applications pending in the United States. Our issued patents expire between 2027 and 2034 and cover our passive network scanning, monitoring and analysis technologies and additional features of our enterprise platform. As of December 31, 2019, we had 17 registered trademarks and two trademark applications pending in the United States. We view our copyrights, trade secrets and know-how as a significant component of our intellectual property assets.

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

We control access to and use of our proprietary software and other confidential information through the use of internal and external controls, including contractual protections with employees, contractors, customers and partners, and our software is protected by U.S. and international copyright and trade secret laws. Despite our efforts to protect our trade secrets and proprietary rights through intellectual property rights, licenses and confidentiality and invention assignment agreements, unauthorized parties may still attempt to copy, reverse engineer, misappropriate or otherwise obtain and use our software and technology. In addition, we intend to expand our international operations, and effective patent, copyright, trademark and trade secret protection may not be available or may be limited in foreign countries.

Government Regulation

Various federal, state and foreign legislative and regulatory bodies have legislation pending that could affect our business. In particular, the European Union passed the General Data Protection Regulation, or GDPR, which came into force on May 25, 2018. The GDPR includes more stringent operational requirements on entities that receive or process personal data (as compared to existing EU law), along with significant penalties for non-compliance, more robust obligations on data processors and data controllers, greater rights for data subjects (potentially requiring significant changes to both our technology and operations), and heavier documentation requirements for data protection compliance programs. In addition, the GDPR increases the scrutiny of transfers of personal data from locations in the EEA to the United States and other jurisdictions that the European Commission does not recognize as having "adequate" data protection laws, and imposes substantial fines for breaches and violations (up to the greater of €20 million or 4% of consolidated annual worldwide gross revenue).

Similarly, there are a number of federal and state level legislative proposals in the United States that could impose new obligations on us. For example, California recently enacted the California Consumer Privacy Act, or the CCPA, which went into effect on January 1, 2020 and creates new individual privacy rights for consumers and places increased privacy and security obligations on entities handling the personal data of consumers or households. The CCPA requires covered companies to provide new disclosures to California consumers, which could include our employees residing in California based on the broad definitions in the law, to provide such consumers new ways to opt out of certain sales of personal information, and to allow for a new private cause of action for data breaches. Other states are beginning to pass similar laws. In addition, some countries are considering or have passed legislation implementing more onerous data protection requirements or requiring local storage and processing of data or other requirements that could increase the cost and complexity of delivering our services.

Like other U.S.-based IT security products, our products are subject to U.S. export control laws and regulations, specifically the Export Administration Regulations, or EAR, U.S. economic and trade sanctions regulations and applicable foreign government import, export and use requirements. Certain of our products are subject to encryption controls under the EAR due to the nature of the product and its use or incorporation of encryption functionality. Under the encryption controls in the EAR, applicable products may only be exported outside of the United States with required export authorizations, such as a license, a license exception or other appropriate government authorizations. In addition to the restrictions under the EAR, U.S. export control laws and economic sanctions prohibit the export of

products and services to countries, governments, entities or persons subject to U.S. embargoes or trade sanctions.

Employees and Culture

As of December 31, 2019, we had 1,477 employees, including 476 employees located outside of the United States. None of our employees are represented by a labor union or covered by a collective bargaining agreement. We have not experienced any work stoppages, and we consider our relations with our employees to be good.

We believe in upholding a core set of values for our entire global workforce:

- **One Tenable:** We are united as one Tenable team. We win together. We are one team internally, with our customers, with our partners and in the market.
- **We Care:** About our work, about our customers, about one another and about our communities. We speak straight and we do the right thing.
- **Deliver Results:** We set high goals, take bold risks, measure honestly and deliver results that exceed expectations.
- **What We Do Matters:** The work that we do makes a difference in the world.

Financial Information and Segments

Segment and geographic information required by Part I, Item 1 of Form 10-K can be found in Note 1 and Note 12 of the Notes to our Consolidated Financial Statements included in Part II, Item 8, Financial Statements, of this Form 10-K.

Corporate Information

Tenable Network Security, Inc., our predecessor, was incorporated under the laws of the State of Delaware in 2002. Tenable Holdings, Inc. was incorporated in Delaware in October 2015, and in November 2015, Tenable Network Security, Inc. was merged into our wholly-owned indirect subsidiary and in 2017 was renamed as Tenable, Inc.

Our principal executive offices are located at 7021 Columbia Gateway Drive, Suite 500, Columbia, Maryland 21046. Our telephone number is (410) 872-0555. Our website address is www.tenable.com. The information contained on, or that can be accessed through, our website is not incorporated by reference, and you should not consider any information contained on, or that can be accessed through, our website as part of this Annual Report on Form 10-K.

"Tenable," "Nessus," "Tenable.io," "Lumin" and the Tenable logo, and other trademarks or service marks of Tenable Holdings, Inc. appearing in this Annual Report on Form 10-K are the property of Tenable Holdings, Inc. This Annual Report on Form 10-K contains additional trade names, trademarks and service marks of others, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this Annual Report on Form 10-K may appear without the ® or TM symbols.

Available Information

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statement, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Exchange Act, are available for download free of charge from our investor relations website <https://investors.tenable.com> after we file them with the Securities and Exchange Commission, or the SEC. The SEC's website <https://www.sec.gov> contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

The contents of any website referred to in this Form 10-K are not intended to be incorporated into this Annual Report on Form 10-K or in any other report or document we file with the SEC.

Item 1A. Risk Factors

Our operations and financial results are subject to significant risks and uncertainties including those described below. You should carefully consider the risks and uncertainties described below, in addition to other information contained in this Annual Report on Form 10-K, including our consolidated financial statements and related notes. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are

unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business. If any of the following risks or others not specified below materialize, our business, financial condition and results of operations could be materially and adversely affected.

Risks Related to Our Business and Industry

We have a history of losses and may not achieve or maintain profitability in the future.

We have historically incurred net losses, including net losses of \$99.0 million, \$73.5 million and \$41.0 million in 2019, 2018 and 2017, respectively. As of December 31, 2019, we had an accumulated deficit of \$565.1 million. Because the market for our offerings is highly competitive and rapidly evolving and these solutions have not yet reached widespread adoption, it is difficult for us to predict our future results of operations. While we have experienced significant revenue growth in recent periods, we are not certain whether or when we will obtain a high enough volume of sales of our offerings to sustain or increase our growth or achieve or maintain profitability in the future. We also expect our costs to increase in future periods, which could negatively affect our future operating results if our revenue does not increase at a greater rate. In particular, we expect to continue to expend substantial financial and other resources on:

- public cloud infrastructure and computing costs;
- research and development related to our offerings, including investments in our research and development team;
- sales and marketing, including a significant expansion of our sales organization, both domestically and internationally;
- continued international expansion of our business; and
- general and administrative expense, including legal and accounting expenses related to being a public company.

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

We may not be able to sustain our revenue growth rate in the future.

From 2018 to 2019, our revenue grew from \$267.4 million to \$354.6 million, representing year-over-year growth of 33%. This growth was primarily from an increase in subscription revenue. Although we have experienced rapid growth historically and currently have high customer renewal rates, we may not continue to grow as rapidly in the future due to a decline in our renewal rates, failure to attract new customers or other factors. Any success that we may experience in the future will depend in large part on our ability to, among other things:

- maintain and expand our customer base;
- increase revenue from existing customers through increased or broader use of our offerings within their organizations;
- improve the performance and capabilities of our offerings through research and development;
- continue to develop and expand our enterprise platform;
- maintain the rate at which customers purchase and renew subscriptions to our enterprise platform offerings;
- continue to successfully expand our business domestically and internationally; and
- successfully compete with other companies.

If we are unable to maintain consistent revenue or revenue growth, our stock price could be volatile, and it may be difficult to achieve and maintain profitability. You should not rely on our revenue for any prior quarterly or annual periods as any indication of our future revenue or revenue growth.

We may be unable to rapidly and efficiently adjust our cost structure in response to significant revenue declines, which could adversely affect our operating results.

We recognize substantially all of our revenue ratably over the term of our subscriptions and, to a lesser extent, perpetual licenses ratably over an expected period of benefit and, as a result, downturns in sales may not be immediately reflected in our operating results.

We recognize substantially all of our revenue ratably over the terms of our subscriptions with customers, which generally occurs over a one-year period and, for our perpetual licenses, over a five-year expected period of benefit. As a result, a substantial portion of the revenue that we report in each period will be derived from the recognition of deferred revenue relating to agreements entered into during previous periods. Consequently, a decline in new sales or renewals in any one period may not be immediately reflected in our revenue results for that period. This decline, however, will negatively affect our revenue in future periods. Accordingly, the effect of significant downturns in sales and market acceptance of our solutions and potential changes in our rate of renewals may not be fully reflected in our results of operations until future periods. This also makes it difficult for us to rapidly increase our revenue growth through additional sales in any period, as revenue from new customers generally will be recognized over the term of the applicable agreement.

We may not be able to scale our business quickly enough to meet our customers' growing needs.

As usage of our enterprise platform grows, and as customers expand in size or expand the number of IT assets or IP addresses under their subscriptions, we may need to devote additional resources to improving our technology architecture, integrating with third-party systems and maintaining infrastructure performance. In addition, we will need to appropriately scale our sales and marketing headcount, as well as grow our third-party channel partner network, to serve our growing customer base. If we are unable to scale our business appropriately, it could reduce the attractiveness of our solutions to customers, resulting in decreased sales to new customers, lower renewal rates by existing customers or the issuance of service credits or requested refunds, each of which could hurt our revenue growth and our reputation. Even if we are able to upgrade our systems and expand our personnel, any such expansion will be expensive and complex, requiring management time and attention. We could also face inefficiencies or operational failures as a result of our efforts to scale our infrastructure. Moreover, there are inherent risks associated with upgrading, improving and expanding our information technology systems. We cannot be sure that the expansion and improvements to our infrastructure and systems will be fully or effectively implemented on a timely basis, if at all. These efforts may reduce revenue and our margins and adversely impact our financial results.

If our enterprise platform offerings do not interoperate with our customers' network and security infrastructure or with third-party products, websites or services, our results of operations may be harmed.

Our enterprise platform offerings, Tenable.io and Tenable.sc, must interoperate with our customers' existing network and security infrastructure. These complex systems are developed, delivered and maintained by the customer and a myriad of vendors and service providers. As a result, the components of our customers' infrastructure have different specifications, rapidly evolve, utilize multiple protocol standards, include multiple versions and generations of products and may be highly customized. We must be able to interoperate and provide our security offerings to customers with highly complex and customized networks, which requires careful planning and execution between our customers, our customer support teams and our channel partners. Further, when new or updated elements of our customers' infrastructure or new industry standards or protocols are introduced, we may have to update or enhance our cloud platform and our other solutions to allow us to continue to provide service to customers. Our competitors or other vendors may refuse to work with us to allow their products to interoperate with our solutions, which could make it difficult for our cloud platform to function properly in customer networks that include these third-party products.

We may not deliver or maintain interoperability quickly or cost-effectively, or at all. These efforts require capital investment and engineering resources. If we fail to maintain compatibility of our cloud platform and our other solutions with our customers' network and security infrastructures, our customers may not be able to fully utilize our solutions, and we may, among other consequences, lose or fail to increase our market share and experience reduced demand for our services, which would materially harm our business, operating results and financial condition.

If our solutions fail to detect vulnerabilities or incorrectly detect vulnerabilities, or if they contain undetected errors or defects, our brand and reputation could be harmed.

If our solutions fail to detect vulnerabilities in our customers' cybersecurity infrastructure, or if our solutions fail to identify new and increasingly complex methods of cyberattacks, our business and reputation may suffer. There is no guarantee that our solutions will detect all vulnerabilities, especially in light of the rapidly changing security landscape to which we must respond. Additionally, our solutions may falsely detect vulnerabilities or threats that do not actually

exist. For example, our solutions rely on information provided by an active community of users who contribute new exploits, attacks and vulnerabilities. If the information from these third parties is inaccurate, the potential for false indications of security vulnerabilities increases. These false positives, while typical in the industry, may impair the perceived reliability of our offerings and may therefore adversely impact market acceptance of our products and could result in negative publicity, loss of customers and sales and increased costs to remedy any problem.

Our solutions may also contain undetected errors or defects when first introduced or as new versions are released. We have experienced these errors or defects in the past in connection with new solutions and product upgrades and we expect that these errors or defects will be found from time to time in the future in new or enhanced solutions after commercial release. Defects may cause our solutions to be vulnerable to attacks, cause them to fail to detect vulnerabilities, or temporarily interrupt customers' networking traffic or operational technology environments. Any errors, defects, disruptions in service or other performance problems with our solutions may damage our customers' business and could hurt our reputation. If our solutions fail to detect vulnerabilities for any reason, we may incur significant costs, the attention of our key personnel could be diverted, our customers may delay or withhold payment to us or elect not to renew or other significant customer relations problems may arise. We may also be subject to liability claims for damages related to errors or defects in our solutions. A material liability claim or other occurrence that harms our reputation or decreases market acceptance of our solutions may harm our business and operating results.

An actual or perceived security breach or theft of the sensitive data of one of our customers, regardless of whether the breach is attributable to the failure of our solutions, could adversely affect the market's perception of our brand and our offerings and subject us to legal claims.

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

Our revenue and results of operations have historically varied from period to period, and we expect that they will continue to do so as a result of a number of factors, many of which are outside of our control, including:

- the level of demand for our enterprise platform;
- the introduction of new products and product enhancements by existing competitors or new entrants into our market, and changes in pricing for solutions offered by us or our competitors;
- the rate of renewal of subscriptions, and extent of expansion of assets under such subscriptions, with existing customers;
- the mix of customers licensing our products on a subscription basis as compared to a perpetual license;
- large customers failing to renew their subscriptions;
- the size, timing and terms of our subscription agreements with new customers;
- our ability to interoperate our solutions with our customers' network and security infrastructure;
- the timing and growth of our business, in particular through our hiring of new employees and international expansion;
- network outages, security breaches, technical difficulties or interruptions with our solutions;
- changes in the growth rate of the markets in which we compete;
- the length of the license term, amount prepaid and other material terms of subscriptions to our solutions sold during a period;
- customers delaying purchasing decisions in anticipation of new developments or enhancements by us or our competitors or otherwise;
- changes in customers' budgets;
- seasonal variations related to sales and marketing and other activities, such as expenses related to our customers;
- our ability to increase, retain and incentivize the channel partners that market and sell our solutions;
- our ability to integrate our solutions with our ecosystem partners' technology;
- our ability to integrate any future acquisitions of businesses;
- our brand and reputation;
- the timing of our adoption of new or revised accounting pronouncements applicable to public companies and the impact on our results of operations;

- our ability to control costs, including our operating expenses, such as third-party cloud infrastructure costs and facilities costs;
- our ability to hire, train and maintain our direct sales force;
- unforeseen litigation and intellectual property infringement;
- fluctuations in our effective tax rate;
- general economic and political conditions, both domestically and internationally, as well as economic conditions specifically affecting industries in which our customers operate; and
- other events or factors, including those resulting from pandemics, war, incidents of terrorism or responses to these events.

Any one of these or other factors discussed elsewhere in this Annual Report on Form 10-K, or the cumulative effect of some of these factors, may result in fluctuations in our revenue and operating results, meaning that quarter-to-quarter comparisons of our revenue, results of operations and cash flows may not necessarily be indicative of our future performance and may cause us to miss our guidance and analyst expectations and may cause our stock price to decline.

In addition, we have historically experienced seasonality in entering into agreements with customers. We typically enter into a significantly higher percentage of agreements with new customers, as well as renewal agreements with existing customers, in the third and fourth quarters. The increase in customer agreements in the third quarter is primarily attributable to U.S. government and related agencies, and the increase in the fourth quarter is primarily attributable to large enterprise account buying patterns typical in the software industry. We expect that seasonality will continue to affect our operating results in the future and may reduce our ability to predict cash flow and optimize the timing of our operating expenses.

We face intense competition.

The market for cybersecurity solutions is fragmented, intensely competitive and constantly evolving. We compete with a range of established and emerging cybersecurity software and services vendors, as well as homegrown solutions. With the introduction of new technologies and market entrants, we expect the competitive environment to remain intense going forward. Our competitors include: vulnerability management and assessment vendors, including Qualys and Rapid7; diversified security software and services vendors, including IBM; endpoint security vendors with nascent vulnerability assessment capabilities, including Tanium and CrowdStrike; and providers of point solutions that compete with some of the features present in our solutions. We also compete against internally-developed efforts that often use open source solutions.

Some of our actual and potential competitors have significant advantages over us, such as longer operating histories, significantly greater financial, technical, marketing or other resources, stronger brand and business user recognition, larger intellectual property portfolios, government certifications and broader global distribution and presence. In addition, our industry is evolving rapidly and is becoming increasingly competitive. Companies that are larger and more established than us are focusing on cybersecurity and could directly compete with us. For example, in 2019 Microsoft introduced a vulnerability management offering as part of their existing endpoint security platform. Smaller companies could also launch new products and services that we do not offer and that could gain market acceptance quickly.

Our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements or new or evolving attacks by, or indicators of compromise that identify, cyber bad actors. With the introduction of new technologies, the evolution of our offerings and new market entrants, we expect competition to intensify in the future. In addition, some of our larger competitors have substantially broader product offerings and can bundle competing products and services with other software offerings. As a result, customers may choose a bundled product offering from our competitors, even if individual products have more limited functionality than our solutions. These competitors may also offer their products at a lower price as part of this larger sale, which could increase pricing pressure on our offerings and cause the average sales price for our offerings to decline. These larger competitors are also often in a better position to withstand any significant reduction in capital spending, and will therefore not be as susceptible to economic downturns. One component of our enterprise platform involves assessing cyber exposure in a public cloud environment. We are dependent upon the providers to allow our solutions to access their cloud offerings. If one or more cloud providers elected to offer exclusively their own

cloud security product or otherwise eliminate the ability of our solutions to access their cloud on behalf of our customers, our business and financial results could be harmed.

Furthermore, our current and potential competitors may establish cooperative relationships among themselves or with third parties that may further enhance their resources and products and services offerings in the markets we address. In addition, current or potential competitors may be acquired by third parties with greater available resources. As a result of such relationships and acquisitions, our current or potential competitors might be able to adapt more quickly to new technologies and customer needs, devote greater resources to the promotion or sale of their products and services, initiate or withstand substantial price competition, take advantage of other opportunities more readily or develop and expand their product and service offerings more quickly than we do. For all of these reasons, we may not be able to compete successfully against our current or future competitors.

If we do not continue to innovate and offer solutions that address the dynamic cybersecurity landscape, we may not remain competitive.

The cybersecurity market is characterized by very rapid technological advances, changes in customer requirements, frequent new product introductions and enhancements and evolving industry standards. Our success also depends on continued innovation to provide features that make our solutions responsive to the cybersecurity landscape. While we continue to invest significant resources in research and development in order to ensure that our solutions continue to address the cyber security risks that our customers face, the introduction of solutions and services embodying new technologies could render our existing solutions or services obsolete or less attractive to customers. In addition, developing new solutions and product enhancements is expensive and time-consuming, we may face delays or uncertainty in our release timing, and there is no assurance that such activities will result in significant cost savings, revenue or other expected benefits. If we spend significant time and effort on research and development and are unable to generate an adequate return on our investment, our business and results of operations may be materially and adversely affected. Further, we may not be able to successfully anticipate or adapt to changing technology or customer requirements or the dynamic threat landscape on a timely basis, or at all, which would impair our ability to execute on our business strategy.

Our business and results of operations depend substantially on our customers renewing their subscriptions with us and expanding the number of IT assets or IP addresses under their subscriptions. Any decline in our customer renewals, terminations or failure to convince our customers to expand their use of subscription offerings would harm our business, results of operations, and financial condition.

Our subscription offerings are term-based and a majority of our subscription contracts are for one year in duration. In order for us to maintain or improve our results of operations, it is important that a high percentage of our customers renew their subscriptions with us when the existing subscription term expires, and renew on the same or more favorable terms. Our customers have no obligation to renew their subscriptions, and we may not be able to accurately predict customer renewal rates. In addition, the growth of our business depends in part on our customers expanding their use of subscription offerings and related services. Historically, some of our customers have elected not to renew their subscriptions with us for a variety of reasons, including as a result of changes in their strategic IT priorities, budgets, costs and, in some instances, due to competing solutions. Our retention rate may also decline or fluctuate as a result of a number of other factors, including our customers' satisfaction or dissatisfaction with our software, the increase in the contract value of subscription and support contracts from new customers, the effectiveness of our customer support services, our pricing, the prices of competing products or services, mergers and acquisitions affecting our customer base, global economic conditions, and the other risk factors described in this Annual Report on Form 10-K. Additionally, many of our customers, including certain top customers, have the right to terminate their agreements with us for convenience and for other reasons. We cannot assure you that customers will maintain their agreements with us, renew subscriptions or increase their usage of our software. If our customers do not maintain or renew their subscriptions or renew on less favorable terms, or if we are unable to expand our customers' use of our software, our business, results of operations, and financial condition may be harmed.

Our brand, reputation and ability to attract, retain and serve our customers are dependent in part upon the reliable performance of our solutions and network infrastructure.

We have experienced, and may in the future experience, disruptions, outages and other performance problems due to a variety of factors, including infrastructure changes, human or software errors, capacity constraints and fraud or cybersecurity attacks. In some instances, we may not be able to identify the cause or causes of these performance problems within an acceptable period of time.

Prolonged delays or unforeseen difficulties in connection with adding capacity or upgrading our network architecture when required may cause our service quality to suffer. Problems with the reliability or security of our systems could harm our reputation. Damage to our reputation and the cost of remedying these problems could negatively affect our business, financial condition, and operating results.

Any disruptions or other performance problems with our solutions could harm our reputation and business and may damage our customers' businesses, including by interrupting their networking traffic or operational technology environments. Interruptions in our service delivery might reduce our revenue, cause us to issue credits to customers, subject us to potential liability and cause customers to not renew their purchases of our solutions.

We must maintain and enhance our brand.

We believe that developing and maintaining widespread awareness of our brand in a cost-effective manner is critical to achieving widespread acceptance of our enterprise platform and attracting new customers. Brand promotion activities may not generate customer awareness or increase revenue and, even if they do, any increase in revenue may not offset the expenses we incur in building our brand. If we fail to successfully promote and maintain our brand, or incur substantial expenses, we may fail to attract or retain customers necessary to realize a sufficient return on our brand-building efforts, or to achieve the widespread brand awareness that is critical for broad customer adoption of our solutions.

We rely on third parties to maintain and operate certain elements of our network infrastructure.

We utilize data centers located in North America, Europe and Asia to operate and maintain certain elements of our own network infrastructure. Some elements of this complex system are operated by third parties that we do not control and that could require significant time to replace. We expect this dependence on third parties to continue. For example, Tenable.io is hosted on Amazon Web Services, or AWS, which provides us with computing and storage capacity. Interruptions in our systems or the third-party systems on which we rely, particularly AWS, whether due to system failures, computer viruses, physical or electronic break-ins or other factors, could affect the security or availability of our solutions, network infrastructure and website.

Our existing data center facilities and third-party hosting providers have no obligations to renew their agreements with us on commercially reasonable terms or at all, and certain of the agreements governing these relationships may be terminated by either party with notice or access to hosting services may be restricted by the provider at any time, with no or limited notice. For example, our agreement with AWS allows AWS to terminate the agreement with two years' written notice and allows AWS, under certain circumstances, to temporarily restrict access to hosting services provided by AWS without prior notice. Although we expect that we could receive similar services from other third parties, if any of our arrangements with third parties, including AWS, are terminated, we could experience interruptions on our platform and in our ability to make our platform available to customers, as well as downtime, delays and additional expenses in arranging alternative cloud infrastructure services.

It is possible that our customers and potential customers would hold us accountable for any breach of security affecting third parties' infrastructure. We may incur significant liability from those customers and from third parties with respect to any such breach. Because our agreement with AWS limits their liability for damages, we may not be able to recover a material portion of our liabilities to our customers and third parties from AWS in the event of any breach affecting AWS systems.

If we continue to grow, we may not be able to manage our growth effectively.

We have recently experienced a period of rapid growth in our headcount and operations. In particular, we grew from 984 employees as of December 31, 2017 to 1,252 employees as of December 31, 2018 and to 1,477 employees as of December 31, 2019. We have also significantly increased the size of our customer base over the last several years. We anticipate that we will continue to significantly expand our operations and headcount in the near term. Our growth has placed, and future growth will place, a significant strain on our management, administrative, operational and financial infrastructure. Our success will depend in part on our ability to manage this growth effectively. To manage the expected growth of our operations and personnel, we will need to continue to improve our operational, financial and management controls and our reporting systems and procedures. Failure to effectively manage our growth could result in difficulty or delays in deploying our solutions and services to customers, declines in quality or customer satisfaction, increases in costs, difficulties in introducing new features or other operational difficulties. We could also face inefficiencies or service disruptions as a result of our efforts to maintain and scale our domestic and international

facilities, and additional facilities may not be available to us on commercially reasonable terms, or at all. Any of these difficulties could adversely impact our business performance and results of operations.

Our rapid growth also makes it difficult to evaluate our future prospects. Our ability to forecast our future operating results is subject to a number of uncertainties, including our ability to plan for and model future growth. If our assumptions regarding these uncertainties, which we use to plan our business, are incorrect or change in reaction to changes in our markets, or if we do not address these risks successfully, our operating and financial results could differ materially from our expectations, our business could suffer and the trading price of our stock may decline.

Organizations may be reluctant to purchase our enterprise platform offerings that are cloud-based due to the actual or perceived vulnerability of cloud solutions.

Some organizations, including those in the defense industry and highly regulated industries such as healthcare and financial services, have historically been reluctant to use cloud-based solutions for cybersecurity because they have concerns regarding the risks associated with the reliability or security of the technology delivery model associated with these solutions. If we or other software companies with cloud-based offerings experience security incidents, breaches of customer data, disruptions in service delivery or other problems, the market for cloud-based solutions as a whole may be negatively impacted, which in turn would negatively impact our revenue and our growth prospects.

Our sales cycle is long and unpredictable.

The timing of sales of our offerings is difficult to forecast because of the length and unpredictability of our sales cycle, particularly with large enterprises and with respect to certain of our solutions. We sell our solutions primarily to IT departments that are managing a growing set of user and compliance demands, which has increased the complexity of customer requirements to be met and confirmed during the sales cycle and prolonged our sales cycle. Our average sales cycle with an enterprise customer is approximately four months, and to the extent we continue to enter into larger deals, our average sales cycle is likely to increase. Further, the length of time that potential customers devote to their testing and evaluation, contract negotiation and budgeting processes varies significantly, depending on the size of the organization and nature of the product or service under consideration. In addition, we might devote substantial time and effort to a particular unsuccessful sales effort, and as a result, we could lose other sales opportunities or incur expenses that are not offset by an increase in revenue, which could harm our business.

Regulatory, legislative or self-regulatory standard developments regarding privacy and data security matters could adversely affect our ability to conduct our business.

We, along with a significant number of our customers, are subject to laws, rules, regulations, and industry standards related to data privacy and cyber security, and restrictions or technological requirements regarding the collection, use, storage, protection, retention or transfer of data. In addition to current privacy and data security regulations currently in force in the jurisdictions where we operate, the General Data Protection Regulation, or GDPR came into force in May 2018. The GDPR contains numerous requirements and changes from prior European Union, or EU, law, including more robust obligations on data processors and data controllers, greater rights for data subjects, and heavier documentation requirements for data protection compliance programs. Specifically, the GDPR introduced numerous privacy-related changes for companies operating in the EU, including greater control over personal data by data subjects, such as the "right to be forgotten", increased data portability for EU consumers, data breach notification requirements, and increased fines. In particular, under the GDPR, fines of up to €20 million or up to 4% of the annual global revenue of the noncompliant company, whichever is greater, could be imposed for violations of certain of the GDPR's requirements. The GDPR requirements apply not only to third-party transactions, but also to transfers of information between us and our subsidiaries, including employee information. We have an internal data privacy function that oversees and supervises our compliance with European data protection regulations.

In the United States and globally, governments and agencies have adopted, and could in the future adopt, modify, apply or enforce laws, policies, regulations, and standards covering data subject privacy, data security, technologies such as cookies that are used to collect, store and/or process data, marketing online, the use of data to inform marketing, the taxation of products and services, unfair and deceptive practices and the collection, including the collection of information, use, processing, transfer, storage and/or disclosure of data associated with unique individual internet users. We may be subject directly or via contract to such laws, policies, regulations, and standards. New regulation or legislative actions regarding data privacy and security, together with applicable industry standards, may increase the costs of doing business and could have a material adverse impact on our operations and cash flows.

While we have taken steps to mitigate the impact on us, such as implementing standard contractual clauses as appropriate and self-certifying under the EU-US Privacy Shield, the efficacy and longevity of these mechanisms remains uncertain. Potential or actual legal proceeding could lead to one or both of these mechanisms being declared invalid. Further, local data protection authorities general may have different interpretations of the GDPR, leading to potential inconsistencies amongst various EU states.

Similarly, there are a number of federal and state level legislative proposals in the United States that could impose new obligations on us. For example, California recently enacted the California Consumer Privacy Act, or the CCPA, which went into effect on January 1, 2020 and creates new individual privacy rights for consumers and places increased privacy and security obligations on entities handling the personal data of consumers or households. The CCPA requires covered companies to provide new disclosures to California consumers, which could include our employees residing in California based on the broad definitions in the law, to provide such consumers new ways to opt out of certain sales of personal information, and to allow for new causes of action for data breaches. In addition, some countries are considering or have passed legislation implementing more onerous data protection requirements or requiring local storage and processing of data or other requirements that could increase the cost and complexity of delivering our services.

If we are investigated by an applicable data protection authority or are determined to have not complied with applicable laws, we may face fines and other penalties. Any such investigation or charges by applicable data protection authorities could have a negative effect on our existing business and on our ability to attract and retain new customers. Existing and proposed laws and regulations can be costly to comply with, could expose us to significant penalties for non-compliance, can delay or impede the development or adoption of our products and services, reduce the overall demand for our services, result in negative publicity, increase our operating costs, require significant management time and attention and subject us to claims or other remedies, including fines or demands that we modify or cease existing business practices.

We rely on our third-party channel partner network of distributors and resellers to generate a substantial amount of our revenue.

Our success is dependent in part upon establishing and maintaining relationships with a variety of channel partners that we utilize to extend our geographic reach and market penetration. We use a two-tiered, indirect fulfillment model whereby we sell our products and services to our distributors, which in turn sell to our resellers, which then sell to our end users, which we call customers. We anticipate that we will continue to rely on this two-tiered sales model in order to help facilitate sales of our offerings as part of larger purchases in the United States and to grow our business internationally. In 2019, 2018 and 2017, we derived 90%, 88% and 83%, respectively, of our revenue from subscriptions and perpetual licenses sold through channel partners, and the percentage of revenue derived from channel partners may continue to increase in future periods. Ingram Micro, Inc., a distributor, accounted for 43%, 46% and 45% of our revenue in 2019, 2018 and 2017, respectively, and 40% of our accounts receivable as of December 31, 2019 and 46% as of December 31, 2018. Our agreements with our channel partners, including our agreement with Ingram Micro, are non-exclusive and do not prohibit them from working with our competitors or offering competing solutions, and some of our channel partners may have more established relationships with our competitors. Similarly, our channel partners have no obligations to renew their agreements with us on commercially reasonable terms or at all, and certain of the agreements governing these relationships may be terminated by either party at any time, with no or limited notice. For example, our agreement with Ingram Micro allows Ingram Micro to terminate the agreement in their discretion upon 30 days' written notice to us. If our channel partners choose to place greater emphasis on products of their own or those offered by our competitors or a result of an acquisition, competitive factors or other reasons do not continue to market and sell our solutions in an effective manner or at all, our ability to grow our business and sell our solutions, particularly in key international markets, may be adversely affected. In addition, our failure to recruit additional channel partners, or any reduction or delay in their sales of our solutions and professional services or conflicts between channel sales and our direct sales and marketing activities may harm our results of operations. Finally, even if we are successful, our relationships with channel partners may not result in greater customer usage of our solutions and professional services or increased revenue.

A portion of our revenue is generated from subscriptions and perpetual licenses sold to domestic governmental entities, foreign governmental entities and other heavily regulated organizations, which are subject to a number of challenges and risks.

A portion of our revenue is generated from subscriptions and perpetual licenses sold to governmental entities in the United States. Additionally, many of our current and prospective customers, such as those in the financial services,

energy, insurance and healthcare industries, are highly regulated and may be required to comply with more stringent regulations in connection with subscribing to and implementing our enterprise platform. Selling licenses to these entities can be highly competitive, expensive and time-consuming, often requiring significant upfront time and expense without any assurance that we will successfully complete a sale. Governmental demand and payment for our enterprise platform may also be impacted by public sector budgetary cycles and funding authorizations, with funding reductions or delays adversely affecting public sector demand for our enterprise platform. In addition, governmental entities have the authority to terminate contracts at any time for the convenience of the government, which creates risk regarding revenue anticipated under our existing government contracts.

Further, governmental and highly regulated entities often require contract terms that differ from our standard customer arrangements, including terms that can lead to those customers obtaining broader rights in our solutions than would be expected under a standard commercial contract and terms that can allow for early termination. The U.S. government will be able to terminate any of its contracts with us either for its convenience or if we default by failing to perform in accordance with the contract schedule and terms. Termination for convenience provisions would generally enable us to recover only our costs incurred or committed, settlement expenses, and profit on the work completed prior to termination. Termination for default provisions do not permit these recoveries and would make us liable for excess costs incurred by the U.S. government in procuring undelivered items from another source. Contracts with governmental and highly regulated entities may also include preferential pricing terms. In the United States, federal government agencies may promulgate regulations, and the President may issue executive orders, requiring federal contractors to adhere to different or additional requirements after a contract is signed. If we do not meet applicable requirements of law or contract, we could be subject to significant liability from our customers or regulators. Even if we do meet these requirements, the additional costs associated with providing our enterprise platform to government and highly regulated customers could harm our operating results. Moreover, changes in the underlying statutory and regulatory conditions that affect these types of customers could harm our ability to efficiently provide them access to our enterprise platform and to grow or maintain our customer base. In addition, engaging in sales activities to foreign governments introduces additional compliance risks, including risks specific to anti-bribery regulations, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U.K. Bribery Act 2010 and other similar statutory requirements prohibiting bribery and corruption in the jurisdictions in which we operate. Further, in some jurisdictions we may be required to obtain government certifications, which may be costly to maintain and, if we lost such certifications in the future or if such certification requirements changed, would restrict our ability to sell to government entities until we have attained such certifications.

Some of our revenue is derived from contracts with U.S. government entities, as well as subcontracts with higher-tier contractors. As a result, we are subject to federal contracting regulations, including the Federal Acquisition Regulation, or the FAR. Under the FAR, certain types of contracts require pricing that is based on estimated direct and indirect costs, which are subject to change.

In connection with our U.S. government contracts, we may be subject to government audits and review of our policies, procedures, and internal controls for compliance with contract terms, procurement regulations, and applicable laws. In certain circumstances, if we do not comply with the terms of a contract or with regulations or statutes, we could be subject to contract termination or downward contract price adjustments or refund obligations, could be assessed civil or criminal penalties, or could be debarred or suspended from obtaining future government contracts for a specified period of time. Any such termination, adjustment, sanction, debarment or suspension could have an adverse effect on our business.

In the course of providing our solutions and professional services to governmental entities, our employees and those of our channel partners may be exposed to sensitive government information. Any failure by us or our channel partners to safeguard and maintain the confidentiality of such information could subject us to liability and reputational harm, which could materially and adversely affect our results of operations and financial performance.

Our pricing model subjects us to various challenges that could make it difficult for us to derive expected value from our customers and we may need to reduce our prices or change our pricing model to remain competitive.

Subscriptions and perpetual licenses to our enterprise platform are generally priced based on the number of IP addresses that can be monitored, the total IT assets that can be monitored. We expect that we may need to change our pricing from time to time. As competitors introduce new products that compete with ours or reduce their prices, we may be unable to attract new customers or retain existing customers based on our historical pricing. We also must determine the appropriate price to enable us to compete effectively internationally. Moreover, mid- to large-size

enterprises may demand substantial price discounts as part of the negotiation of sales contracts and, as the amount of IT assets or IP addresses within our customers' organization grows, we may face additional pressure from our customers regarding our pricing. As a result, we may be required or choose to reduce our prices or change our pricing model, which could adversely affect our business, revenue, operating margins and financial condition.

Further, our subscription agreements and perpetual licenses generally provide that we can audit our customers' use of our offerings to ensure compliance with the terms of such agreement or license and monitor an increase in IT assets and IP addresses being monitored. However, a customer may resist or refuse to allow us to audit their usage, in which case we may have to pursue legal recourse to enforce our rights under the agreement or license, which would require us to spend money, distract management and potentially adversely affect our relationship with our customers and users.

If our enterprise platform offerings do not achieve sufficient market acceptance, our results of operations and competitive position will suffer.

We spend substantial amounts of time and money to research and develop and enhance our enterprise platform offerings to meet our customers' rapidly evolving demands. In addition, we invest in efforts to continue to add capabilities to our existing products and enable the continued detection of new network vulnerabilities. We typically incur expenses and expend resources upfront to market, promote and sell our new and enhanced offerings. Therefore, when we develop and introduce new or enhanced offerings, they must achieve high levels of market acceptance in order to justify the amount of our investment in developing and bringing them to market. For example, if Tenable Lumin does not garner widespread market adoption and implementation, our operating results and competitive position could suffer.

Further, we may make enhancements to our offerings that our customers do not like, find useful or agree with. We may also discontinue certain features, begin to charge for certain features that are currently free or increase fees for any of our features or usage of our offerings.

Our new offerings or enhancements and changes to our existing offerings could fail to attain sufficient market acceptance for many reasons, including:

- failure to predict market demand accurately in terms of functionality and to supply offerings that meets this demand in a timely fashion;
- defects, errors or failures;
- negative publicity about their performance or effectiveness;
- delays in releasing our new offerings or enhancements to our existing offerings to the market;
- introduction or anticipated introduction of competing products by our competitors;
- poor business conditions for our customers, causing them to delay IT purchases; and
- reluctance of customers to purchase cloud-based offerings.

If our new or enhanced offerings do not achieve adequate acceptance in the market, our competitive position will be impaired, and our revenue will be diminished. The adverse effect on our operating results may be particularly acute because of the significant research, development, marketing, sales and other expenses we will have incurred in connection with the new or enhanced offerings.

Our strategy of offering and deploying our solutions in the cloud, on-premises environments or using a hybrid approach causes us to incur increased expenses and may pose challenges to our business.

We offer and sell our enterprise platform for use in the cloud, on-premises environments or using a hybrid approach using the customer's own infrastructure. Our cloud offering enables our customers to eliminate the burden of provisioning and maintaining infrastructure and to scale their usage of our solutions quickly, while our on-premises offering allows for the customer's complete control over data security and software infrastructure. Historically, our solutions were developed in the context of the on-premises offering, and we have less operating experience offering and selling subscriptions to our solutions via our cloud offering. Although a substantial majority of our revenue has historically been generated from customers using our solutions on an on-premises basis, our customers are increasingly adopting our cloud offering. We expect that our customers will continue to move to our cloud offering and that it will become more central to our distribution model. We expect our gross profit to increase in absolute dollars and our gross margin to decrease to the extent that revenue from our cloud-based subscriptions increases as a percentage

of revenue, although our gross margin could fluctuate from period to period. To support both on-premises environments and cloud instances of our product, our support team must be trained on and learn multiple environments in which our solution is deployed, which is more expensive than supporting only a cloud offering. Moreover, we must engineer our software for an on-premises environment, cloud offering and hybrid installation, which we expect will cause us additional research and development expense that may impact our operating results. As more of our customers transition to the cloud, we may be subject to additional competitive pressures, which may harm our business. We are directing a significant portion of our financial and operating resources to implement a robust and secure cloud offering for our customers, but even if we continue to make these investments, we may be unsuccessful in growing or implementing our cloud offering in a way that competes successfully against our current and future competitors and our business, results of operations and financial condition could be harmed.

Our customers' increased usage of our cloud-based offerings requires us to continually improve our computer network and infrastructure to avoid service interruptions or slower system performance.

As usage of our cloud-based offerings grows and as customers use them for more complicated applications, increased assets and with increased data requirements, we will need to devote additional resources to improving our platform architecture and our infrastructure in order to maintain the performance of our cloud offering. Any failure or delays in our computer systems could cause service interruptions or slower system performance. If sustained or repeated, these performance issues could reduce the attractiveness of our enterprise platform to customers. These performance issues could result in lost customer opportunities and lower renewal rates, any of which could hurt our revenue growth, customer loyalty and reputation.

A component of our growth strategy is dependent on our continued international expansion, which adds complexity to our operations.

We market and sell our solutions and professional services throughout the world and have personnel in many parts of the world. International operations generated 37% and 33% of our revenue in 2019 and 2018, respectively. Our growth strategy is dependent, in part, on our continued international expansion. We expect to conduct a significant amount of our business with organizations that are located outside the United States, particularly in Europe and Asia. We cannot assure that our expansion efforts into international markets will be successful in creating further demand for our solutions and professional services outside of the United States or in effectively selling our solutions and professional services in the international markets that we enter. Our current international operations and future initiatives will involve a variety of risks, including:

- increased management, infrastructure and legal costs associated with having international operations;
- reliance on channel partners;
- trade and foreign exchange restrictions, including potential changes in trade relations arising from policy initiatives implemented by the current U.S. administration, which has been critical of existing and proposed trade agreements;
- economic or political instability in foreign markets, including instability related to the United Kingdom's recent exit from the European Union and its ongoing legal, political and economic relationship with the European Union;
- greater difficulty in enforcing contracts, accounts receivable collection and longer collection periods;
- changes in regulatory requirements, including, but not limited to data privacy, data protection and data security regulations;
- difficulties and costs of staffing, managing and potentially reorganizing foreign operations;
- the uncertainty and limitation of protection for intellectual property rights in some countries;
- costs of compliance with foreign laws and regulations and the risks and costs of non-compliance with such laws and regulations;
- differing labor regulations in jurisdictions where labor laws are generally more advantageous to employees as compared to the U.S., including deemed hourly wage and overtime regulations in these locations;
- costs of compliance with U.S. laws and regulations for foreign operations, including the FCPA, import and export control laws, tariffs, trade barriers, economic sanctions and other regulatory or contractual limitations on our ability to sell or provide our solutions in certain foreign markets, and the risks and costs of non-compliance;
- requirements to comply with foreign privacy, data protection and information security laws and regulations and the risks and costs of noncompliance;

- heightened risks of unfair or corrupt business practices in certain geographies and of improper or fraudulent sales arrangements that may impact financial results and result in restatements of, and irregularities in, financial statements;
- the potential for political unrest, pandemics, acts of terrorism, hostilities or war;
- management communication and integration problems resulting from cultural differences and geographic dispersion;
- costs associated with language localization of our solutions; and
- costs of compliance with multiple and possibly overlapping tax structures.

Our business, including the sales of our solutions and professional services by us and our channel partners, may be subject to foreign governmental regulations, which vary substantially from country to country and change from time to time. Our failure, or the failure by our channel partners, to comply with these regulations could adversely affect our business. Further, in many foreign countries it is common for others to engage in business practices that are prohibited by our internal policies and procedures or U.S. regulations applicable to us. Although we have implemented policies and procedures designed to comply with these laws and policies, there can be no assurance that our employees, contractors, channel partners and agents have complied, or will comply, with these laws and policies. Violations of laws or key control policies by our employees, contractors, channel partners or agents could result in delays in revenue recognition, financial reporting misstatements, fines, penalties or the prohibition of the importation or exportation of our solutions and could have a material adverse effect on our business and results of operations. If we are unable to successfully manage the challenges of international expansion and operations, our business and operating results could be adversely affected.

We rely on the performance of highly skilled personnel, including senior management and our engineering, professional services, sales and technology professionals.

We believe our success has depended, and continues to depend, on the efforts and talents of our senior management team and our highly skilled team members, including our sales personnel, professional services personnel and software engineers. We do not maintain key man insurance on any of our executive officers or key employees. From time to time, there may be changes in our senior management team resulting from the termination or departure of our executive officers and key employees. Our senior management and key employees are employed on an at-will basis, which means that they could terminate their employment with us at any time. The loss of any of our senior management or key employees could adversely affect our ability to build on the efforts they have undertaken and to execute our business plan, and we may not be able to find adequate replacements. We cannot ensure that we will be able to retain the services of any members of our senior management or other key employees.

Our ability to successfully pursue our growth strategy also depends on our ability to attract, motivate and retain our personnel. Competition for well-qualified employees in all aspects of our business, including sales personnel, professional services personnel and software engineers, is intense. Our recruiting efforts focus on elite universities and our primary recruiting competition are well-known, high-paying firms. Our continued ability to compete effectively depends on our ability to attract new employees and to retain and motivate existing employees. If we do not succeed in attracting well-qualified employees or retaining and motivating existing employees, our business would be adversely affected.

We must effectively develop and expand our sales and marketing capabilities.

Our ability to increase our customer base and achieve broader market acceptance of our Cyber Exposure solutions will depend to a significant extent on our ability to expand our sales and marketing operations. We plan to continue expanding our sales force and our third-party channel partner network of distributors and resellers both domestically and internationally; however, there is no assurance that we will be successful in attracting and retaining talented sales personnel or strategic partners or that any new sales personnel or strategic partners will be able to achieve productivity in a reasonable period of time or at all. We also plan to dedicate significant resources to sales and marketing programs, including through electronic marketing campaigns and trade event sponsorship and participation. All of these efforts will require us to invest significant financial and other resources and our business will be harmed if our efforts do not generate a correspondingly significant increase in revenue.

We must offer high-quality support.

Our customers rely on our personnel for support of our enterprise platform. High-quality support is important for the renewal of our agreements with existing customers and to our existing customers expanding the number of IP addresses or IT assets under their subscriptions. The importance of high-quality support will increase as we expand our business and pursue new customers. If we do not help our customers quickly resolve issues and provide effective ongoing support, our ability to sell new software to existing and new customers would suffer and our reputation with existing or potential customers would be harmed.

Our growth depends in part on the success of our strategic relationships with third parties.

In order to grow our business, we anticipate that we will continue to depend on relationships with strategic partners to provide broader customer coverage and solution delivery capabilities. We depend on partnerships with market leading technology companies to maintain and expand our Cyber Exposure ecosystem by integrating third party data into our platform. Identifying partners, and negotiating and documenting relationships with them, requires significant time and resources. Our agreements with our strategic partners generally are non-exclusive and do not prohibit them from working with our competitors or offering competing solutions. Our competitors may be effective in providing incentives to third parties to favor their products or services or to prevent or reduce subscriptions to our services. If our partners choose to place greater emphasis on products of their own or those offered by our competitors or do not effectively market and sell our product, our ability to grow our business and sell software and professional services may be adversely affected. In addition, acquisitions of our partners by our competitors could result in a decrease in the number of our current and potential customers, as our partners may no longer facilitate the adoption of our solutions by potential customers. We also license third-party threat data that is used in our solutions in order to deliver our offerings. In the future, this data may not be available to us on commercially reasonable terms, or at all. Any loss of the right to use any of this data could result in delays in the provisioning of our offerings until equivalent data is either developed by us, or, if available, is identified, obtained and integrated, which could harm our business.

If we are unsuccessful in establishing or maintaining our relationships with third parties, our ability to compete in the marketplace or to grow our revenue could be impaired and our operating results may suffer. Even if we are successful, we cannot assure you that these relationships will result in increased customer usage of our solutions or increased revenue.

Catastrophic events may disrupt our business.

Our corporate headquarters are located in Columbia, Maryland. The area around Washington, D.C. could be subject to terrorist attacks. Additionally, we rely on our network and third-party infrastructure and enterprise applications, internal technology systems and our website for our development, marketing, operational support, hosted services and sales activities. In the event of a major hurricane, earthquake or catastrophic event such as fire, power loss, telecommunications failure, cyberattack, war or terrorist attack that impacts our corporate headquarters, other facilities or off-premises infrastructure, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our software development, lengthy interruptions in our services, breaches of data security and loss of critical data, all of which could have an adverse effect on our future operating results.

Recent and future acquisitions could disrupt our business and adversely affect our business operations and financial results.

We have in the past acquired products, technologies and businesses from other parties, such as our recent acquisition of Indegy Ltd. in December 2019, and we may choose to expand our current business by acquiring additional businesses or technologies in the future. Acquisitions, including the Indegy acquisition, involve many risks, including the following:

- an acquisition may negatively affect our financial results because it may require us to incur charges or assume substantial debt or other liabilities, may cause adverse tax consequences or unfavorable accounting treatment, may expose us to claims and disputes by third parties, including intellectual property claims and disputes, or may not generate sufficient financial return to offset additional costs and expenses related to the acquisition;
- we may encounter difficulties or unforeseen expenditures in integrating the business, technologies, products, personnel or operations of any company that we acquire, particularly if key personnel of the acquired company decide not to work for us;

- an acquisition may disrupt our ongoing business, divert resources, increase our expenses and distract our management;
- an acquisition may result in a delay or reduction of customer purchases for both us and the company acquired due to customer uncertainty about continuity and effectiveness of service from either company;
- we may encounter difficulties in, or may be unable to, successfully sell any acquired solutions;
- an acquisition may involve the entry into geographic or business markets in which we have little or no prior experience or where competitors have stronger market positions;
- our use of cash to pay for an acquisition would limit other potential uses for our cash; and
- if we incur debt to fund such acquisition, such debt may subject us to material restrictions on our ability to conduct our business as well as financial maintenance covenants.

The occurrence of any of these risks could have a material adverse effect on our business operations and financial results. In addition, we may only be able to conduct limited due diligence on an acquired company's operations. Following an acquisition, we may be subject to unforeseen liabilities arising from an acquired company's past or present operations and these liabilities may be greater than the warranty and indemnity limitations that we negotiate. Any unforeseen liability that is greater than these warranty and indemnity limitations could have a negative impact on our financial condition.

We may require additional capital to support business growth, and this capital might not be available on acceptable terms, if at all.

We expect that our existing cash and cash equivalents will be sufficient to meet our anticipated cash needs for working capital and capital expenditures for at least the next 12 months. However, we intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including the need to develop new features or enhance our product, improve our operating infrastructure or acquire complementary businesses and technologies. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our common stock. Our loan and security agreement with Silicon Valley Bank includes 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, and any debt financing that we secure in the future could have similar restrictive covenants. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be adversely affected.

The nature of our business requires the application of complex accounting rules and regulations. Significant changes in current principles will affect our consolidated financial statements and changes in financial accounting standards or practices may cause adverse, unexpected financial reporting fluctuations and harm our results of operations.

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

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

The preparation of financial statements in conformity with generally accepted accounting principles in the United States, or U.S. GAAP, requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, as provided in "Management's Discussion and Analysis of Financial Condition and Results of Operations." The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities and equity, and the

amount of revenue and expenses that are not readily apparent from other sources. Significant assumptions and estimates used in preparing our consolidated financial statements include the determination of the estimated economic life of perpetual licenses for revenue recognition, the estimated period of benefit for deferred commissions, useful lives of long-lived assets, the valuation of stock-based compensation, including the estimated underlying fair value of our common stock prior to our IPO, the incremental borrowing rate for operating leases, and the valuation of deferred tax assets. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our common stock.

Additionally, we regularly monitor our compliance with applicable financial reporting standards and review new pronouncements and drafts thereof that are relevant to us. As a result of new standards, changes to existing standards and changes in their interpretation, we might be required to change our accounting policies, alter our operational policies and implement new or enhance existing systems so that they reflect new or amended financial reporting standards, or we may be required to restate our published financial statements. Such changes to existing standards or changes in their interpretation may have an adverse effect on our reputation, business, financial position and profit, or cause an adverse deviation from our revenue and operating profit target, which may negatively impact our financial results.

Our operating results may be negatively affected if we are required to pay additional state sales tax, value added, or other transaction taxes, and we could be subject to liability with respect to all or a portion of past or future sales.

We currently collect and remit sales and use, value added and other transaction taxes in certain of the jurisdictions where we do business based on our assessment of the amount of taxes owed by us in such jurisdictions. However, in some jurisdictions in which we do business, we do not believe that we owe such taxes, and therefore we currently do not collect and remit such taxes in those jurisdictions or record contingent tax liabilities in respect of those jurisdictions.

Further, due to uncertainty in the application and interpretation of applicable tax laws in various jurisdictions, we may be exposed to sales and use, value added or other transaction tax liability. A successful assertion that we are required to pay additional taxes in connection with sales of our solutions, or the imposition of new laws or regulations requiring the payment of additional taxes, would create increased costs and administrative burdens for us. If we are subject to additional taxes and determine to offset such increased costs by collecting and remitting sales taxes from our customers, or otherwise passing those costs through to our customers, companies may be discouraged from using our solutions. Any increased tax burden may decrease our ability or willingness to compete in relatively burdensome tax jurisdictions, result in substantial tax liabilities related to past sales or otherwise harm our business and operating results.

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

As of December 31, 2019 we had federal, state and foreign net operating loss carryforwards, or NOLs, of \$186.0 million, \$132.0 million, and \$163.6 million, respectively, available to offset future taxable income, which begin to expire in 2030. A lack of future taxable income would adversely affect our ability to utilize these NOLs before they expire.

In addition, under the provisions of the Internal Revenue Code of 1986, as amended, or the Internal Revenue Code, substantial changes in our ownership may limit the amount of pre-change NOLs that can be utilized annually in the future to offset taxable income. Section 382 of the Internal Revenue Code imposes limitations on a company's ability to use NOLs if a company experiences a more-than-50-percent ownership change over a three-year testing period. Based upon an analysis as of December 31, 2017, we determined that we do not expect these limitations to impair our ability to use our NOLs prior to expiration. However, if changes in our ownership occur in the future, our ability to use our NOLs may be further limited. For these reasons, we may not be able to utilize a material portion of the NOLs, even if we achieve profitability.

Uncertainties in the interpretation and application of the 2017 Tax Cuts and Jobs Act and possible future changes in tax laws or regulations could materially affect our tax obligations and effective tax rate.

Forecasts of our income tax position and effective tax rate for financial accounting purposes are complex and subject to uncertainty because our income tax position for each year combines the effects of a mix of profits earned and losses incurred by us in various tax jurisdictions with a broad range of income tax rates, as well as changes in the valuation of deferred tax assets and liabilities, the impact of various accounting rules and changes to these rules and

tax laws, the results of examinations by various tax authorities, and the impact of any acquisition, business combination or other reorganization or financing transaction. To forecast our global tax rate, we estimate our pre-tax profits and losses by jurisdiction and forecast our tax expense by jurisdiction. If the mix of profits and losses, our ability to use tax credits, our assessment of the need for valuation allowances, or effective tax rates by jurisdiction is different than those estimated, our actual tax rate could be materially different than forecasted, which could have a material impact on our results of business, financial condition and results of operations.

On December 22, 2017, U.S. Federal tax reform was enacted with the signing of the Tax Cuts and Jobs Act, or TCJA. Future guidance from the U.S. Internal Revenue Service and other tax authorities with respect to the TCJA may affect us, and certain aspects of the TCJA could be repealed or modified in future legislation. Changes in corporate tax rates, the realization of net deferred tax assets relating to our U.S. operations, the taxation of foreign earnings and the deductibility of expenses under the TCJA or future tax reform legislation could have a material impact on the value of our deferred tax assets, could result in significant one-time charges in the current or future taxable years and could increase our future U.S. tax expense. The foregoing items, as well as any other future changes in tax laws, could have a material adverse effect on our business, cash flow, financial condition or results of operations. In addition, it is uncertain if and to what extent various states will conform to the TCJA or any newly enacted federal tax legislation.

We are subject to anti-corruption laws, anti-bribery and similar laws with respect to our domestic and international operations, and non-compliance with such laws can subject us to criminal and/or civil liability and materially harm our business and reputation.

We are subject to the anti-bribery laws of the jurisdictions in which we operate. This includes the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the U.K. Bribery Act 2010, and other anti-corruption laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit our company from authorizing, offering, or providing, directly or indirectly, improper payments or benefits in order to gain or maintain business, including payments to recipients in the public or private sector. We use third-party law firms, accountants, and other representatives for regulatory compliance, sales, and other purposes in several countries. We sell directly and indirectly, via third-party representatives, to the U.S. and non-U.S. customers, both private and government sectors, and our employees and third-party representatives interact with these customers who may include government officials. We can be held liable for the corrupt or other illegal activities of these third-party representatives, our employees, contractors, and other agents, even if we do not explicitly authorize such activities. Noncompliance with these laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, suspension and/or debarment from contracting with certain persons, the loss of export privileges, reputational harm, adverse media coverage, and other collateral consequences. If any subpoenas or investigations are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our reputation, business, results of operations and financial condition 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 significant defense costs and other professional fees. Enforcement actions and sanctions could further harm our business, results of operations, and financial condition. Moreover, as an issuer of securities, we also are subject to the accounting and internal controls provisions of the FCPA. These provisions require us to maintain accurate books and records and a system of internal controls sufficient to detect and prevent corrupt conduct. Failure to abide by these provisions may have an adverse effect on our business, operations or financial condition.

We are subject to governmental export and import controls and economic and trade sanctions that could impair our ability to conduct business in international markets and subject us to liability if we are not in compliance with applicable laws and regulations.

The United States and other countries maintain and administer export and import laws and regulations. Our products are subject to U.S. export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, and various economic and trade sanctions administered by the U.S. Treasury Department's Office of Foreign Assets Control. We are required to comply with these laws and regulations. If we fail to comply with such 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. 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 solutions, or changes in applicable export or import laws and regulations may create delays in the introduction and sale of our products in international markets or, in some cases, prevent the export or import of our solutions to certain countries, governments

or persons altogether. Any change in export or import laws and regulations or economic or trade sanctions, 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 products, or in our decreased ability to export or sell our products to existing or potential customers. For example, the current U.S. administration has been critical of existing trade agreements and may impose more stringent export and import controls. Any decreased use of our products or limitation on our ability to export or sell our products would likely adversely affect our business, financial condition, and results of operations.

Furthermore, we incorporate encryption technology into certain of our solutions. Various countries regulate the import of certain encryption technology, including import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our solutions or could limit our customers' ability to implement our solutions in those countries. Encrypted products and the underlying technology may also be subject to export control restrictions. Governmental regulation of encryption technology and regulation of imports or exports of encryption solutions, or our failure to obtain required import or export approval for our solutions, could harm our international sales and adversely affect our revenue. Compliance with applicable laws and regulations regarding the export and import of our solutions, including with respect to new solutions or changes in existing solutions, may create delays in the introduction of our solutions in international markets, prevent our customers with international operations from deploying our solutions globally or, in some cases, could prevent the export or import of our solutions to certain countries, governments, entities or persons altogether.

Moreover, 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. Any violations of such economic embargoes and trade sanction regulations could have negative consequences, including government investigations, penalties and reputational harm.

Risks Related to Government Regulation, Data Collection and Intellectual Property

Our business could be adversely affected if our employees cannot obtain and maintain required security clearances or we cannot establish and maintain a required facility security clearance.

Certain U.S. government contracts may require our employees to maintain various levels of security clearances, and may require us to maintain a facility security clearance, to comply with Department of Defense, or DoD, requirements. The DoD has strict security clearance requirements for personnel who perform work in support of classified programs. Obtaining and maintaining a facility clearance and security clearances for employees can be a difficult, sometimes lengthy process. If we do not have employees with the appropriate security clearances, then a customer requiring classified work could terminate an existing contract or decide not to renew the contract upon its expiration. To the extent we are not able to obtain or maintain a facility security clearance, we may not be able to bid on or win new classified contracts, and existing contracts requiring a facility security clearance could be terminated.

Any failure to protect our proprietary technology and intellectual property rights could substantially harm our business and operating results.

Our success and ability to compete depend in part on our ability to protect our proprietary technology and intellectual property. To safeguard these rights, we rely on a combination of patent, trademark, copyright and trade secret laws and contractual protections in the United States and other jurisdictions, all of which provide only limited protection and may not now or in the future provide us with a competitive advantage.

As of December 31, 2019, we had 16 issued patents and six patent applications pending in the United States relating to our technology. We cannot assure you that any patents will issue from any patent applications, that patents that issue from such applications will give us the protection that we seek or that any such patents will not be challenged, invalidated or circumvented. Any patents that may issue in the future from our pending or future patent applications may not provide sufficiently broad protection and may not be enforceable in actions against alleged infringers. Obtaining and enforcing software patents in the United States is becoming increasingly challenging. Any patents we have obtained or may obtain in the future may be found to be invalid or unenforceable in light of recent and future changes in the law. We have registered the "Tenable," "Nessus," "Tenable.io" and "Lumin" names and our Tenable logo in the United States and certain other countries. We have registrations and/or pending applications for additional marks in the United States; however, we cannot assure you that any future trademark registrations will be issued for pending or future applications or that any registered trademarks will be enforceable or provide adequate protection of our proprietary rights. While we have copyrights in our software we do not typically register such

copyrights with the Copyright Office. This failure to register the copyrights in our software may preclude us from obtaining statutory damages for infringement under certain circumstances. We also license software from third parties for integration into our software, including open source software and other software available on commercially reasonable terms. We cannot assure you that such third parties will maintain such software or continue to make it available.

In order to protect our unpatented proprietary technologies and processes, we rely on trade secret laws and confidentiality and invention assignment agreements with our employees, consultants, strategic partners, vendors and others. Despite our efforts to protect our proprietary technology and trade secrets, unauthorized parties may attempt to misappropriate, copy, reverse engineer or otherwise obtain and use them. In addition, others may independently discover our trade secrets, in which case we would not be able to assert trade secret rights, or develop similar technologies and processes. Further, several agreements may give customers limited rights to access portions of our proprietary source code, and the contractual provisions that we enter into may not prevent unauthorized use or disclosure of our proprietary technology or intellectual property and may not provide an adequate remedy in the event of unauthorized use or disclosure of our proprietary technology or intellectual property rights. Moreover, policing unauthorized use of our technologies, trade secrets and intellectual property is difficult, expensive and time-consuming, particularly in foreign countries where the laws may not be as protective of intellectual property rights as those in the United States and where mechanisms for enforcement of intellectual property rights may be weak. To the extent that we expand our activities outside of the United States, our exposure to unauthorized copying and use of our solutions and proprietary information may increase. We may be unable to determine the extent of any unauthorized use or infringement of our solutions, technologies or intellectual property rights.

There can be no assurance that the steps that we take will be adequate to protect our proprietary technology and intellectual property, that others will not develop or patent similar or superior technologies, solutions or services, or that our trademarks, patents, and other intellectual property will not be challenged, invalidated or circumvented by others. Furthermore, effective trademark, patent, copyright, and trade secret protection may not be available in every country in which our software is available or where we have employees or independent contractors. In addition, the legal standards relating to the validity, enforceability, and scope of protection of intellectual property rights in internet and software-related industries are uncertain and still evolving.

In order to protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. Litigation brought to protect and enforce our intellectual property rights could be costly, time-consuming and distracting to management and could result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights. Our failure to secure, protect and enforce our intellectual property rights could seriously adversely affect our brand and adversely impact our business.

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

Companies in the software and technology industries, including some of our current and potential competitors, own significant numbers of patents, copyrights, trademarks and trade secrets and frequently enter into litigation based on allegations of infringement or other violations of intellectual property rights. In addition, many of these companies have the capability to dedicate substantially greater resources to enforce their intellectual property rights and to defend claims that may be brought against them. The litigation may involve patent holding companies or other adverse patent owners that have no relevant product revenue and against which our patents may therefore provide little or no deterrence. In the past, we have been subject to allegations of patent infringement that were unsuccessful, and we expect in the future to be subject to claims that we have misappropriated, misused, or infringed other parties' intellectual property rights, and, to the extent we gain greater market visibility or face increasing competition, we face a higher risk of being the subject of intellectual property infringement claims, which is not uncommon with respect to enterprise software companies. We may in the future be subject to claims that employees or contractors, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of our competitors or other parties. To the extent that intellectual property claims are made against our customers based on their usage of our technology, we have certain obligations to indemnify and defend such customers from those claims. The term of our contractual indemnity provisions often survives termination or expiration of the applicable agreement. Large indemnity payments, defense costs or damage claims from contractual breach could harm our business, results of operations and financial condition.

There may be third-party intellectual property rights, including issued or pending patents that cover significant aspects of our technologies or business methods. Any intellectual property claims, with or without merit, could be very time-consuming, could be expensive to settle or litigate, could divert our management's attention and other resources and could result in adverse publicity. These claims could also subject us to making substantial payments for legal fees, settlement payments, and other costs or damages, potentially including treble damages if we are found to have willfully infringed patents or copyrights. These claims could also result in our having to stop making, selling, offering for sale, or using technology found to be in violation of a third party's rights. We might be required to seek a license for the third-party intellectual property rights, which may not be available on reasonable terms or at all. Even if a license is available to us, we may be required to pay significant upfront fees, milestones or royalties, which would increase our operating expenses. Moreover, to the extent we only have a license to any intellectual property used in our solutions, there may be no guarantee of continued access to such intellectual property, including on reasonable terms. As a result, we may be required to develop alternative non-infringing technology, which could require significant effort and expense. If a third party is able to obtain an injunction preventing us from accessing such third-party intellectual property rights, or if we cannot license or develop technology for any infringing aspect of our business, we would be forced to limit or stop sales of our software or cease business activities covered by such intellectual property, and may be unable to compete effectively. Any of these results would adversely affect our business, results of operations, financial condition and cash flows.

Portions of our solutions utilize open source software, and any failure to comply with the terms of one or more of these open source licenses could negatively affect our business.

Our software contains software made available by third parties under so-called "open source" licenses. From time to time, there have been claims against companies that distribute or use open source software in their products and services, asserting that such open source software infringes the claimants' intellectual property rights. We could be subject to suits by parties claiming that what we believe to be licensed open source software infringes their intellectual property rights. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. In addition, certain open source licenses require that source code for software programs that are subject to the license be made available to the public and that any modifications or derivative works to such open source software continue to be licensed under the same terms. Further, certain open source licenses also include a provision that if we enforce any patents against the software programs that are subject to the license, we would lose the license to such software. If we were to fail to comply with the terms of such open source software licenses, such failures could result in costly litigation, lead to negative public relations or require that we quickly find replacement software which may be difficult to accomplish in a timely manner.

Although we monitor our use of open source software in an effort both to comply with the terms of the applicable open source licenses and to avoid subjecting our software to conditions we do not intend, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our product or operate our business. By the terms of certain open source licenses, we could be required to release the source code of our software and to make our proprietary software available under open source licenses, if we combine or distribute our software with open source software in a certain manner. In the event that portions of our software are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all, or a portion of, that software or otherwise be limited in the licensing of our software, each of which could reduce or eliminate the value of our product. Many of the risks associated with usage of open source software cannot be eliminated, and could negatively affect our business, results of operations and financial condition.

Risks Related to Our Common Stock

Our stock price may be volatile, and the value of our common stock may decline.

The market price of our common stock may fluctuate substantially and depends on a number of factors, including those described in this "Risk Factors" section, many of which are beyond our control and may not be related to our operating performance. Factors that could cause fluctuations in the market price of our common stock include the following:

- actual or anticipated changes or fluctuations in our operating results;
- the financial projections we may provide to the public, any changes in these projections or our failure to meet these projections;

- announcements by us or our competitors of new products or new or terminated significant contracts, commercial relationships or capital commitments;
- industry or financial analyst or investor reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- price and volume fluctuations in the overall stock market from time to time;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- sales of shares of our common stock by us or our stockholders, or the perception that these sales might occur, including in connection with anticipated distributions of shares of our common stock by entities affiliated with members of our Board of Directors;
- failure of industry or financial analysts to maintain coverage of us, changes in financial estimates by any analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- actual or anticipated developments in our business or our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property rights or our solutions, or third-party proprietary rights;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- any major changes in our management or our Board of Directors;
- general economic conditions and slow or negative growth of our markets; and
- other events or factors, including those resulting from pandemics, war, incidents of terrorism or responses to these events.

Recently, 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.

An active public trading market may not be sustained.

Prior to our initial public offering, or IPO, in July 2018, there was no public market or active private market for our common stock. Following our IPO, an active public trading market may not be sustained. The lack of an active market may impair your ability to sell your shares at the time you wish to sell them or at a price that you consider reasonable. The lack of an active market may also reduce the fair value of your shares. An inactive market may also impair our ability to raise capital to continue to fund operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

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

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. We do not control these analysts or the content and opinions included in their reports. As a new public company, we may be slow to attract research coverage and the analysts who publish information about our common stock will have had relatively little experience with our company, which could affect their ability to accurately forecast our results and make it more likely that we fail to meet their estimates. 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. In addition, the stock prices of many companies in the technology industry have declined significantly after those companies have failed to meet, or significantly exceed, the financial guidance publicly announced by the companies or the expectations of analysts. If our

financial results fail to meet, or exceed, our announced guidance or the expectations of analysts or public investors, analysts could downgrade our common stock or publish unfavorable research about us. 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.

Future sales of substantial amounts of our common stock in the public markets, or the perception that they might occur, could reduce the price that our common stock might otherwise attain.

Sales of a substantial number of shares of our common stock in the public market by us or our stockholders, or the perception that these sales might occur, including in connection with anticipated distributions of shares of our common stock by entities affiliated with members of our Board of Directors, could depress the market price of our common stock, impair our ability to raise capital through the sale of additional equity securities and make it more difficult for you to sell your common stock at a time and price that you deem appropriate.

In addition, we have filed registration statements on Form S-8 under the Securities Act registering the issuance of shares of common stock subject to options and other equity awards issued or reserved for future issuance under our equity incentive plans. Shares registered under these registration statements, and under additional registration statements on Form S-8 that we may file to register additional shares of common stock pursuant to provisions of our equity incentive plans that provide for an automatic increase in the number of shares reserved and available for issuance each year, are available for sale in the public market subject to vesting arrangements and exercise of options and the restrictions of Rule 144 under the Securities Act in the case of our affiliates.

The issuance of additional stock in connection with financings, acquisitions, investments, our equity incentive plan or otherwise will dilute all other stockholders.

Our certificate of incorporation authorizes us to issue up to 500,000,000 shares of common stock and up to 10,000,000 shares of preferred stock with such rights and preferences as may be determined by our Board of Directors. Subject to compliance with applicable rules and regulations, in the future we may issue common stock or other securities convertible into shares of our common stock from time to time in connection with a financing, acquisition, investment, our equity incentive plan or otherwise. The number of new shares of our common stock issued in connection with raising additional capital could constitute a material portion of the then outstanding shares of our common stock, which could result in substantial dilution to our existing stockholders and cause the market price of our common stock to decline.

Concentration of ownership among our existing directors, executive officers and holders of 5% or more of our outstanding common stock may prevent new investors from influencing significant corporate decisions, including the ability to influence the outcome of director elections and other matters requiring stockholder approval.

Our executive officers, directors and current beneficial owners of 5% or more of our common stock beneficially own a significant percentage of our outstanding common stock. These persons, acting together, will be able to significantly influence all matters requiring stockholder approval, including the election and removal of directors and any merger or other significant corporate transactions. The interests of this group of stockholders may not coincide with the interests of other stockholders.

The requirements of being a public company may strain our resources, divert management's attention and affect our ability to attract and retain qualified board members.

As a public company, we are subject to the reporting and corporate governance requirements of the Exchange Act, the listing requirements of the Nasdaq and other applicable securities rules and regulations, including the Sarbanes-Oxley Act and the Dodd-Frank Wall Street Reform and Consumer Protection Act. Compliance with these rules and regulations increases our legal and financial compliance costs, makes some activities more difficult, time-consuming or costly and increases demand on our systems and resources, particularly as we are no longer an "emerging growth company" as of December 31, 2019. Among other things, the Exchange Act requires that we file annual, quarterly and current reports with respect to our business and results of operations and maintain effective disclosure controls and procedures and internal control over financial reporting. In order to improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could harm our business, financial condition, results of operations and prospects. Although we have already hired, and are in the

process of hiring, additional personnel to help comply with these requirements, we may need to further expand our legal and finance departments in the future, which will increase our costs and expenses.

In addition, changing laws, regulations and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs and making some activities more time-consuming. These laws, regulations and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations and standards, and this investment may result in increased general and administrative expense and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations and standards differ from the activities intended by regulatory or governing bodies, regulatory authorities may initiate legal proceedings against us and our business and prospects may be harmed. As a result of disclosure of information in the filings required of a public company, our business and financial condition will become more visible, which may result in threatened or actual litigation, including by competitors and other third parties. If such claims are successful, our business, financial condition, results of operations and prospects could be materially harmed, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and materially harm our business, financial condition, results of operations and prospects.

We also expect that being a public company and these new rules and regulations will make it more expensive for us to obtain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified executive officers and members of our Board of Directors, particularly to serve on our audit committee and compensation committee.

In addition, as a result of our disclosure obligations as a public company, we may have reduced strategic flexibility and may be under pressure to focus on short-term results, which could materially and adversely affect our ability to achieve long-term profitability.

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 have never declared or paid any cash dividends on our common stock and do not intend to pay any cash dividends in the foreseeable future. We anticipate that we will retain all of our future earnings for use in the development of our business and for general corporate purposes. Any determination to pay dividends in the future will be at the discretion of our Board of Directors. Accordingly, investors must rely on sales of their common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments. In addition, our loan and security agreement with Silicon Valley Bank contains restrictive covenants that prohibit us, subject to certain exceptions, from paying dividends on our common stock.

As a result of being a public company, we are obligated to develop and maintain proper and effective internal controls over financial reporting, and any failure to maintain the adequacy of these internal controls may adversely affect investor confidence in our company and, as a result, the value of our common stock.

We are required, pursuant to Section 404 of the Sarbanes-Oxley Act, or Section 404, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. This report by management is included in Part II, Item 9A of this Form 10-K. In addition, now that we have ceased to be an "emerging growth company," our independent registered public accounting firm is required to attest to the effectiveness of our internal control over financial reporting in this Form 10-K. We are also required to disclose significant changes made in our internal control procedures on a quarterly basis.

Our compliance with Section 404 requires that we incur substantial professional fees and expend significant management efforts, and we may need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge and compile the system and process documentation necessary to perform the evaluation needed to comply with Section 404.

During the evaluation and testing process of our internal controls, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal control over financial reporting is effective. We cannot assure you that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition or results of operations. If we are unable to conclude that our internal control over financial reporting is effective, or if our independent registered public accounting firm determines we have a material weakness or significant deficiency in our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, the market price of our common stock could decline, and we could be subject to sanctions or investigations by the Nasdaq, the SEC or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

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 members of our Board of Directors and our current management and could negatively impact the market price of our common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that could delay or prevent a change in control of our company. These provisions could also make it difficult for stockholders to elect directors that are not nominated by the current members of our Board of Directors or take other corporate actions, including effecting changes in our management. These provisions include:

- a classified Board of Directors with three-year staggered terms, which could delay the ability of stockholders to change the membership of a majority of our Board of Directors;
- the ability of our Board of Directors to issue shares of preferred stock and to determine the price and other terms of those shares, including preferences and voting rights, without stockholder approval, which could be used to significantly dilute the ownership of a hostile acquirer;
- the exclusive right of our Board of Directors to elect a director to fill a vacancy created by the expansion of our Board of Directors or the resignation, death or removal of a director, which prevents stockholders from being able to fill vacancies on our Board of Directors;
- a prohibition on stockholder action by written consent, which forces stockholder action to be taken at an annual or special meeting of our stockholders;
- the requirement that a special meeting of stockholders may be called only by the chairperson of our Board of Directors, Chief Executive Officer or president (in the absence of a chief executive officer) or a majority vote of our Board of Directors, which could delay the ability of our stockholders to force consideration of a proposal or to take action, including the removal of directors;
- the requirement for the affirmative vote of holders of at least 66 2/3% of the voting power of all of the then outstanding shares of the voting stock, voting together as a single class, to amend the provisions of our amended and restated certificate of incorporation relating to the issuance of preferred stock and management of our business or our amended and restated bylaws, which may inhibit the ability of an acquirer to affect such amendments to facilitate an unsolicited takeover attempt;
- the ability of our Board of Directors, by majority vote, to amend our amended and restated bylaws, which may allow our Board of Directors to take additional actions to prevent an unsolicited takeover and inhibit the ability of an acquirer to amend our amended and restated bylaws to facilitate an unsolicited takeover attempt; and
- advance notice procedures with which stockholders must comply to nominate candidates to our Board of Directors or to propose matters to be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of us.

These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware or the U.S. federal district courts will be the exclusive forums for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or other employees.

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware is the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a breach of fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders, any action asserting a claim against us arising pursuant to any provisions of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws, or any action asserting a claim against us that is governed by the internal affairs doctrine. This exclusive forum provision, if permitted by applicable law, may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers or other employees, which may discourage such lawsuits against us and our directors, officers or other employees. If a court were to find this exclusive forum provision to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could adversely affect our results of operations and financial condition.

Our amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. Recently, the Delaware Chancery Court issued an opinion invalidating such a provision. In light of that recent decision, we will not attempt to enforce this provision of our amended and restated certificate of incorporation to the extent it is not permitted by applicable law. As a result, we may incur additional costs associated with resolving disputes that would otherwise be restricted by that provision in other jurisdictions, which could seriously harm our business.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters are located in Columbia, Maryland and consist of approximately 96,000 square feet under leases that expire in May 2021 and May 2020. We have entered into a lease for our planned new corporate headquarters located in Columbia, Maryland, which consists of approximately 160,000 square feet under a lease that expires in February 2032, which we plan to occupy in 2020. We maintain additional offices in multiple locations in the United States and internationally in Europe and the Middle East, Asia Pacific and South America. We believe that our current facilities are adequate to meet our ongoing needs and that suitable additional alternative spaces will be available in the future on commercially reasonable terms.

Item 3. Legal Proceedings

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business. We are not presently a party to any legal proceedings that, if determined adversely to us, would individually or taken together have a material adverse effect on our business, results of operations, financial condition or cash flows. We have received, and may in the future continue to receive, claims from third parties asserting, among other things, infringement of their intellectual property rights. Future litigation may be necessary to defend ourselves, our partners and our customers by determining the scope, enforceability and validity of third-party proprietary rights, or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market Information for Common Stock

Our common stock trades on the Nasdaq Global Select Market under the ticker symbol "TENB."

Holders of Record

At December 31, 2019, we had 34 holders of record. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividend Policy

We have never declared or paid any dividends on our common stock. In addition, our loan and security agreement with Silicon Valley Bank contains restrictive covenants that prohibit us, subject to certain exceptions, from paying dividends on our common stock. We currently intend to retain all available funds and any future earnings for the operation and expansion of our business and do not anticipate declaring or paying cash dividends in the foreseeable future. The payment of any future dividends will be at the discretion of our board of directors and will depend on our results of operations, capital requirements, financial condition, prospects, contractual arrangements, any limitations on payment of dividends present in our current and future debt agreements, and other factors that our board of directors may deem relevant.

Unregistered Sales of Equity Securities

None.

Use of Proceeds from IPO

On July 30, 2018, we completed our IPO, in which we issued and sold 12,535,000 shares of common stock at a price to the public of \$23.00 per share, including 1,635,000 shares of common stock purchased by our underwriters pursuant to the full exercise of their over-allotment option to purchase additional shares. The offer and sale of all of the shares in the IPO were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-226002), which was declared effective by the SEC on July 25, 2018.

Morgan Stanley & Co. LLC, J.P. Morgan Securities LLC, Allen & Company LLC and Deutsche Bank Securities Inc. acted as active book-running managers for the offering. Stifel, Nicolaus & Company, Incorporated acted as passive book-running manager for the offering, and William Blair & Company, L.L.C. and BTIG, LLC acted as co-managers for the offering. The offering commenced on July 25, 2018 and did not terminate before all securities registered on the registration statement were sold.

We received net proceeds of \$264.6 million after deducting underwriting discounts and commissions and offering expenses. No offering expenses incurred by us were paid directly or indirectly to any of our directors, officers or persons owning ten percent or more of our capital stock (or their associates or affiliates).

There has been no material change in the planned use of the IPO proceeds as described in our final prospectus for our IPO dated as of July 25, 2018 and filed with the SEC pursuant to Rule 424(b)(4) under the Securities Act on July 26, 2018.

Issuer Purchases of Equity Securities

None.

Item 6. Selected Financial Data

The following 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 in this Annual Report on Form 10-K. The consolidated statements of operations data for the years ended December 31, 2016 and 2015 and consolidated balance sheet data as of December 31, 2017, 2016 and 2015 are from our audited financial statements not included in this Annual Report on Form 10-K.

You should read the following selected financial data with the historical consolidated financial statements and related notes to those statements, as well as “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” included in this Annual Report on Form 10-K.

Consolidated Statements of Operations Data: (in thousands, except per share data)	Year Ended December 31,				
	2019	2018	2017	2016	2015
Revenue ⁽¹⁾	\$ 354,586	\$ 267,360	\$ 187,727	\$ 124,371	\$ 93,466
Cost of revenue ⁽²⁾	60,818	43,167	25,588	14,219	10,914
Gross profit	293,768	224,193	162,139	110,152	82,552
Operating expenses:					
Sales and marketing ⁽²⁾	228,035	173,344	116,299	85,736	60,635
Research and development ⁽²⁾	87,064	76,698	57,673	40,085	25,288
General and administrative ⁽²⁾	69,468	46,732	28,927	20,164	15,348
Recapitalization costs ⁽³⁾	—	—	—	—	67,039
Total operating expenses	384,567	296,774	202,899	145,985	168,310
Loss from operations	(90,799)	(72,581)	(40,760)	(35,833)	(85,758)
Interest income (expense), net	5,830	2,355	(75)	(35)	10
Other expense, net	(680)	(931)	(16)	(497)	(199)
Loss before income taxes	(85,649)	(71,157)	(40,851)	(36,365)	(85,947)
Provision for (benefit from) income taxes	13,364	2,364	171	843	(2,188)
Net loss	(99,013)	(73,521)	(41,022)	(37,208)	(83,759)
Accretion of Series A and B redeemable convertible preferred stock	—	(434)	(763)	(763)	(29)
Net loss attributable to common stockholders	\$ (99,013)	\$ (73,955)	\$ (41,785)	\$ (37,971)	\$ (83,788)
Net loss per share attributable to common stockholders, basic and diluted ⁽⁴⁾	\$ (1.03)	\$ (1.38)	\$ (1.88)	\$ (1.81)	\$ (1.45)
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted	96,014	53,669	22,211	20,974	57,654

(1) We adopted Accounting Standards Codification Topic 606, *Revenue From Contracts With Customers*, or ASC 606, on January 1, 2017 using the modified retrospective method. The 2016 and 2015 consolidated statements of operations were not adjusted for the adoption of ASC 606.

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

(in thousands)	Year Ended December 31,				
	2019	2018	2017	2016	2015
Cost of revenue	\$ 2,817	\$ 1,707	\$ 281	\$ 223	\$ 52
Sales and marketing	16,032	6,911	1,579	969	866
Research and development	8,911	5,804	1,782	602	252
General and administrative	15,683	8,453	4,118	738	509
Total stock-based compensation expense	\$ 43,443	\$ 22,875	\$ 7,760	\$ 2,532	\$ 1,679

(3) We recorded a charge of \$67.0 million primarily resulting from the repurchase price paid to common stockholders exceeding the estimated fair value of the common stock on the date of the Series B financing.

(4) See Note 10 to our consolidated financial statements in this Annual Report on Form 10-K for details on the calculation of basic and diluted net loss per share attributable to common stockholders.

Consolidated Balance Sheet Data:

(in thousands)	December 31,				
	2019	2018	2017	2016	2015
Cash and cash equivalents	\$ 74,363	\$ 165,116	\$ 27,210	\$ 34,470	\$ 43,743
Working capital (deficit) ⁽¹⁾	35,319	142,484	(69,091)	(18,538)	13,862
Total assets	558,612	460,612	164,337	105,494	83,993
Deferred revenue, current and non-current	363,127	289,903	225,818	107,447	63,218
Redeemable convertible preferred stock	—	—	277,735	276,972	276,209
Accumulated deficit	(565,121)	(466,108)	(392,587)	(313,147)	(275,939)
Total stockholders' equity (deficit)	98,905	121,763	(371,665)	(301,918)	(266,862)

(1) We define working capital (deficit) as total current assets less total current liabilities. See our consolidated financial statements in this Annual Report on Form 10-K for further details regarding our current assets and current liabilities. Changes in working capital (deficit) between 2016 and 2017 reflect increases in deferred revenue and deferred commissions as a result of our subscription model and our adoption of ASC 606 on January 1, 2017.

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

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

On December 2, 2019, we acquired Indegy Ltd. ("Indegy") to expand our Operational Technology ("OT") specific capabilities. The results of operations of Indegy were not material to our consolidated statement of operations for 2019.

Overview

We are a leading provider of solutions for a new category of cybersecurity that we call Cyber Exposure. Cyber Exposure is a discipline for managing, measuring and comparing cybersecurity risk in the digital era. Our enterprise platform enables broad visibility into an organization's cyber exposure across the modern attack surface and deep insights that help organizations translate vulnerability data into business insights to understand and reduce their cybersecurity risk.

Our enterprise platform offerings include Tenable.io, which is our software as a service, or SaaS, offering and Tenable.sc, which is our on-premises offering, both of which provide organizations with applications purpose-built for areas of both traditional and modern attack surfaces, including IT infrastructure and applications, cloud environments and Industrial IoT and OT environments. These applications are designed with views, workflows and dashboards to help identify vulnerabilities, internal and regulatory compliance violations, misconfigurations and other cybersecurity issues, prioritize these issues for remediation, and provide insightful remediation guidance.

Our enterprise platform offerings are primarily sold on a subscription basis with a one-year term. Our subscription terms are generally not longer than three years. These offerings are typically prepaid in advance. To a lesser extent, we generate ratably recognizable revenue from perpetual licenses and from the related ongoing maintenance.

We sell and market our products and services through our field sales force that works closely with our channel partners, which includes a network of distributors and resellers, in developing sales opportunities. We use a two-tiered channel model whereby we sell our enterprise platform offerings to our distributors, which in turn sell to our resellers, which then sell to end users, which we call customers.

Many of our enterprise platform customers initially use either our free or paid version of Nessus, one of the industry's most widely deployed vulnerability assessment solutions. Nessus, which is the technology that underpins our enterprise platform offerings, is designed to quickly and accurately identify vulnerabilities, configuration and compliance issues and malware. Our free version of Nessus, Nessus Essentials, allows for vulnerability assessment over a limited number of IP addresses. We believe many of our Nessus customers begin with Nessus Essentials and subsequently upgrade to Nessus Professional, the paid version of Nessus; however, we expect many users to continue to use Nessus Essentials.

We have experienced rapid growth in recent years. Revenue in 2019, 2018 and 2017 was \$354.6 million, \$267.4 million and \$187.7 million, respectively, representing year-over-year growth of 33% and 42%, respectively. Our net loss in 2019, 2018 and 2017 was \$99.0 million, \$73.5 million and \$41.0 million, respectively, as we continue to invest in our business and market opportunity.

Financial Highlights

Below are our key financial results:

(in thousands, except per share data)	Year Ended December 31,		
	2019	2018	2017
Revenue	\$ 354,586	\$ 267,360	\$ 187,727
Loss from operations	(90,799)	(72,581)	(40,760)
Net loss	(99,013)	(73,521)	(41,022)
Net loss per share attributable to common stockholders, basic and diluted	(1.03)	(1.38)	(1.88)
Net cash used in operating activities	(10,744)	(2,559)	(6,266)
Purchases of property and equipment	(20,674)	(5,733)	(2,755)

Factors Affecting Our Performance**Product Leadership**

Our enterprise platform provides visibility into the broadest range of traditional and modern IT assets across cloud and on-premises environments. We are intensely focused on continued innovation and ongoing development of our enterprise platform offerings that empower organizations to understand and reduce their cyber exposure. Additionally, we continue to expand the capabilities of our Nessus products, specifically as they relate to the ability to scan for and detect the rapidly expanding volume of vulnerabilities.

We intend to continue to invest in our engineering capabilities and marketing activities to maintain our position in the highly-competitive market for cybersecurity solutions. Our results of operations may fluctuate as we make these investments to drive increased customer adoption and usage.

New Enterprise Platform Customer Acquisition

We believe that our customer base provides a significant opportunity to expand sales of our enterprise platform offerings and that our ability to continue to grow our enterprise platform customers will increase future opportunities for renewals and follow-on sales. We believe that we have significant room to increase our market share.

We expect to grow our enterprise platform customers by continuing to expand our sales organization and leveraging our channel partner network, which we believe will allow us to identify new enterprise customers, enter new markets, including internationally, as well as to convert more of our existing Nessus Professional customers to enterprise platform customers.

We have increased our sales and marketing headcount in recent years and we will continue to invest in our partner network and sales and marketing capability in order to grow domestically and internationally.

Retaining and Expanding Revenue from Existing Customers

Our enterprise platform offerings utilize IT asset-based or IP address-based pricing models. Once enterprise customers have licensed our platform offerings, they typically seek broader coverage over their traditional IT assets, including networking infrastructure, desktops and on-premises servers. As customers launch new applications or migrate existing applications to the cloud and deploy web applications, containers, internet of things, or IoT, and operational technology, or OT, they often increase the scope of their subscriptions and/or add additional perpetual licenses to our enterprise platforms.

We are also focused on upselling customers from Nessus Professional to our enterprise platform offerings. Nessus Professional customers are typically organizations or independent security consultants that use Nessus Professional for a single vulnerability assessment at a point in time. We seek to convert these customers to our enterprise platform offerings, which provide continuous visibility and insights into their attack surface, as their needs develop.

Further, we plan to expand existing platform capabilities and launch new products, which we believe will drive new product purchases and follow-on purchases over time, thereby contributing to customer renewals. We believe that there is a significant opportunity to drive additional sales to existing customers, and we expect to invest in sales and marketing and customer success personnel and activities to achieve additional revenue growth from existing customers. However, our ability to increase sales to existing customers will depend on a number of factors, including satisfaction or dissatisfaction with our products and services, competition, pricing, economic conditions or overall changes in our spending levels.

We evaluate our ability to expand sales with our existing customers by assessing our dollar-based net expansion rate. We calculate our dollar-based net expansion rate as follows:

- **Denominator:** To calculate our dollar-based net expansion rate as of the end of a reporting period, we first determine the annual recurring revenue, or ARR, from all active subscriptions and maintenance from perpetual licenses as of the last day of the same reporting period in the prior year. This represents recurring payments that we expect to receive in the next 12-month period from the cohort of customers that existed on the last day of the same reporting period in the prior year.
- **Numerator:** We measure the ARR for that same cohort of customers representing all subscriptions and maintenance from perpetual licenses based on customer orders as of the end of the reporting period.

We calculate dollar-based net expansion rate by dividing the numerator by the denominator.

While our dollar-based net expansion rate may decline or fluctuate from quarter to quarter based on the result of a number of factors, including our existing customers' satisfaction with our solutions, the pricing of our solutions and the ability of competing solutions and the pricing thereof, our dollar-based net expansion rate has historically exceeded, and we expect that it will continue to exceed, 110%.

Investing in Business Growth

Since our founding, we have invested significantly in growing our business. We intend to continue to invest in sales and marketing to grow our sales team, expand brand and Cyber Exposure awareness and optimize our channel partner network. We also intend to continue to invest in our research and development team to further our technological leadership position in Cyber Exposure and enhance the functionality of our solutions. Any investments we make in our sales and marketing and research and development teams will occur in advance of experiencing the benefits from such investments, so it may be difficult for us to determine if we are efficiently allocating resources in those areas. We may also explore acquisitions of businesses, technology and/or development personnel that will expand and enhance the functionality of our platform offerings. These investment activities could increase our net losses over the short term if our revenue growth does not increase at higher rates. However, we expect that these investments will ultimately benefit our results of operations.

Key Operating and Financial Metrics

To supplement our consolidated financial statements, which are prepared and presented in accordance with GAAP, we use certain operating metrics and non-GAAP financial measures, as described below, to understand and evaluate our core operating and financial performance. These non-GAAP financial measures, which may be different than similarly titled measures used by other companies, are presented to enhance investors' overall understanding of our financial performance and should not be considered a substitute for, or superior to, the financial information prepared and presented in accordance with GAAP.

We believe that these operating metrics and non-GAAP financial measures provide useful information about our operating and financial performance, enhance the overall understanding of our past performance and future prospects and allow for greater transparency with respect to important metrics used by management for financial and operational decision-making. We present these operating metrics and non-GAAP financial measures to assist investors in seeing our operating and financial performance using a management view and because we believe that these measures provide an additional tool for investors to use in comparing our core operating and financial performance over multiple periods with other companies in our industry.

Calculated Current Billings

We use the non-GAAP measure of calculated current billings, which we believe is a key metric to measure our periodic performance. Given that most of our customers pay in advance, we typically recognize a majority of the related revenue ratably over time. We use calculated current billings to measure and monitor our ability to provide our business with the working capital generated by upfront payments from our customers.

Calculated current billings consists of revenue recognized in a period plus the change in current deferred revenue in the corresponding period. We believe that calculated current billings, which excludes deferred revenue for periods beyond twelve months in a customer's contractual term, more closely correlates with annual contract value and that the variability in total billings, depending on the timing of large multi-year contracts and the preference for annual billing versus multi-year upfront billing, may distort growth in one period over another. While we believe that calculated current billings provides valuable insight into the cash that will be generated from sales of our subscriptions, this metric may vary from period-to-period for a number of reasons, and therefore has a number of limitations as a quarter-to-quarter or year-over-year comparative measure. For example, calculated current billings include amounts that have not yet been recognized as revenue; an increasing number of large sales transactions, for which the timing has and will continue to vary, may occur in quarters subsequent to or in advance of those that we anticipate; and our calculation of current billings may be different from other companies that report similar financial measures. Additionally, calculated current billings in any one period may be impacted by the timing of customer renewals, including early renewals, which could favorably or unfavorably impact year-over-year comparisons. Because of these and other limitations, you should consider calculated current billings along with revenue and our other GAAP financial results.

Our adoption of Accounting Standards Codification Topic 606, *Revenue From Contracts With Customers* as of January 1, 2017 resulted in a \$55.0 million increase in deferred revenue primarily related to the deferral of perpetual license revenue. This cumulative adjustment to deferred revenue at January 1, 2017 increased calculated current billings by \$16.7 million in 2017, \$11.8 million in 2018 and \$5.6 million in 2019 and is expected to increase our calculated current billings by \$1.9 million in 2020.

The following table presents a reconciliation of revenue, the most directly comparable financial measure calculated in accordance with GAAP, to calculated current billings:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Revenue	\$ 354,586	\$ 267,360	\$ 187,727
Deferred revenue (current), end of period	274,348	213,644	154,898
Deferred revenue (current), beginning of period ⁽¹⁾⁽²⁾	(214,069)	(154,898)	(107,006)
Calculated current billings	\$ 414,865	\$ 326,106	\$ 235,619

(1) Deferred revenue (current), beginning of period for 2019 includes \$0.4 million related to Indegy's deferred revenue at the acquisition date, which is not included in the deferred revenue (current), end of period for 2018.

(2) In connection with adopting ASC 606, we recorded \$19.0 million of current deferred revenue on January 1, 2017 related to perpetual license revenue recognized in prior periods.

Free Cash Flow

We use the non-GAAP measure of free cash flow, which we define as GAAP net cash flows from operating activities reduced by purchases of property and equipment. We believe free cash flow is an important liquidity measure of the cash (if any) that is available, after purchases of property and equipment, for investment in our business and to make acquisitions. We believe that free cash flow is useful to investors as a liquidity measure because it measures our ability to generate or use cash.

Our use of free cash flow has limitations as an analytical tool and you should not consider it in isolation or as a substitute for an analysis of our results under GAAP. First, free cash flow is not a substitute for net cash flows from operating activities. Second, other companies may calculate free cash flow or similarly titled non-GAAP financial

measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of free cash flow as a tool for comparison. Additionally, the utility of free cash flow is further limited as it does not reflect our future contractual commitments and does not represent the total increase or decrease in our cash balance for a given period. Because of these and other limitations, you should consider free cash flow along with net cash used in operating activities and our other GAAP financial measures.

The following table presents a reconciliation of net cash used in operating activities, the most directly comparable financial measure calculated in accordance with GAAP, to free cash flow:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Net cash used in operating activities	\$ (10,744)	\$ (2,559)	\$ (6,266)
Purchases of property and equipment	(20,674)	(5,733)	(2,755)
Free cash flow ⁽¹⁾	\$ (31,418)	\$ (8,292)	\$ (9,021)

(1) Free cash flow in 2019 included non-recurring cash payments totaling \$13.1 million associated with the Indegy acquisition, including \$6.7 million for income taxes on the transfer of acquired intellectual property, \$3.1 million for other costs related to the intellectual property transfer, \$1.8 million for the settlement of unvested acquiree equity awards, and \$1.5 million for acquisition-related expenses. Capital expenditures related to our new headquarters in 2019 were \$11.4 million. Contributions to our employee stock purchase plan in 2019 and 2018 impacted free cash flow by \$(0.9) million and \$6.3 million, respectively.

Enterprise Platform Customers

We believe that our customer base provides a significant opportunity to expand sales of our enterprise platform offerings. The following tables summarize key components of our customer base:

	Year Ended December 31,		
	2019	2018	2017
Number of new enterprise platform customers added in period ⁽¹⁾	1,511	1,178	1,017

(1) We define an enterprise platform customer as a customer that has licensed Tenable.io or Tenable.sc for an annual amount of \$5,000 or greater. New enterprise platform customers represent new customer logos during the periods presented and do not include customer conversions from Nessus Professional to enterprise platforms.

	At December 31,		
	2019	2018	2017
Number of customers with \$100,000 and greater in annual contract value at end of period	641	453	265

Non-GAAP Loss from Operations and Non-GAAP Operating Margin

We use non-GAAP loss from operations along with non-GAAP operating margin as key indicators of our financial performance. We define these non-GAAP financial measures as their respective GAAP measures, excluding the effects of stock-based compensation, acquisition-related expenses and amortization of acquired intangible assets. Acquisition-related expenses include transaction expenses and costs related to the transfer of acquired intellectual property.

We believe that these non-GAAP financial measures provide useful information about our core operating results over multiple periods. There are a number of limitations related to the use of the non-GAAP financial measures as compared to GAAP loss from operations and operating margin, including that non-GAAP loss from operations and non-GAAP operating margin exclude stock-based compensation expense, which has been, and will continue to be for the foreseeable future, a significant recurring expense in our business and an important part of our compensation strategy.

The following table presents a reconciliation of loss from operations, the most directly comparable financial measure calculated in accordance with GAAP, to non-GAAP loss from operations, and operating margin, the most directly comparable financial measure calculated in accordance with GAAP, to non-GAAP operating margin:

(dollars in thousands)	Year Ended December 31,		
	2019	2018	2017
Loss from operations	\$ (90,799)	\$ (72,581)	\$ (40,760)
Stock-based compensation	43,443	22,875	7,760
Acquisition-related expenses	3,970	—	—
Amortization of acquired intangible assets	620	603	603
Non-GAAP loss from operations	<u>\$ (42,766)</u>	<u>\$ (49,103)</u>	<u>\$ (32,397)</u>
Operating margin	(26)%	(27)%	(22)%
Non-GAAP operating margin	(12)%	(18)%	(17)%

Non-GAAP Net Loss, Non-GAAP Net Loss Per Share and Pro Forma Non-GAAP Net Loss Per Share

We use non-GAAP net loss, which excludes the effect of the accretion of Series A and B redeemable convertible preferred stock, stock-based compensation, acquisition-related expenses and amortization of acquired intangible assets, as well as the related tax impact, to calculate non-GAAP net loss per share and pro forma non-GAAP net loss per share. Pro forma non-GAAP net loss per share is calculated by giving effect to the conversion of our redeemable convertible preferred stock into common stock as though the conversion occurred at the beginning of each period presented prior to 2019. We believe that these non-GAAP measures provide important information to management and investors because they facilitate comparisons of our core operating results over multiple periods.

The following table presents a reconciliation of net loss, and net loss per share attributable to common stockholders, the most comparable financial measures calculated in accordance with GAAP, to non-GAAP net loss, non-GAAP net loss per share and pro forma non-GAAP net loss per share:

(in thousands, except for per share amounts)	Year Ended December 31,		
	2019	2018	2017
Net loss attributable to common stockholders	\$ (99,013)	\$ (73,955)	\$ (41,785)
Accretion of Series A and B redeemable convertible preferred stock	—	434	763
Acquisition-related expenses	3,970	—	—
Tax impact of acquisition ⁽¹⁾	10,582	—	—
Stock-based compensation	43,443	22,875	7,760
Tax impact of stock-based compensation ⁽²⁾	(95)	(218)	(54)
Amortization of acquired intangible assets ⁽³⁾	620	603	603
Non-GAAP net loss	\$ (40,493)	\$ (50,261)	\$ (32,713)
Net loss per share attributable to common stockholders, basic and diluted	\$ (1.03)	\$ (1.38)	\$ (1.88)
Accretion of Series A and B redeemable convertible preferred stock	—	0.01	0.03
Acquisition-related expenses	0.04	—	—
Tax impact of acquisition ⁽¹⁾	0.11	—	—
Stock-based compensation	0.45	0.42	0.35
Tax impact of stock-based compensation ⁽²⁾	—	—	—
Amortization of acquired intangible assets ⁽³⁾	0.01	0.01	0.03
Non-GAAP net loss per share, basic and diluted	\$ (0.42)	\$ (0.94)	\$ (1.47)
Weighted-average shares used to compute net loss per share attributable to common stockholders and non-GAAP net loss per share, basic and diluted	96,014	53,669	22,211
Pro forma adjustment to reflect the assumed conversion of our convertible redeemable preferred stock as of the beginning of the period	—	31,107	55,386
Weighted-average shares used to compute pro forma non-GAAP net loss per share, basic and diluted	96,014	84,776	77,597
Pro forma non-GAAP net loss per share, basic and diluted	\$ (0.42)	\$ (0.59)	\$ (0.42)

(1) The tax impact of the acquisition includes \$6.3 million of current tax expense and \$4.2 million of deferred tax expense related to the transfer of acquired intellectual property.

(2) The tax impact of stock-based compensation is based on the tax treatment for applicable tax jurisdictions.

(3) The tax impact of amortization of acquired intangible assets is not material.

Components of Our Results of Operations

Revenue

We generate revenue from subscription arrangements for our software and cloud-based solutions, perpetual licenses, maintenance associated with perpetual licenses and professional services.

Our subscription arrangements generally have annual or multi-year contractual terms to use our software or cloud-based solutions, including ongoing software updates during the contractual period. Revenue is recognized ratably over the subscription term given the critical utility provided by the ongoing updates that are released throughout the contract period.

Our perpetual licenses are generally sold with one or more years of maintenance, which includes ongoing software updates. Given the critical utility provided by the ongoing software updates and updated ability to identify network vulnerabilities included in maintenance, we combine the perpetual license and the maintenance into a single performance obligation. Perpetual license arrangements generally contain a material right related to the customer's ability to renew maintenance at a price that is less than the initial license fee. We apply a practical alternative to allocating a portion of the transaction price to the material right performance obligation and estimate a hypothetical transaction price which includes fees for expected maintenance renewals based on the estimated economic life of perpetual license contracts. We allocate the transaction price between the cybersecurity subscription provided in the initial contract and the material right related to expected contract renewals based on the hypothetical transaction price. We recognize the amount allocated to the combined license and maintenance performance obligation over the initial contractual period, which is generally one year. We recognize the amount allocated to the material right over the expected maintenance renewal period, which begins at the end of the initial contractual term and is generally four years. We have estimated the five-year economic life of perpetual license contracts based on historical contract attrition, expected renewal periods, the lifecycle of our technology and other factors. This estimate may change over time.

Professional services and other revenue is primarily comprised of advisory services and training related to the deployment and optimization of our products. These services do not result in significant customization of our products. Professional services and other revenue is recognized as the services are performed.

We have historically experienced, and expect in the future to experience, seasonality in entering into agreements with customers. We typically enter into a significantly higher percentage of agreements with new customers, as well as renewal agreements with existing customers, in the third and fourth quarters of the year. The increase in customer agreements in the third quarter is primarily attributable to U.S. government and related agencies, and the increase in the fourth quarter is primarily attributable to large enterprise account buying patterns typical in the software industry. Our recent growth and the ratable nature of our subscription revenue makes this seasonality less apparent in our overall financial results.

Cost of Revenue, Gross Profit and Gross Margin

Cost of revenue includes personnel costs related to our technical support group that provides assistance to customers, including salaries, benefits, bonuses, payroll taxes and stock-based compensation. Cost of revenue also includes cloud infrastructure costs, the costs related to professional services and training, depreciation, amortization of acquired and developed technology and allocated overhead costs, which consist of information technology and facilities.

We intend to continue to invest additional resources in our cloud-based platform and customer support team as we grow our business. The level and timing of investment in these areas could affect our cost of revenue in the future.

Gross profit, or revenue less cost of revenue, and gross margin, or gross profit as a percentage of revenue, have been and will continue to be affected by various factors, including the timing of our acquisition of new customers and our renewals of and follow-on sales to existing customers, the costs associated with operating our cloud-based platform, the extent to which we expand our customer support team and the extent to which we can increase the efficiency of our technology and infrastructure through technological improvements.

We expect our gross profit to increase in absolute dollars but our gross margin to decrease, as we expect revenue from our cloud-based subscriptions to increase as a percentage of revenue, although our gross margin could fluctuate from period to period depending on the interplay of all of these factors.

Operating Expenses

Our operating expenses consist of sales and marketing, research and development and general and administrative expenses. Personnel costs are the most significant component of operating expenses and consist of salaries, benefits, bonuses, payroll taxes and stock-based compensation expense. Operating expenses also include depreciation and amortization as well as allocated overhead costs including IT and facilities costs.

Sales and Marketing

Sales and marketing expense consists of personnel costs, sales commissions, marketing programs, travel and entertainment, expenses for conferences and events and allocated overhead costs.

We intend to continue to make investments in our sales and marketing teams to grow revenue, further penetrate the market and expand our global customer base. We expect our sales and marketing expense to continue to increase in absolute dollars and to be our largest operating expense category for the foreseeable future. However, as our revenue increases, we expect our sales and marketing expense to decrease as a percentage of our revenue over the long term, although our sales and marketing expense may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

Research and Development

Research and development expense consists of personnel costs, software used to develop our products, travel and entertainment, consulting and professional fees for third-party development resources as well as allocated overhead. Our research and development expense supports our efforts to continue to add capabilities to our existing products and enable the continued detection of new network vulnerabilities.

We expect our research and development expense to continue to increase in absolute dollars for the foreseeable future as we continue to invest in research and development efforts to enhance the functionality of our cloud-based platform. However, we expect our research and development expense to decrease as a percentage of our revenue over the long term, although our research and development expense may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

General and Administrative

General and administrative expense consists of personnel costs for our executive, finance, legal, human resources and administrative departments. Additional expenses include travel and entertainment, professional fees, insurance, allocated overhead, and acquisition related costs.

We expect our general and administrative expense to continue to increase in absolute dollars for the foreseeable future due to additional costs associated with accounting, compliance, insurance and investor relations as a public company. However, we expect our general and administrative expense to decrease as a percentage of our revenue over the long term, although our general and administrative expense may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

Interest Income, Net

Interest income, net consists primarily of interest income earned on cash and cash equivalents and short-term investments and interest expense in connection with fees for our unused revolving credit facility.

Other Expense, Net

Other expense, net consists primarily of foreign currency remeasurement and transaction gains and losses.

Provision for Income Taxes

Provision for income taxes consists of income taxes in certain foreign jurisdictions in which we conduct business and withhold taxes on sales with customers. We have recorded deferred tax assets for which a full valuation allowance has been provided, including net operating loss carryforwards and tax credits. We expect to maintain this full valuation allowance for the foreseeable future as it is more likely than not that some or all of those deferred tax assets may not be realized based on our history of losses. In 2019, the provision for income taxes included the tax impact related to the transfer of acquired intellectual property.

Results of Operations

The following tables set forth our consolidated results of operations for the periods presented:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Revenue	\$ 354,586	\$ 267,360	\$ 187,727
Cost of revenue ⁽¹⁾	60,818	43,167	25,588
Gross profit	293,768	224,193	162,139
Operating expenses:			
Sales and marketing ⁽¹⁾	228,035	173,344	116,299
Research and development ⁽¹⁾	87,064	76,698	57,673
General and administrative ⁽¹⁾	69,468	46,732	28,927
Total operating expenses	384,567	296,774	202,899
Loss from operations	(90,799)	(72,581)	(40,760)
Interest income (expense), net	5,830	2,355	(75)
Other expense, net	(680)	(931)	(16)
Loss before income taxes	(85,649)	(71,157)	(40,851)
Provision for income taxes	13,364	2,364	171
Net loss	\$ (99,013)	\$ (73,521)	\$ (41,022)

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

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Cost of revenue	\$ 2,817	\$ 1,707	\$ 281
Sales and marketing	16,032	6,911	1,579
Research and development	8,911	5,804	1,782
General and administrative	15,683	8,453	4,118
Total stock-based compensation expense	\$ 43,443	\$ 22,875	\$ 7,760

Comparison of 2019 and 2018

Revenue

(dollars in thousands)	Year Ended December 31,		Change	
	2019	2018	(\$)	(%)
Revenue	\$ 354,586	\$ 267,360	\$ 87,226	33%

The increase in revenue of \$87.2 million was comprised of increases in subscription revenue of \$84.7 million and professional services and other revenue of \$3.0 million, net of a decrease in perpetual license and maintenance revenue of \$0.5 million. Revenue from existing customers comprised 84% of the increase, while the remaining increase was due to revenue from new customers since January 1, 2019. International revenue increased \$40.4 million, or 45%.

Cost of Revenue, Gross Profit and Gross Margin

(dollars in thousands)	Year Ended December 31,		Change	
	2019	2018	(\$)	(%)
Cost of revenue	\$ 60,818	\$ 43,167	\$ 17,651	41%
Gross profit	293,768	224,193	69,575	31%
Gross margin	83%	84%		

The increase in cost of revenue of \$17.7 million was primarily due to:

- a \$7.3 million increase in personnel costs, primarily due to increased headcount, including a \$1.1 million increase in stock-based compensation;
- a \$7.0 million increase in third-party cloud infrastructure costs, largely associated with the increased adoption of Tenable.io, as well as the launch of Tenable Lumin;
- a \$0.9 million increase in allocated overhead costs driven by both the increase in headcount and the overall increase in such costs on a year-over-year basis;
- a \$0.6 million increase professional fees;
- a \$0.6 million increase in depreciation and amortization; and
- a \$0.5 million increase in software subscriptions.

Operating Expenses

Sales and Marketing

(dollars in thousands)	Year Ended December 31,		Change	
	2019	2018	(\$)	(%)
Sales and marketing	\$ 228,035	\$ 173,344	\$ 54,691	32%

The increase in sales and marketing expense of \$54.7 million was primarily due to:

- a \$32.1 million increase in personnel costs, largely associated with an increase in headcount, including a \$9.1 million increase in stock-based compensation;
- a \$10.0 million increase in sales commissions, including sales commission draws, due to increased sales and the amortization of deferred commissions;
- a \$5.7 million increase in selling expenses, including travel and meeting costs and software subscriptions;
- a \$3.4 million increase in allocated overhead costs driven by both the increase in headcount and the overall increase in such costs on a year-over-year basis; and
- a \$3.2 million increase in expenses for demand generation programs, including advertising, sponsorships, and brand awareness efforts aimed at acquiring new customers.

Research and Development

(dollars in thousands)	Year Ended December 31,		Change	
	2019	2018	(\$)	(%)
Research and development	\$ 87,064	\$ 76,698	\$ 10,366	14%

The increase in research and development expense of \$10.4 million was primarily due to:

- an \$8.1 million increase in personnel costs, largely associated with an increase in headcount, including a \$3.3 million increase in stock-based compensation, and net of \$1.7 million of development costs and stock-based compensation capitalized related to internal use software;

- a \$2.0 million increase in third-party cloud infrastructure costs related to the development of new and future offerings;
- a \$0.9 million increase in software subscriptions; and
- a \$0.7 million increase in allocated overhead driven by both the increase in headcount and the overall increase in such costs on a year-over-year basis, partially offset by
- a \$0.9 million decrease in travel and meeting costs.

General and Administrative

(dollars in thousands)	Year Ended December 31,		Change	
	2019	2018	(\$)	(%)
General and administrative	\$ 69,468	\$ 46,732	\$ 22,736	49%

The increase in general and administrative expense of \$22.7 million was primarily due to:

- a \$12.3 million increase in personnel costs, largely associated with an increase in headcount, including a \$6.4 million increase in stock-based compensation;
- a \$4.0 million increase in acquisition-related expenses, including \$2.1 million related to the transfer of acquired intellectual property;
- a \$3.7 million increase in professional fees, which includes costs associated with being a public company; and
- a \$1.1 million increase in allocated overhead driven by both the increase in headcount and the overall increase in such costs on a year-over-year basis.

Comparison of 2018 and 2017

Revenue

(dollars in thousands)	Year Ended December 31,		Change	
	2018	2017	(\$)	(%)
Revenue	\$ 267,360	\$ 187,727	\$ 79,633	42%

The increase in revenue of \$79.6 million was comprised of increases in subscription revenue of \$72.9 million, perpetual license and maintenance revenue of \$4.3 million and professional services and other revenue of \$2.4 million. Revenue from existing customers comprised 68% of the increase, while the remaining increase was due to revenue from new customers since January 1, 2018. International revenue increased \$31.6 million, or 55%.

Cost of Revenue, Gross Profit and Gross Margin

(dollars in thousands)	Year Ended December 31,		Change	
	2018	2017	(\$)	(%)
Cost of revenue	\$ 43,167	\$ 25,588	\$ 17,579	69%
Gross profit	224,193	162,139	62,054	38%
Gross margin	84%	86%		

The increase in cost of revenue of \$17.6 million was primarily due to:

- a \$6.9 million increase in personnel costs, primarily due to increased headcount, including a \$1.4 million increase in stock-based compensation;
- a \$5.3 million increase in third-party cloud infrastructure costs, largely associated with the increased adoption of Tenable.io;

- a \$3.3 million increase in allocated overhead costs driven by both the increase in headcount and the overall increase in such costs on a year-over-year basis;
- a \$0.8 million increase in software subscription expenses; and
- a \$0.5 million increase in depreciation and amortization.

Operating Expenses

Sales and Marketing

(dollars in thousands)	Year Ended December 31,		Change	
	2018	2017	(\$)	(%)
Sales and marketing	\$ 173,344	\$ 116,299	\$ 57,045	49%

The increase in sales and marketing expense of \$57.0 million was primarily due to:

- a \$29.2 million increase in personnel costs, largely associated with an increase in headcount, including a \$5.3 million increase in stock-based compensation;
- a \$14.3 million increase in sales commissions, including sales commission draws, due to increased sales and the amortization of deferred commissions;
- a \$6.1 million increase in expenses for demand generation programs, including advertising, sponsorships and brand awareness efforts aimed at acquiring new customers; and
- a \$4.9 million increase in selling expenses, including travel and meeting costs and the costs of software subscriptions.

Research and Development

(dollars in thousands)	Year Ended December 31,		Change	
	2018	2017	(\$)	(%)
Research and development	\$ 76,698	\$ 57,673	\$ 19,025	33%

The increase in research and development expense of \$19.0 million was primarily due to:

- a \$15.1 million increase in personnel costs, largely associated with an increase in headcount, including a \$4.0 million increase in stock-based compensation, and net of \$2.4 million of development costs capitalized related to internal use software;
- a \$1.6 million increase in third-party cloud infrastructure costs related to the development of new and future offerings;
- a \$0.7 million increase in software subscription expenses; and
- a \$0.6 million increase in allocated overhead driven by both the increase in headcount and the overall increase in such costs on a year-over-year basis.

General and Administrative

(dollars in thousands)	Year Ended December 31,		Change	
	2018	2017	(\$)	(%)
General and administrative	\$ 46,732	\$ 28,927	\$ 17,805	62%

The increase in general and administrative expense of \$17.8 million was primarily due to:

- a \$11.9 million increase in personnel costs, largely associated with an increase in headcount, including a \$4.3 million increase in stock-based compensation;
- a \$3.3 million increase in professional fees, which includes costs associated with being a public company; and

- a \$0.8 million increase in software subscription expense.

Liquidity and Capital Resources

At December 31, 2019, we had cash and cash equivalents consisting of bank deposits, money market funds and commercial paper of \$74.4 million and short-term investments consisting of commercial paper, U.S. Treasury and agency obligations and corporate bonds of \$137.9 million.

Since inception and prior to our IPO, we financed our operations through cash provided by operations, including payments received from customers using our software products and services, and we did not raise any primary institutional capital. The proceeds of our Series A and Series B redeemable convertible preferred stock financings were used to repurchase shares of capital stock from former stockholders. Upon the completion of our IPO in July 2018, we received net proceeds of \$264.6 million. We have generated significant operating losses from our operations, as reflected by our accumulated deficit of \$565.1 million at December 31, 2019.

We typically invoice our customers annually in advance and, to a lesser extent, multi-year in advance. Therefore, a substantial source of our cash is from such prepayments, which are included on our consolidated balance sheets as deferred revenue. Deferred revenue consists primarily of the unearned portion of billed fees for our subscriptions and perpetual licenses, which is subsequently recognized as revenue in accordance with our revenue recognition policy. At December 31, 2019, we had deferred revenue of \$363.1 million, of which \$274.3 million was recorded as a current liability and is expected to be recorded as revenue in the next 12 months, provided all other revenue recognition criteria are met.

Our principal uses of cash in recent periods have been funding our operations, expansion of our sales and marketing and research and development activities, investments in infrastructure and acquiring complementary businesses and technology. We expect to continue incurring operating losses and generating negative cash flows from operations in the near-term; however, we believe that our existing cash and cash equivalents and short-term investments will be sufficient to fund our operating and capital needs for at least the next 12 months. Our future capital requirements will depend on many factors, including our revenue growth rate, subscription renewal activity, the timing and extent of spending to support further infrastructure and research and development efforts, the timing and extent of additional capital expenditures to invest in new and existing office spaces, the expansion of sales and marketing and international operating activities, the timing of introduction of new product capabilities and enhancements of our platform and the continuing market acceptance of our platform. Capital expenditures related to our new corporate headquarters were \$11.4 million in 2019. In 2020, we expect capital expenditures related to our new corporate headquarters to be approximately \$16.0 million and we expect to receive \$12.5 million in tenant improvement reimbursements.

We may in the future enter into arrangements to acquire or invest in complementary businesses, services and technologies, including intellectual property rights. We may be required to seek equity or debt financing. In the event that financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we are unable to raise additional capital when desired, or if we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, operating results and financial condition would be adversely affected.

Credit Facility

In May 2017, we entered into a \$25.0 million revolving credit facility with Silicon Valley Bank. Pursuant to the terms of the revolving credit facility, we may issue up to \$5.0 million of letters of credit, which reduce the total amount available for borrowing under such facility. The revolving credit facility terminates on May 4, 2020. To date, we have not borrowed any amounts under the revolving credit facility.

Interest on borrowings under the revolving credit facility accrues at a variable rate tied to the prime rate or the LIBOR rate, at our election. Interest is payable quarterly in arrears. We are required to pay a quarterly commitment fee that accrues at a rate of 0.25% per annum on the unused portion of the borrowing commitment.

The revolving credit facility contains customary conditions to borrowing, events of default and covenants, including restrictions on indebtedness, liens, acquisitions and investments, restricted payments and dispositions. If, as of the last

day of any quarter, the outstanding balance of the revolving credit facility exceeds \$5.0 million, there are financial covenants that require us to maintain a minimum level of earnings before income taxes, interest, depreciation and amortization adjusted to add changes in deferred revenue in the period and a minimum current ratio level. We were in compliance with all covenants under the revolving credit facility at December 31, 2019.

Letter of Credit

On January 9, 2020, we entered into a \$2.5 million standby letter of credit ("Letter of Credit") for the security deposit on our new headquarters lease. The Letter of Credit bears interest at 2% per annum and expires one year from the issue date, with automatic renewals for additional one year terms until the final expiration date of February 2032. The Letter of Credit reduces the amount available for borrowing under our revolving credit facility.

Cash Flows

The following table summarizes our cash flows for the periods presented:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Net cash used in operating activities	\$ (10,744)	\$ (2,559)	\$ (6,266)
Net cash used in investing activities	(113,050)	(123,221)	(2,755)
Net cash provided by financing activities	34,161	264,749	2,091
Effect of exchange rate changes on cash and cash equivalents and restricted cash	(1,080)	(1,063)	(68)
Net (decrease) increase in cash and cash equivalents and restricted cash	\$ (90,713)	\$ 137,906	\$ (6,998)

Operating Activities

In 2019, net cash used in operating activities was \$10.7 million, which primarily consisted of our \$99.0 million net loss, adjusted for stock-based compensation expense of \$41.6 million and depreciation and amortization of \$6.9 million, as well as a net cash inflow of \$36.3 million from changes in operating assets and liabilities. The net inflow from changes in operating assets and liabilities was primarily due to a \$72.8 million increase in deferred revenue primarily due to increased subscription sales, as a majority of our customers are invoiced in advance, partially offset by a \$25.9 million increase in accounts receivable and a \$12.8 million increase in deferred commissions.

In 2018, net cash used in operating activities was \$2.6 million, which primarily consisted of our \$73.5 million net loss, adjusted for stock-based compensation expense of \$22.9 million and depreciation and amortization of \$6.2 million, as well as a net cash inflow of \$41.4 million from changes in operating assets and liabilities. The net inflow from changes in operating assets and liabilities was primarily due to a \$64.1 million increase in deferred revenue, primarily due to increased subscription sales, as a majority of our customers are invoiced in advance, partially offset by a \$17.4 million increase in accounts receivable.

In 2017, net cash used in operating activities was \$6.3 million, which primarily consisted of our \$41.0 million net loss, adjusted for stock-based compensation expense of \$7.8 million and depreciation and amortization of \$4.7 million, as well as a net cash inflow of \$23.1 million from changes in operating assets and liabilities. The net inflow from operating assets and liabilities was primarily due to an increase of \$63.4 million in deferred revenue, including the cumulative impact of adopting ASC 606, from increased subscription sales as a majority of our customers are invoiced in advance, partially offset by a \$14.8 million increase in accounts receivable. In addition, deferred commissions increased \$20.1 million, including the cumulative impact of adopting ASC 606.

Investing Activities

From 2018 to 2019, net cash used in investing activities decreased by \$10.2 million, primarily due to a decrease in our purchase, net of sales, of investments of \$100.0 million, partially offset by cash paid for acquisitions of \$74.9 million and capital expenditures for our new corporate headquarters of \$11.4 million.

From 2017 to 2018, net cash used in investing activities increased by \$120.5 million, primarily due to our purchase of short-term investments of commercial paper, U.S. Treasury securities and corporate bonds of \$117.5 million.

Financing Activities

From 2018 to 2019, net cash provided by financing activities decreased by \$230.6 million, primarily due to proceeds from our IPO, net of underwriting discounts and commissions, of \$268.5 million, less payments of offering costs related to our IPO of \$3.9 million in 2018, partially offset by proceeds from the exercise of stock options of \$19.0 million and stock issued in connection with the employee stock purchase plan of \$15.1 million in 2019.

From 2017 to 2018, net cash provided by financing activities increased by \$262.7 million, primarily due to proceeds from our IPO, net of underwriting discounts and commissions, less payments of offering costs related to our IPO.

Contractual Obligations

The following table summarizes our contractual obligations at December 31, 2019:

(in thousands)	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Operating lease commitments	\$ 84,454	\$ 5,308	\$ 13,988	\$ 14,207	\$ 50,951
Non-cancellable purchase obligations	5,693	3,589	2,104	—	—
Total contractual obligations	\$ 90,147	\$ 8,897	\$ 16,092	\$ 14,207	\$ 50,951

Not included in the table above is \$7.2 million of unrecognized tax benefits and \$1.2 million of asset retirement obligations, because the timing of future cash outflows is uncertain.

Off-Balance Sheet Arrangements

At December 31, 2019, we did not have any relationships with unconsolidated organizations or financial partnerships, such as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with U.S. GAAP. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, as well as related disclosures. We evaluate our estimates and assumptions on an ongoing basis. Our estimates are based on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Our actual results could differ from these estimates.

The critical accounting estimates, assumptions and judgments that we believe have the most significant impact on our consolidated financial statements are described below.

Revenue Recognition

We early adopted ASC 606 on January 1, 2017 using the modified retrospective method and applying the guidance to all contracts as of January 1, 2017.

The core principle of ASC 606 is that revenue should be recognized to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve the core principle of ASC 606, we apply the following steps:

- Identify the contract with a customer
- Identify the performance obligations in the contract
- Determine the transaction price

- Allocate the transaction price to the performance obligations in the contract
- Recognize revenue when or as performance obligations are satisfied

In situations where we enter into a contractual arrangement that includes non-standard terms and conditions, such as acceptance provisions and options to purchase additional products and services, as well as contract modifications, we apply judgment in identifying and assessing the impact on revenue recognition.

We generate revenue from subscription arrangements for our software and cloud-based solutions, perpetual licenses, maintenance associated with perpetual licenses and professional services and other revenue.

Subscription Revenue

Our subscription arrangements generally have annual or multi-year contractual terms and allow customers to use our software or cloud solutions, including ongoing software updates and the ability to identify the latest cybersecurity vulnerabilities. Revenue is recognized ratably over the subscription term given the critical utility provided by the ongoing updates that are released throughout the contract period.

Perpetual License and Maintenance Revenue

Our perpetual licenses are generally sold with one or more years of maintenance, which include ongoing software updates and the ongoing ability to identify the latest cybersecurity vulnerabilities. Given the critical utility provided by the ongoing software updates and updated ability to identify network vulnerabilities included in maintenance, we combine the perpetual license and the maintenance into a single performance obligation. Perpetual license arrangements generally contain a material right related to the customer's ability to renew maintenance at a price that is less than the initial license fee. We apply a practical alternative to allocating a portion of the transaction price to the material right performance obligation and estimate a hypothetical transaction price which includes fees for expected maintenance renewals based on the estimated economic life of the perpetual license contracts. We allocate the transaction price between the cybersecurity subscription provided in the initial contract and the material right related to expected contract renewals based on the hypothetical transaction price. We recognize the amount allocated to the combined license and maintenance performance obligation over the initial contractual period, which is generally one year. We recognize the amount allocated to the material right over the expected maintenance renewal period, which begins at the end of the initial contractual term and is generally four years. We have estimated the five-year economic life of perpetual license contracts based on historical contract attrition, expected renewal periods, the lifecycle of our technology and other factors. While we believe that the estimates we have made are reasonable and appropriate, different assumptions and estimates could materially impact our reported financial results.

Professional Services and Other Revenue

Professional services and other revenue is primarily comprised of advisory services and training related to the deployment and optimization of our products. These services do not result in significant customization of our products. Professional services and other revenue is recognized as the services are performed.

Contracts with Multiple Performance Obligations

In cases where our contracts with customers contain multiple performance obligations, the contract transaction price is allocated on a relative standalone selling price basis. We typically determine standalone selling price based on observable selling prices of our products and services.

Variable Consideration

We record revenue from sales at the net sales price, which is the transaction price, including estimates of variable consideration when applicable. Certain of our customers may be entitled to receive credits and in certain circumstances, refunds, if service level commitments are not met. We have not historically experienced significant incidents affecting the ability to meet these service level commitments and any estimated refunds related to these agreements have not been material.

Sales through our channel partner network of distributors and resellers are generally discounted as compared to the price that we would sell to an end user. Revenue for sales through our channel network, which is fixed, is recorded net of any distributor or reseller margin.

Deferred Commissions

Sales commissions, including related incremental fringe benefit costs, are considered to be incremental costs of obtaining a contract, and therefore are deferred over an estimated period of benefit, which ranges between three and four years for subscription arrangements and five years for perpetual license arrangements. We have estimated the period of benefit based on the expected contract term including renewal periods, the lifecycle of our technology and other factors. Sales commissions on contract renewals are capitalized and amortized ratably over the contract term, with the exception of contracts with renewal periods that are one year or less, in which case the incremental costs are expensed as incurred. While we believe that the estimates we have made are reasonable and appropriate, different assumptions and estimates could materially impact our reported financial results.

Stock-Based Compensation

Stock-based compensation expense related to our stock options, restricted stock, restricted stock units, or RSUs, and purchase rights issued under our 2018 Employee Stock Purchase Plan, or the 2018 ESPP, is calculated based on the fair value of the awards granted and is recognized on a straight-line basis over the requisite service period, which is generally two to four years, with the exception of RSUs that include performance-based vesting conditions and are expensed using the accelerated attribution method. We account for forfeitures as they occur.

Estimating the fair value of stock options and purchase rights under the 2018 ESPP using the Black-Scholes option-pricing model requires assumptions as to the fair value of our underlying common stock, the estimated term of the option, the risk free interest rates, the expected volatility of the price of our common stock and the expected dividend yield. The assumptions used to estimate the fair value of the option awards reflect our best estimates. If any of the assumptions change significantly, stock-based compensation for future awards may differ significantly compared with the awards granted previously.

The assumptions and estimates are as follows:

- *Fair Value of Common Stock.* See "Common Stock Valuations" discussion below.
- *Expected Term.* This is the period of time that the options granted are expected to remain unexercised. We employ the simplified method to calculate the average expected term.
- *Volatility.* This is a measure of the amount by which a financial variable, such as a share price, has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. As we do not yet have sufficient history of our own volatility, we have identified several public entities of similar size, complexity and stage of development and estimate volatility based on the volatility of these companies.
- *Risk-Free Interest Rate.* This is the U.S. Treasury rate, having a term that most closely resembles the expected life of the stock option.
- *Dividend Yield.* We have not and do not expect to pay dividends on our common stock.

Common Stock Valuations

Following our IPO, we use the market price of our common stock at the date of grant as the fair value. Prior to our IPO, the lack of an active public market for our common stock required our board of directors to exercise reasonable judgment and consider a number of factors in order to make the best estimate of fair value of our common stock, in accordance with the technical practice-aid issued by the American Institute of Certified Public Accountants Practice Aid entitled *Valuation of Privately-Held Company Equity Securities Issued as Compensation*. Factors considered in connection with estimating the fair value of our common stock underlying our award of restricted stock and stock option awards when performing the fair value calculations with the Black Scholes option-pricing model included:

- The results of independent third-party valuations of our common stock

- Recent arm's length transactions involving the sale or transfer of our common stock
- The rights, preferences and privileges of our Series A and Series B redeemable convertible preferred stock relative to those of our common stock
- Our historical financial results and future financial projections
- The market value of equity interests in substantially similar businesses, which equity interests can be valued through nondiscretionary, objective means
- The lack of marketability of our common stock
- The likelihood of achieving a liquidity event, such as an IPO given prevailing market conditions
- Industry outlook
- General economic outlook including economic growth, inflation and unemployment, interest rate environment and global economic trends

As described above, the exercise price of our stock option awards was determined by our board of directors, with input from management, taking into account the factors described above, using a combination of valuation methodologies with varying weighting applied to each methodology as of the grant date.

Application of these approaches involved the use of estimates, judgment and assumptions that were highly complex and subjective, such as those regarding our expected future revenue, expenses and future cash flows, discount rates, market multiples, the selection of comparable companies and the probability of possible future events. Changes in any or all of these estimates and assumptions or the relationships between those assumptions would have impacted our valuations as of each valuation date and may have had a material impact on the valuation of our common stock.

The fair value of each stock option was estimated on the grant date based on the following assumptions:

	Year Ended December 31,	
	2018	2017
Expected term (in years)	6.3	6.3
Expected volatility	41.3% — 43.3%	45.2% — 47.0%
Risk-free interest rate	2.7% — 2.9%	1.9% — 2.4%
Expected dividend yield	—	—
Expected forfeiture rate	—	—

The fair value of each 2018 ESPP purchase right was estimated on the offering or modification dates based on the following assumptions:

	Year Ended December 31,	
	2019	2018
Expected term (in years)	0.5 — 2.0	0.6 — 2.1
Expected volatility	34.4% — 44.6%	31.9% — 33.5%
Risk-free interest rate	1.5% — 2.5%	2.3% — 2.7%
Expected dividend yield	—	—

Business Combinations

We account for business combinations by recognizing the fair value of acquired assets and liabilities. The excess purchase consideration over the fair value of acquired assets and liabilities is recorded as goodwill. When determining the fair value of assets acquired and liabilities assumed, we make estimates and assumptions, especially with respect to intangible assets. Estimates in valuing certain identifiable intangible assets require significant judgment and include, but are not limited to, expected long-term market growth, future expected operating expenses, costs of capital, and appropriate discount rates. Our estimate of fair value is based upon assumptions we believe to be reasonable, but which are inherently uncertain and, as a result, actual results may differ from estimates. During the measurement period, we

may make adjustments to the fair value of assets acquired and liabilities assumed, with offsetting adjustments to goodwill. Any adjustments made after the measurement period will be reflected in the consolidated statements of operations. Acquisition-related transaction costs are expensed as incurred.

Income Taxes

We are subject to federal, state and local taxes in the United States as well as numerous international jurisdictions. These foreign jurisdictions have different statutory tax rates than the United States. Earnings generated by our international entities are related to transfer pricing requirements as applicable under local jurisdiction tax laws.

We record a provision for income taxes under the asset and liability method, which requires recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities, net operating loss carryforwards and tax credit carryforwards. Deferred tax assets and liabilities are measured using the tax rates that are expected to apply to taxable income for the years in which those tax assets and liabilities are expected to be realized or settled. A valuation allowance is provided if it is more likely than not that some or all of the deferred tax assets will not be realized. We have valuation allowances in all jurisdictions against deferred tax assets net of deferred tax liabilities that will reverse and provide a source of taxable income. Our evaluation of valuation allowances could change in the future and the impact could have a material impact on our financial statements.

We recognize tax benefits from an uncertain tax position if it is more likely than not to be sustained upon audit by the relevant taxing authority. Interest and penalties associated with such uncertain tax positions are classified as a component of income tax expense.

In December 2019, subsequent to our acquisition of Indegy Ltd. we transferred the acquired Indegy intellectual property through an intercompany transaction. The valuation of Indegy's intellectual property for tax purposes resulted in \$6.3 million of current tax expense and \$4.2 million of deferred tax expense in Israel. The valuation of the intellectual property for tax purposes required significant judgment and assumptions with respect to forecasted operating results and discount rates.

The Tax Cuts and Jobs Act, or the 2017 Tax Act, was enacted into law, which contains several significant changes to how corporations are taxed in the United States, including the reduction of the corporate income tax rate from 35% to 21% effective January 1, 2018. The new legislation also includes a variety of other changes, such as a one-time repatriation tax on accumulated foreign earnings, or transition tax, acceleration of business asset expensing and reduction in the amount of executive pay that could qualify as a tax deduction.

The 2017 Tax Act also included international tax provisions that will affect the Company, including the favorable tax regime for taxing foreign derived intangible income. Additional international provisions include the global intangible low taxed income, or GILTI, regime and the base erosion anti-abuse tax.

Depending on the jurisdiction, distributions of earnings could be subject to withholding taxes at rates applicable to the distributing jurisdiction. As we intend to continue to reinvest the earnings of foreign subsidiaries indefinitely, we have not provided for a U.S. income tax liability and foreign withholding taxes on undistributed foreign earnings of foreign subsidiaries.

Recently Issued Accounting Pronouncements

Refer to Note 1 to our consolidated financial statements in this Annual Report on Form 10-K for more information regarding recently issued accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We are exposed to market risks in the ordinary course of our business, including interest rate, foreign currency exchange and inflation risks.

Interest Rate Risk

At December 31, 2019, we had cash and cash equivalents of \$74.4 million, consisting of cash deposits, money market funds and commercial paper. We also had short-term investments of \$137.9 million, consisting of commercial paper, U.S. Treasury securities and corporate bonds. Our investments are carried at their fair market value with cumulative unrealized gains or losses recorded as a component of accumulated other comprehensive income within stockholders' equity. The primary objectives of our investment activities are the preservation of capital, the fulfillment of liquidity needs and the fiduciary control of cash and investments. We do not enter into investments for trading or speculative purposes. Interest-earning instruments carry a degree of interest rate risk; however, a hypothetical 10% change in interest rates during any of the periods presented would not have had a material impact on our financial statements.

We have not had any borrowings outstanding under the revolving credit facility since it was established in May 2017. Any borrowings under the revolving credit facility would bear interest at a variable rate tied to the prime rate or the LIBOR rate. We do not have any other long-term debt or financial liabilities with floating interest rates that would subject us to interest rate fluctuations.

On January 9, 2020, we entered into a \$2.5 million standby letter of credit ("Letter of Credit") for the security deposit on our new headquarters lease. The Letter of Credit bears interest at 2% per annum and expires one year from the issue date, with automatic renewals for additional one year terms until the final expiration date of February 2032. The Letter of Credit reduces the amount available for borrowing under our revolving credit facility.

Foreign Currency Exchange Risk

Substantially all of our sales contracts are denominated in U.S. dollars, with a limited number of contracts denominated in foreign currencies. A portion of our operating expenses, including foreign denominated leases, are incurred outside the United States, denominated in foreign currencies and subject to fluctuations due to changes in foreign currency exchange rates, particularly changes in the Euro, British Pound and Australian dollar. Additionally, fluctuations in foreign currency exchange rates may cause us to recognize remeasurement and transaction gains (losses) in our consolidated statements of operations. As the impact of foreign currency exchange rates has not been material to our historical operating results, we have not entered into derivative or hedging transactions, but we may do so in the future if our exposure to foreign currency becomes more significant.

Inflation Risk

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

Item 8. Financial Statements and Supplementary Data

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of Tenable Holdings, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Tenable Holdings, Inc. (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the financial statement schedule listed in the Index at item 15(a)(2) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 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 U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 28, 2020 expressed an unqualified opinion thereon.

Adoption of ASU No. 2016-02

As discussed in Note 1 to the consolidated financial statements, the Company changed its method for accounting for leases in 2018 due to the adoption of Accounting Standards Update (ASU) No. 2016-02, *Leases* (Topic 842), and the related amendments.

Basis for Opinion

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) 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 matters below, providing a separate opinion on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue Recognition - Identification and Evaluation of Contracts with Non-Standard Terms and Conditions
Description of the Matter As described in Note 1 to the consolidated financial statements, management enters into certain contracts with customers, including software subscription arrangements and perpetual licenses with related maintenance, with non-standard terms and conditions.

The principal consideration for our determination that performing procedures relating to the identification and evaluation of non-standard terms and conditions in contracts is a critical audit matter is the significant amount of judgment required by management in identifying and evaluating non-standard terms and conditions and the impact on the amount and timing of revenue recognition. This in turn led to a high degree of auditor judgment and significant audit effort in performing our audit procedures to evaluate whether non-standard terms and conditions in contracts were appropriately identified and evaluated by management.

How We Addressed the Matter in Our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process for identifying and evaluating contracts with non-standard terms and conditions. These procedures also included, among others, on a sample basis (i) testing the completeness and accuracy of management's identification of contracts with non-standard terms and conditions and (ii) testing management's determination of the impact of non-standard terms and conditions on the amount and timing of revenue recognition.

Valuation of Acquired Intangible Asset

Description of the Matter As described in Note 5 to the consolidated financial statements, during the year ended December 31, 2019, the Company completed the acquisition of Indegy Ltd. ("Indegy") for \$80.1 million in cash. The Company's accounting for the acquisition included determining the fair value of the acquired intangible assets including developed technology of \$15.5 million.

Auditing the accounting for the acquired intangible asset of Indegy involved complex auditor judgment due to the estimation required in management's determination of the fair value. The estimation was significant primarily due to the sensitivity of the fair value of the developed technology to the underlying assumptions, including the discount rate, projected revenue growth rates, the obsolescence factor, and projected profit margins. These significant assumptions are forward-looking and could be affected by future economic and market conditions.

How We Addressed the Matter in Our Audit We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's process for accounting for the acquired intangible asset. For example, we tested controls over management's review of the valuation model and significant assumptions used in the valuation as well as controls over the completeness and accuracy of the data used in the model and assumptions.

To test the fair value of the acquired developed technology, our audit procedures included, among others, evaluating the Company's use of valuation methodologies, evaluating the significant assumptions, evaluating the prospective financial information and testing the completeness and accuracy of underlying data. We involved our valuation specialists to assist in testing certain significant assumptions used to value the acquired intangible asset. For example, we compared the significant assumptions to current industry and market trends, historical results of the acquired business and to other relevant factors. We also performed sensitivity analyses of the significant assumptions to evaluate the change in the fair value resulting from changes in the assumptions.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2014

Tysons, Virginia

February 28, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors of Tenable Holdings, Inc.

Opinion on Internal Control Over Financial Reporting

We have audited Tenable Holdings, Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Tenable Holdings, Inc. (the Company) maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

As indicated in the accompanying Management's Report on Internal Control Over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Indegy Ltd. acquired on December 2, 2019, which is included in the 2019 consolidated financial statements of Tenable Holdings, Inc. and constituted less than 2% of total assets as of December 31, 2019 and less than 1% of total revenue and operating expenses for the year then ended. Our audit of internal control over financial reporting of Tenable Holdings, Inc. also did not include an evaluation of the internal control over financial reporting of Indegy Ltd.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Tenable Holdings, Inc. as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the financial statement schedule listed in the Index at item 15(a)(2) (collectively referred to as the "consolidated financial statements") and our report dated February 28, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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 (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ Ernst & Young LLP
Tysons, Virginia
February 28, 2020

TENABLE HOLDINGS, INC.
CONSOLIDATED BALANCE SHEETS

(in thousands, except per share data)	December 31,	
	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 74,363	\$ 165,116
Short-term investments	137,904	118,119
Accounts receivable (net of allowance for doubtful accounts of \$764 and \$188 at December 31, 2019 and 2018, respectively)	94,827	68,261
Deferred commissions	28,499	23,272
Prepaid expenses and other current assets	27,369	22,020
Total current assets	362,962	396,788
Property and equipment, net	26,847	11,348
Deferred commissions (net of current portion)	43,766	36,162
Operating lease right-of-use assets	42,847	8,504
Intangible assets, net	15,508	427
Goodwill	54,138	265
Other assets	12,544	7,118
Total assets	\$ 558,612	\$ 460,612
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 1,732	\$ 171
Accrued expenses	8,436	5,554
Accrued compensation	36,634	29,594
Deferred revenue	274,348	213,644
Operating lease liabilities	5,209	4,262
Other current liabilities	1,284	1,079
Total current liabilities	327,643	254,304
Deferred revenue (net of current portion)	88,779	76,259
Operating lease liabilities (net of current portion)	40,663	6,055
Other liabilities	2,622	2,231
Total liabilities	459,707	338,849
Stockholders' equity:		
Common stock (par value: \$0.01; 500,000 shares authorized, 98,587 and 93,126 shares issued and outstanding at December 31, 2019 and 2018, respectively)	986	931
Additional paid-in capital	662,990	586,940
Accumulated other comprehensive income	50	—
Accumulated deficit	(565,121)	(466,108)
Total stockholders' equity	98,905	121,763
Total liabilities and stockholders' equity	\$ 558,612	\$ 460,612

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

TENABLE HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except per share data)	Year Ended December 31,		
	2019	2018	2017
Revenue	\$ 354,586	\$ 267,360	\$ 187,727
Cost of revenue	60,818	43,167	25,588
Gross profit	293,768	224,193	162,139
Operating expenses:			
Sales and marketing	228,035	173,344	116,299
Research and development	87,064	76,698	57,673
General and administrative	69,468	46,732	28,927
Total operating expenses	384,567	296,774	202,899
Loss from operations	(90,799)	(72,581)	(40,760)
Interest income (expense), net	5,830	2,355	(75)
Other expense, net	(680)	(931)	(16)
Loss before income taxes	(85,649)	(71,157)	(40,851)
Provision for income taxes	13,364	2,364	171
Net loss	(99,013)	(73,521)	(41,022)
Accretion of Series A and B redeemable convertible preferred stock	—	(434)	(763)
Net loss attributable to common stockholders	\$ (99,013)	\$ (73,955)	\$ (41,785)
Net loss per share attributable to common stockholders, basic and diluted	\$ (1.03)	\$ (1.38)	\$ (1.88)
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted	96,014	53,669	22,211

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

TENABLE HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Net loss	\$ (99,013)	\$ (73,521)	\$ (41,022)
Other comprehensive income, net of tax:			
Unrealized gains on available-for-sale securities	50	—	—
Other comprehensive income	50	—	—
Comprehensive loss	\$ (98,963)	\$ (73,521)	\$ (41,022)

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

TENABLE HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE
PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)

(in thousands)	Redeemable Convertible Preferred Stock				Common Stock				Additional	Accumulated	Total	
	Series A		Series B		Shares		Amount		Paid-in	Other	Accumulated	Stockholders'
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Income	Deficit	Equity		
Balance at December 31, 2016	15,848	\$ 49,913	39,538	\$ 227,059	21,165	\$ 212	\$ 11,017	\$ —	\$ (313,147)	\$ (301,918)		
Cumulative effect of adoptions of new accounting standards	—	—	—	—	—	—	61	—	(38,418)	(38,357)		
Accretion of Series A and B redeemable convertible preferred stock	—	22	—	741	—	—	(763)	—	—	(763)		
Issuance of restricted stock award	—	—	—	—	1,583	16	(16)	—	—	—		
Exercise of stock options	—	—	—	—	1,870	19	3,001	—	—	3,020		
Repurchase of common stock	—	—	—	—	(146)	(1)	(384)	—	—	(385)		
Stock-based compensation	—	—	—	—	—	—	7,760	—	—	7,760		
Net loss	—	—	—	—	—	—	—	—	(41,022)	(41,022)		
Balance at December 31, 2017	15,848	49,935	39,538	227,800	24,472	246	20,676	—	(392,587)	(371,665)		
Accretion of Series A and B redeemable convertible preferred stock	—	13	—	421	—	—	(434)	—	—	(434)		
Exercise of stock options	—	—	—	—	740	7	1,661	—	—	1,668		
Repurchase of common stock	—	—	—	—	(7)	(1)	(74)	—	—	(75)		
Stock-based compensation	—	—	—	—	—	—	23,022	—	—	23,022		
Issuance of common stock in connection with initial public offering, net of underwriting discounts and commissions and other offering expenses	—	—	—	—	12,535	125	264,474	—	—	264,599		
Conversion of redeemable convertible preferred stock to common stock upon initial public offering	(15,848)	(49,948)	(39,538)	(228,221)	55,386	554	277,615	—	—	278,169		
Net loss	—	—	—	—	—	—	—	—	(73,521)	(73,521)		
Balance at December 31, 2018	—	—	—	—	93,126	931	586,940	—	(466,108)	121,763		
Exercise of stock options	—	—	—	—	4,205	42	19,006	—	—	19,048		
Vesting of restricted stock units	—	—	—	—	479	5	(5)	—	—	—		
Issuance of common stock under employee stock purchase plan	—	—	—	—	777	8	15,121	—	—	15,129		
Stock-based compensation	—	—	—	—	—	—	41,928	—	—	41,928		
Other comprehensive income	—	—	—	—	—	—	—	50	—	50		
Net loss	—	—	—	—	—	—	—	—	(99,013)	(99,013)		
Balance at December 31, 2019	—	\$ —	—	\$ —	98,587	\$ 986	\$ 662,990	\$ 50	\$ (565,121)	\$ 98,905		

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

TENABLE HOLDINGS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net loss	\$ (99,013)	\$ (73,521)	\$ (41,022)
Adjustments to reconcile net loss to net cash used in operating activities:			
Deferred income taxes	4,243	—	(873)
Depreciation and amortization	6,880	6,192	4,692
Stock-based compensation	41,610	22,875	7,760
Other	(784)	533	125
Changes in operating assets and liabilities:			
Accounts receivable	(25,941)	(17,408)	(14,769)
Prepaid expenses and other current assets	(5,188)	(6,105)	(8,345)
Deferred commissions	(12,831)	(9,258)	(20,058)
Other assets	(3,336)	(1,876)	(3,267)
Accounts payable and accrued expenses	4,244	294	1,922
Accrued compensation	6,269	11,112	4,298
Deferred revenue	72,799	64,085	63,404
Other current liabilities	255	408	421
Other liabilities	49	110	(554)
Net cash used in operating activities	(10,744)	(2,559)	(6,266)
Cash flows from investing activities:			
Purchases of property and equipment	(20,674)	(5,733)	(2,755)
Purchases of investments	(242,059)	(117,488)	—
Sales and maturities of investments	224,594	—	—
Business combination, net of cash acquired	(74,911)	—	—
Net cash used in investing activities	(113,050)	(123,221)	(2,755)
Cash flows from financing activities:			
Proceeds from initial public offering, net of underwriting discounts and commissions	—	268,531	—
Payments of costs related to initial public offering	—	(3,932)	—
Principal payments under finance lease obligations	(16)	(1,443)	(306)
Credit facility issuance costs	—	—	(238)
Proceeds from stock issued in connection with the employee stock purchase plan	15,129	—	—
Proceeds from the exercise of stock options	19,048	1,668	3,020
Repurchases of common stock	—	(75)	(385)
Net cash provided by financing activities	34,161	264,749	2,091
Effect of exchange rate changes on cash and cash equivalents and restricted cash	(1,080)	(1,063)	(68)
Net (decrease) increase in cash and cash equivalents and restricted cash	(90,713)	137,906	(6,998)
Cash and cash equivalents and restricted cash at beginning of year	165,378	27,472	34,470
Cash and cash equivalents and restricted cash at end of year	\$ 74,665	\$ 165,378	\$ 27,472
Supplemental disclosure of cash flow information:			
Cash paid for interest	\$ 96	\$ 111	\$ 79
Cash paid for income taxes	8,530	1,207	642

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

TENABLE HOLDINGS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Business and Summary of Significant Accounting Policies

Business Description

Tenable Holdings, Inc. (the "Company," "we," "us," or "our") is a provider of Cyber Exposure solutions, which is a discipline for managing and measuring cybersecurity risk in the digital era. Our enterprise software platform enables broad visibility into an organization's cyber exposure across the modern attack surface and deep insights that help organizations translate technical data into business insights to understand and reduce their cybersecurity risk.

Basis of Presentation

The accompanying consolidated financial statements include the accounts of Tenable Holdings, Inc. and our wholly owned subsidiaries and have been prepared in conformity with United States generally accepted accounting principles ("GAAP"). All intercompany accounts and transactions have been eliminated in consolidation.

Initial Public Offering

On July 30, 2018, we completed our initial public offering ("IPO"), in which we issued and sold 12,535,000 shares of common stock at a price to the public of \$23.00 per share, including 1,635,000 shares of common stock purchased by our underwriters from the full exercise of their over-allotment option. All of the shares sold in the IPO were sold by the Company. We received net proceeds of \$264.6 million after deducting underwriting discounts and commissions and other offering expenses.

Upon the completion of our IPO, all 15,847,500 shares of our Series A Redeemable Convertible Preferred Stock ("Series A") and 39,538,354 shares of our Series B Redeemable Convertible Preferred Stock ("Series B") automatically converted into an aggregate of 55,385,854 shares of our common stock. Our Amended and Restated Certificate of Incorporation adopted in connection with the IPO authorizes a total of 500,000,000 shares of common stock and 10,000,000 shares of preferred stock.

Use of Estimates

The preparation of consolidated 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. These estimates include, but are not limited to, the determination of the estimated economic life of perpetual licenses for revenue recognition, the estimated period of benefit for deferred commissions, useful lives of long-lived assets, the fair value of acquired intangible assets, the valuation of stock-based compensation, including the estimated underlying fair value of our common stock prior to our IPO, the incremental borrowing rate for operating leases, and the valuation of deferred tax assets. We base these estimates on historical experience and on various other assumptions that we believe to be reasonable. Actual results could differ significantly from these estimates.

Foreign Currency

The functional currency for all of our foreign subsidiaries is the U.S. dollar. Assets and liabilities denominated in other currencies are remeasured into U.S. dollars at current exchange rates for monetary assets and liabilities and at historical exchange rates for non-monetary assets and liabilities. We bill our customers in U.S. dollars. Expenses incurred in non U.S. dollar currencies are remeasured into U.S. dollars when incurred. Remeasurement losses in currencies other than the functional currency were \$1.1 million, \$1.0 million and \$0.1 million in 2019, 2018 and 2017, respectively, and are included as a component of other expense, net in the consolidated statements of operations.

Revenue Recognition

We recognize revenue in order to depict the transfer of promised goods or services to customers in an amount that reflects the consideration we expect to be entitled in exchange for those goods or services. To achieve this, we apply the following steps:

- Identify the contract with a customer
- Identify the performance obligations in the contract
- Determine the transaction price
- Allocate the transaction price to the performance obligations in the contract
- Recognize revenue when or as performance obligations are satisfied

In situations where we enter into a contractual arrangement that includes non-standard terms and conditions, such as acceptance provisions or options to purchase additional products and services, as well as contract modifications, we apply judgment in identifying and assessing the impact on revenue recognition.

We generate revenue from subscription arrangements for software and cloud-based solutions, perpetual licenses, maintenance associated with perpetual licenses, and professional services and other revenue. We begin to recognize revenue when control of our software or services is transferred to the customer, which for sales made through distributors is concurrent with the transfer to the end user.

The following table presents a summary of revenue:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Subscription revenue	\$ 290,549	\$ 205,827	\$ 132,873
Perpetual license and maintenance revenue	54,173	54,622	50,337
Professional services and other revenue	9,864	6,911	4,517
Revenue	<u>\$ 354,586</u>	<u>\$ 267,360</u>	<u>\$ 187,727</u>

Subscription Revenue

Subscription arrangements generally have annual or multi-year contractual terms and allow customers to use our software or cloud solutions, including ongoing software updates and the ability to identify the latest cybersecurity vulnerabilities. Revenue is recognized ratably over the subscription term given the critical utility provided by the ongoing updates that are released throughout the contract period.

Perpetual License and Maintenance Revenue

Our perpetual licenses are generally sold with one or more years of maintenance, which include ongoing software updates and the ongoing ability to identify the latest cybersecurity vulnerabilities. Given the critical utility provided by the ongoing software updates and updated ability to identify network vulnerabilities included in maintenance, we combine the perpetual license and the maintenance into a single performance obligation. Perpetual license arrangements generally contain a material right related to the customer's ability to renew maintenance at a price that is less than the initial license fee. We apply a practical alternative to allocating a portion of the transaction price to the material right performance obligation and estimate a hypothetical transaction price which includes fees for expected maintenance renewals based on the estimated economic life of the perpetual license contracts. We allocate the transaction price between the cybersecurity subscription provided in the initial contract and the material right related to expected contract renewals based on the hypothetical transaction price. We recognize the amount allocated to the combined license and maintenance performance obligation over the initial contractual period, which is generally one year. We recognize the amount allocated to the material right over the expected maintenance renewal period, which begins at the end of the initial contractual term and is generally four years. We have estimated the five-year economic life of perpetual license contracts based on historical contract attrition, expected renewal periods, the lifecycle of our technology and other factors. While we

believe that the estimates we have made are reasonable and appropriate, different assumptions and estimates could materially impact our reported financial results.

Professional Services and Other Revenue

Professional services and other revenue is primarily comprised of advisory services and training related to the deployment and optimization of our products. These services do not result in significant customization of our products. Professional services and other revenue is recognized as the services are performed.

Contracts with Multiple Performance Obligations

In cases where our contracts with customers contain multiple performance obligations, the contract transaction price is allocated on a relative standalone selling price basis. We typically determine standalone selling price based on observable selling prices of our products and services.

Variable Consideration

We record revenue from sales at the net sales price, which is the transaction price, including estimates of variable consideration when applicable. Certain of our customers may be entitled to receive credits and in certain circumstances, refunds, if service level commitments are not met. We have not historically experienced significant incidents affecting the ability to meet these service level commitments and any estimated refunds related to these agreements have not been material.

Sales through our channel network of distributors and resellers are generally discounted as compared to the price that we would sell to an end user. Revenue for sales through our channel network is recorded net of any distributor or reseller margin.

Concentrations

We sell our products and services through a channel network of distributors and resellers, along with our own sales teams. We derived 90%, 88% and 83% of revenue through our channel network in 2019, 2018 and 2017, respectively. One of our distributors accounted for 43%, 46% and 45% of revenue in 2019, 2018 and 2017, respectively. That same distributor accounted for 40% and 46% of accounts receivable at December 31, 2019 and 2018, respectively.

Contract Balances

We generally bill our customers in advance and accounts receivable are recorded when we have the right to invoice the customer. Contract liabilities consist of deferred revenue and include customer billings and payments received in advance of performance under the contract. In 2019 and 2018, we recognized revenue of \$214.0 million and \$154.9 million, respectively, that was included in the deferred revenue balance at the beginning of each of the respective periods.

Remaining Performance Obligations

At December 31, 2019, the future estimated revenue related to unsatisfied performance obligations was \$367.3 million, with approximately 75% expected to be recognized as revenue over the succeeding twelve months, and the remainder expected to be recognized over the four years thereafter.

Cash and Cash Equivalents

We consider all highly liquid financial instruments with an original maturity of three months or less when purchased to be cash equivalents.

At December 31, 2019, cash and cash equivalents included \$0.4 million of restricted cash, which is related to collateral for a lease and credit card deposits. Cash and cash equivalents did not include any restricted cash at December 31, 2018. At December 31, 2019 and 2018, cash and cash equivalents excluded \$0.3 million of restricted cash, which is

related to an account established as collateral for a lease arrangement and was included in other assets on the consolidated balance sheets.

Fair Value of Financial Instruments

Fair value is defined as the price that would be received from selling an asset, or paid to transfer a liability, in an orderly transaction between market participants at the measurement date. We apply fair value accounting for all financial assets and liabilities that are recognized or disclosed at fair value in the financial statements on a recurring basis. We measure cash and cash equivalents and short-term investments at fair value using a fair value hierarchy of inputs. We approximate fair value by using the carrying amounts for accounts receivable, accounts payable and accrued expenses due to their short-term nature.

Investments

We currently invest in commercial paper, corporate bonds, and U.S. treasury and agency obligations. Our investments are classified as available-for-sale and recorded at fair value, with unrealized gains and losses reported in accumulated other comprehensive loss within stockholders' equity (deficit). We review our investment portfolio to determine whether investments have indicators of possible impairment.

Accounts Receivable

Accounts receivable are recorded at the invoiced amount, less an allowance for doubtful accounts, and do not bear interest. We maintain an allowance for doubtful accounts at an amount estimated to be sufficient to cover the risk of collecting less than full payment of the receivables. At each balance sheet date, we evaluate our receivables and assess the allowance for doubtful accounts based on specific customer collection issues and historical write-off trends.

Deferred Commissions

Sales commissions, including related incremental fringe benefit costs, are considered to be incremental costs of obtaining a contract. Sales commissions on initial sales are not commensurate with sales commissions on contract renewals and therefore are recognized over an estimated period of benefit, which ranges between three and four years for subscription arrangements and five years for perpetual license arrangements. We estimated the period of benefit based on the expected contract term including renewal periods, the lifecycle of our technology, and other factors. Sales commissions on contract renewals are capitalized and amortized ratably over the contract term, with the exception of contracts with renewal periods that are one year or less, in which case the incremental costs are expensed as incurred.

The following summarizes the activity of deferred incremental costs of obtaining a contract:

(in thousands)	Year Ended December 31,	
	2019	2018
Beginning balance	\$ 59,434	\$ 50,176
Capitalization of contract acquisition costs	40,172	29,075
Amortization of deferred contract acquisition costs	(27,341)	(19,817)
Ending balance	\$ 72,265	\$ 59,434

Amortization of deferred contract acquisition costs is included in sales and marketing expense in the consolidated statements of operations.

Property and Equipment, net

Property and equipment, net is stated at historical cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets: three years for computer software and equipment and five years for furniture and fixtures. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful lives of the assets or the terms of the respective leases. Property and equipment,

net includes right-of-use assets acquired under finance leases. Amortization of assets acquired under finance leases is included in depreciation expense. Repairs and maintenance costs are expensed as incurred.

Leases

In December 2018, we early adopted ASC Topic 842, *Leases* ("ASC 842") as of January 1, 2018 using the modified retrospective method applying the transition provisions at the beginning of the period of adoption, rather than at the beginning of the earliest comparative period presented in these financial statements. We elected the package of practical expedients as permitted under the transition guidance, which allowed us to not reassess whether arrangements contain leases, not reassess lease classification, and not reassess initial direct costs.

The most significant impact of adopting ASC 842 was the recognition of right-of-use ("ROU") assets and lease liabilities for operating leases of \$10.1 million and \$12.3 million, respectively on January 1, 2018, which included reclassifying prepaid rent and deferred rent as a component of the ROU asset. Additionally, we concluded that we did not control the building under construction for our new corporate headquarters, and upon adoption, derecognized \$2.3 million of construction-in-progress and a \$1.8 million construction financing obligation on January 1, 2018 and recognized a \$0.5 million deposit. Our accounting for finance leases (formerly referred to as capital leases prior to the adoption of ASC 842) remained substantially unchanged.

We determine if an arrangement contains a lease and the classification of that lease, if applicable, at inception. We have elected to not recognize a lease liability or ROU asset for short-term leases (leases with a term of twelve months or less). For contracts with lease and non-lease components, we have elected to not allocate the contract consideration, and account for the lease and non-lease components as a single lease component. Additionally, we enter into arrangements to use shared office spaces and other facilities, and have determined that these arrangements do not contain leases as we do not have the right to use an identified asset. Operating leases are included in operating lease ROU assets, operating lease liabilities and operating lease liabilities (net of current portion) in our consolidated balance sheets. Finance leases are included in property and equipment, other current liabilities and other liabilities in our consolidated balance sheets.

ROU assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments under the lease. Operating lease ROU assets and liabilities are recognized at the lease commencement date based on the present value of lease payments over the lease term. The implicit rate within our operating leases are generally not determinable and we use our incremental borrowing rate at the lease commencement date to determine the present value of lease payments. The determination of our incremental borrowing rate requires judgment. We determine our incremental borrowing rate for each lease using our current borrowing rate, adjusted for various factors including level of collateralization, term and currency to align with the terms of the lease. The operating lease ROU asset also includes any lease prepayments, offset by lease incentives. Certain of our leases include options to extend or terminate the lease. An option to extend the lease is considered in connection with determining the ROU asset and lease liability when it is reasonably certain we will exercise that option. An option to terminate is considered unless it is reasonably certain we will not exercise the option.

Lease expense for lease payments is recognized on a straight-line basis over the term of the lease.

Impairment of Long-Lived Assets

We evaluate our long-lived assets for impairment whenever events or changes in circumstance indicate that the carrying amount may not be fully recoverable. Recoverability of the long-lived assets is measured by a comparison of the carrying amount of the assets to future undiscounted net cash flows expected to be generated by the assets. If such assets are considered to be impaired, the impairment to be recognized is measured as the excess of the carrying amount over the fair value. There was no impairment of long-lived assets in 2019, 2018 and 2017.

Business Combinations

We account for business combinations by recognizing the fair value of acquired assets and liabilities. The excess purchase consideration over the fair value of acquired assets and liabilities is recorded as goodwill. When determining the fair value of assets acquired and liabilities assumed, we make estimates and assumptions, especially with respect to

intangible assets. Estimates in valuing certain identifiable intangible assets include, but are not limited to, projected revenue growth rates, future expected operating expenses, the obsolescence factor and appropriate discount rate. Our estimate of fair value is based upon assumptions we believe to be reasonable, but which are inherently uncertain and, as a result, actual results may differ from estimates. During the measurement period, we may make adjustments to the fair value of assets acquired and liabilities assumed, with offsetting adjustments to goodwill. Any adjustments made after the measurement period will be reflected in the consolidated statements of operations. Acquisition-related transaction costs are expensed as incurred.

Goodwill

The excess purchase consideration over the fair value of acquired assets and liabilities is recorded as goodwill. Goodwill is assessed for impairment annually, or more often if there are indications of impairment. During the periods presented, there were no indications of impairment.

Advertising

Advertising costs are expensed as they are incurred. We incurred advertising costs of \$5.3 million, \$3.3 million and \$3.2 million in 2019, 2018 and 2017, respectively, which was included in sales and marketing expense in the consolidated statements of operations.

Software Development Costs

Research and development costs to develop software to be sold, leased or marketed are expensed as incurred up to the point of technological feasibility for the related software product. We have not capitalized development costs for software to be sold, leased or marketed to date, as the software development process is essentially completed concurrent with the establishment of technological feasibility. As such, these costs are expensed as incurred and recognized in research and development costs in the consolidated statements of operations.

Software developed for internal use, with no substantive plans to market such software at the time of development, are capitalized and included in property and equipment, net in the consolidated balance sheets. Costs incurred during the preliminary planning and evaluation and post implementation stages of the project are expensed as incurred. Costs incurred during the application development stage of the project are capitalized. In 2019 and 2018, we capitalized \$4.2 million and \$2.4 million, respectively, of development costs related to internal use software. In 2017, capitalized costs related to software developed for internal use were immaterial.

Stock-Based Compensation

Stock-based compensation expense related to our stock options, restricted stock, restricted stock units ("RSUs") and purchase rights issued under our 2018 Employee Stock Purchase Plan ("2018 ESPP") is calculated based on the fair value of the awards granted and is recognized on a straight-line basis over the requisite service period, which is generally two to four years, with the exception of RSUs that include performance-based vesting conditions and are expensed using the accelerated attribution method. We account for forfeitures as they occur.

The fair value of stock options and 2018 ESPP purchase rights is estimated on the grant date using the Black-Scholes option pricing model, which requires us to make assumptions and judgments, including the expected term, expected volatility, and risk-free interest rates. Prior to our IPO, we estimated the fair value of our common stock at the date of grant. Following our IPO, we use the market price of our common stock at the date of grant.

Net Loss per Share

We calculate basic and diluted net loss per share attributable to common stockholders in conformity with the two-class method required for participating securities. Under the two-class method, the net loss attributable to common stockholders is not allocated to the redeemable convertible preferred stock as the holders of our redeemable convertible preferred stock do not have a contractual obligation to share in losses.

Under the two-class method, basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period. Net loss attributable to common stockholders is calculated by adjusting net loss by the current period accretion of redeemable convertible preferred stock.

Upon the completion of our IPO, all of our Series A and Series B redeemable convertible preferred stock automatically converted into shares of our common stock.

Diluted earnings per share attributable to common stockholders is computed by giving effect to all potentially dilutive common stock equivalents in the period, including stock options, unvested restricted shares, redeemable convertible preferred stock and shares to be issued under our 2018 ESPP. As we have reported losses for all periods presented, all potentially dilutive securities have been excluded from the calculation of diluted net loss per share attributable to common stockholders as their effect would be antidilutive.

Segment Information

We operate as one operating segment as our chief executive officer, who is our chief operating decision maker, reviews financial information on a consolidated basis for purposes of making operating decisions, allocating resources, and evaluating financial performance.

Income Taxes

Income taxes are accounted for under the asset and liability method. This method requires recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between the financial statement carrying amounts and the tax basis of existing assets and liabilities, net operating loss carryforwards, and tax credit carryforwards. A valuation allowance is provided if it is more likely than not that some or all of the deferred tax assets will not be realized.

We recognize tax benefits from an uncertain tax position if it is more likely than not to be sustained upon audit by the relevant taxing authority. Interest and penalties associated with such uncertain tax positions are classified as a component of income tax expense.

Recently Issued Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-13 - *Financial Instruments-Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. This ASU amended guidance on reporting credit losses for assets held at amortized cost basis and available-for-sale debt securities to require that credit losses on available-for-sale debt securities be presented as an allowance rather than as a write-down. The measurement of credit losses for newly recognized financial assets and subsequent changes in the allowance for credit losses are recorded in the statements of operations. This guidance was effective for us beginning January 1, 2020, and will be adopted using the modified-retrospective method. We do not expect the impact of adopting this standard to be material for our consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-15 — *Intangibles — Goodwill and Other — Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*. Under this ASU, implementation costs related to a cloud computing arrangement that is a service contract will be capitalized consistent with the requirements for capitalizing internal-use software development costs. The capitalized implementation costs are subsequently expensed over the term of the hosting arrangement. This guidance was effective for us beginning January 1, 2020, and will be adopted on a prospective basis. We do not expect the impact of adopting this standard to be material for our consolidated financial statements.

2. Cash and Cash Equivalents and Short-Term Investments

The following tables summarize the amortized cost, unrealized gain and loss and estimated fair value of cash equivalents and short-term investments:

December 31, 2019				
(in thousands)	Amortized Cost	Unrealized Gain	Unrealized Loss	Estimated Fair Value
Cash equivalents:				
Money market funds	\$ 13,588	\$ —	\$ —	\$ 13,588
Commercial paper	8,987	—	—	8,987
Total cash equivalents	<u>\$ 22,575</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 22,575</u>
Short-term investments:				
Commercial paper	\$ 61,371	\$ —	\$ —	\$ 61,371
Corporate bonds	23,856	14	(1)	23,869
U.S. Treasury and agency obligations	52,627	38	(1)	52,664
Total short-term investments	<u>\$ 137,854</u>	<u>\$ 52</u>	<u>\$ (2)</u>	<u>\$ 137,904</u>

December 31, 2018				
(in thousands)	Amortized Cost	Unrealized Gain	Unrealized Loss	Estimated Fair Value
Cash equivalents:				
Money market funds	\$ 38,022	\$ —	\$ —	\$ 38,022
Total cash equivalents	<u>\$ 38,022</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 38,022</u>
Short-term investments:				
Commercial paper	\$ 79,634	\$ —	\$ —	\$ 79,634
Corporate bonds	16,119	—	—	16,119
U.S. Treasury and agency obligations	22,366	—	—	22,366
Total short-term investments	<u>\$ 118,119</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 118,119</u>

For any investments that were in an unrealized loss position, we considered if we intended on selling the investments before maturity and if it is more-likely-than-not that we would have to sell the security before the recovery of the amortized cost basis. We concluded that there were no other-than-temporary impairments at December 31, 2019.

At December 31, 2019, all of our short-term investments had maturities within the next twelve months.

3. Fair Value Measurements

We measure certain financial instruments at fair value using a fair value hierarchy. In the hierarchy, assets are classified based on the lowest level inputs used in valuation into the following categories:

- *Level 1* — Quoted prices in active markets for identical assets and liabilities;
- *Level 2* — Observable inputs including quoted market prices for similar assets and liabilities in active markets, quoted prices for identical assets and liabilities in inactive markets, or inputs that are corroborated by observable market data; and
- *Level 3* — Unobservable inputs.

The following tables summarize assets that are measured at fair value on a recurring basis:

(in thousands)	December 31, 2019			
	Level 1	Level 2	Level 3	Total
Cash and cash equivalents				
Money market funds	\$ 13,588	\$ —	\$ —	\$ 13,588
Commercial paper	—	8,987	—	8,987
	<u>\$ 13,588</u>	<u>\$ 8,987</u>	<u>\$ —</u>	<u>\$ 22,575</u>
Short-term investments				
Commercial paper	\$ —	\$ 61,371	\$ —	\$ 61,371
Corporate bonds	—	23,869	—	23,869
U.S. Treasury and agency obligations	—	52,664	—	52,664
	<u>\$ —</u>	<u>\$ 137,904</u>	<u>\$ —</u>	<u>\$ 137,904</u>

(in thousands)	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Cash and cash equivalents				
Money market funds	\$ 38,022	\$ —	\$ —	\$ 38,022
	<u>\$ 38,022</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 38,022</u>
Short-term investments				
Commercial paper	\$ —	\$ 79,634	\$ —	\$ 79,634
Corporate bonds	—	16,119	—	16,119
U.S. Treasury and agency obligations	—	22,366	—	22,366
	<u>\$ —</u>	<u>\$ 118,119</u>	<u>\$ —</u>	<u>\$ 118,119</u>

We did not have any liabilities measured and recorded at fair value at December 31, 2019 or December 31, 2018.

4. Property and Equipment, Net

Property and equipment, net consisted of the following:

(in thousands)	December 31,	
	2019	2018
Computer software and equipment	\$ 21,234	\$ 13,038
Furniture and fixtures	4,504	2,376
Leasehold improvements	16,953	7,266
Right-of-use assets under finance leases	1,866	1,854
Total	44,557	24,534
Less: accumulated depreciation and amortization	(17,710)	(13,186)
Property and equipment, net	<u>\$ 26,847</u>	<u>\$ 11,348</u>

Depreciation and amortization related to property and equipment was \$6.3 million, \$5.6 million and \$4.1 million in 2019, 2018 and 2017, respectively.

5. Acquisition, Goodwill and Intangible Assets

Business Combination

On December 2, 2019, we acquired Indegy Ltd. (“Indegy”) to expand our OT-specific capabilities. Through a share purchase agreement, we acquired 100% of Indegy's equity in exchange for cash consideration of \$80.1 million, including cash acquired of \$5.5 million. As part of the acquisition, all unvested options to acquire ordinary shares of Indegy vested immediately, and all options to acquire ordinary shares of Indegy were canceled in exchange for a right to receive a portion of the cash consideration. We paid \$1.8 million for unvested options, which is included in post-acquisition stock-based compensation expense in our consolidated statements of operations.

The cash consideration was allocated as follows:

(in thousands)		
Cash acquired	\$	5,500
Other net tangible assets acquired		735
Deferred tax assets, net		4,243
Intangible assets		15,700
Goodwill		53,873
Total purchase price allocation	\$	<u>80,051</u>

We are still finalizing the allocation of the purchase price, which may change as additional information becomes available related to any working capital adjustment and income taxes.

Acquired intangible assets and their estimated useful lives at the date of acquisition are as follows:

(dollars in thousands)	Intangible Assets	
	Cost	Weighted Average Useful Life
Acquired technology	\$ 15,500	7 years
Trade name	200	2 years
Acquired intangible assets	<u>\$ 15,700</u>	

The results of operations of Indegy are included in our consolidated statements of operations from the acquisition date and were not material. Pro forma results of operations are not presented as they are not material to the consolidated statements of operations.

In 2019, we recognized \$4.0 million of acquisition-related transaction costs in general and administrative expense, which included \$2.1 million of expense related to the intercompany transfer of intellectual property.

Goodwill and Acquired Intangible Assets

The changes in the carrying amount of goodwill are as follows:

(in thousands)		
Balance at December 31, 2018	\$	265
Acquired goodwill		53,873
Balance at December 31, 2019	\$	<u>54,138</u>

The excess purchase consideration over the fair value of acquired assets and liabilities is recorded as goodwill. The acquired goodwill reflects the synergies we expect from integrating Indegy's capabilities into our enterprise platform

offerings and from marketing and selling these new capabilities to our customers. None of the acquired goodwill is tax deductible.

Acquired intangible assets subject to amortization are as follows:

	December 31, 2019			December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Acquired technology	\$ 17,325	\$ (2,009)	\$ 15,316	\$ 1,824	\$ (1,397)	\$ 427
Trade name	200	(8)	192	—	—	—
	<u>\$ 17,525</u>	<u>\$ (2,017)</u>	<u>\$ 15,508</u>	<u>\$ 1,824</u>	<u>\$ (1,397)</u>	<u>\$ 427</u>

Amortization of acquired intangible assets was \$0.6 million in each of 2019, 2018 and 2017, respectively.

At December 31, 2019, estimated future amortization of intangible assets is as follows:

(in thousands)

Year ending December 31,	
2020	\$ 2,314
2021	2,306
2022	2,214
2023	2,214
2024	2,214
Thereafter	4,246
Total	<u>\$ 15,508</u>

6. Leases

We have operating leases for office facilities and finance leases for computer and office equipment. Our leases have remaining terms of less than one year to just over twelve years, some of which include one or more options to renew, with renewal terms up to five years and some of which include options to terminate the leases within the next two to five years. The ROU assets and liabilities at December 31, 2019 assume the option to early terminate one of our leases in 2021 and one of our leases in 2025.

In August 2019, we took possession of the leased office space for our future headquarters in Columbia, Maryland. We recorded an initial ROU asset of \$32.3 million and a lease liability of \$32.0 million, with a lease term of 147 months. In November 2019, we amended this lease to increase square footage and modify the timing of future payments. Future lease payments related to this lease are \$72.2 million and the lease payments are expected to commence in the second quarter of 2021.

The components of lease expense were as follows:

(in thousands)	Year Ended December 31,	
	2019	2018
Operating lease cost	<u>\$ 6,045</u>	<u>\$ 3,694</u>
Finance lease cost		
Amortization of ROU assets	\$ 607	\$ 614
Interest on lease liabilities	7	35
Total finance lease cost	<u>\$ 614</u>	<u>\$ 649</u>

Rent expense for short-term leases in 2019 and 2018 was not material.

Supplemental information related to leases was as follows:

	December 31, 2019	December 31, 2018
Operating leases		
Weighted average remaining lease term	10.0 years	3.1 years
Weighted average discount rate	5.8%	7.1%
	Year Ended December 31,	
	2019	2018
(in thousands)		
Supplemental cash flow information related to leases:		
Operating cash payments for operating leases	\$ 4,452	\$ 4,313
Operating cash payments for finance leases	7	35
ROU assets obtained in exchange for lease obligations		
Operating leases	\$ 39,170	\$ 1,525
Finance leases	11	15

Maturities of operating lease liabilities at December 31, 2019 were as follows:

(in thousands)		
Year ending December 31,		
2020		\$ 5,308
2021		6,940
2022		7,048
2023		7,036
2024		7,171
Thereafter		50,951
Total lease payments		84,454
Less: Imputed interest		(24,077)
Less: Tenant incentives		(14,505)
Total		<u>\$ 45,872</u>

7. Debt

On May 4, 2017, we entered into a \$25.0 million revolving credit facility ("Credit Facility") with Silicon Valley Bank, which is available for use until May 4, 2020. The Credit Facility is intended to be used to fund working capital and to provide increased liquidity and financial flexibility and bears interest at either LIBOR plus 2%, or the lender's prime rate plus 1%. In addition, we pay quarterly in arrears 0.25% of the average unused portion. The Credit Facility is secured by a first priority security interest in all of our assets, with a negative pledge on our Intellectual Property, as defined in the credit agreement.

The Credit Facility contains certain restrictive covenants customary for facilities of this type including restrictions on indebtedness, liens, acquisitions and investments, restricted payments and dispositions. If, as of the last day of any quarter, the outstanding balance of the Credit Facility exceeds \$5.0 million, there are financial covenants that require us to maintain a minimum level of earnings before income taxes, interest, depreciation and amortization ("EBITDA") adjusted to add changes in deferred revenue in the period, and a minimum current ratio level.

There were no borrowings or letters of credit issued under the Credit Facility in 2019 or 2018. On January 9, 2020, we entered into a \$2.5 million standby letter of credit ("Letter of Credit") for the security deposit on our new headquarters

lease. The Letter of Credit bears interest at 2% per annum and expires one year from the issue date, with automatic renewals for additional one year terms until the final expiration date of February 2032.

8. Redeemable Convertible Preferred Stock and Common Stock

Redeemable Convertible Preferred Stock

In October 2012, Tenable, Inc. (now a wholly owned subsidiary of Tenable Holdings, Inc.) issued 15,847,500 shares of Series A redeemable convertible preferred stock. In December 2015, we issued 15,847,500 shares, par value of \$0.01, of Series A redeemable convertible preferred stock ("Series A") in exchange for Series A redeemable convertible preferred stock of Tenable, Inc. in connection with a recapitalization. This exchange was made on a one for one basis. In addition, we authorized 42,000,000 shares and issued 39,538,354 shares, par value of \$0.01, of Series B redeemable convertible preferred stock ("Series B"). Upon completion of our IPO, Series A and Series B (together, the "Redeemable Convertible Preferred Stock") automatically converted into an aggregate of 55,385,854 shares of our common stock.

We accreted the Redeemable Convertible Preferred Stock to the redemption price at the redemption date using the effective interest method. Upon completion of our IPO, the accretion rights of the Redeemable Convertible Preferred Stock were terminated.

Upon the completion of our IPO, we filed an Amended and Restated Certificate of Incorporation, authorizing a total of 500,000,000 shares of common stock and 10,000,000 shares of preferred stock. There were no shares of preferred stock issued or outstanding at December 31, 2019 or 2018.

Common Stock

The voting, dividend, and liquidation rights of common stockholders are subject to, and qualified by, the rights of preferred stockholders. The common stockholders are entitled to receive dividends when, as and if, declared by the Board of Directors, subject to preferential dividend rights of preferred stockholders. Upon dissolution or liquidation, our common stockholders will be entitled to receive all assets available for distribution to stockholders, subject to any preferential rights of preferred stockholders.

9. Stock-Based Compensation

We have various stock incentive plans under which we have issued stock-based awards. Stock options granted under our stock incentive plans have a maximum term of ten years, generally vest over a period of three to four years, and the exercise price cannot be less than the fair market value on the date of grant. RSUs granted under our stock incentive plans generally vest over a period of two to four years.

In 2018, our Board of Directors adopted, and our stockholders approved, our 2018 Equity Incentive Plan ("2018 Plan"). No additional grants were made under our other stock incentive plans, and any shares subject to stock options or other stock awards granted under our other plans that would have returned to such plan (such as upon the expiration or termination of a stock award prior to vesting) were added to, and are available for issuance under, our 2018 Plan. In addition, the number of shares of our common stock reserved for issuance under our 2018 Plan automatically increases on January 1 of each year through 2028, according to an evergreen provision. Due to this provision, we reserved an additional 4,656,320 shares of our common stock in January 2019. At December 31, 2019, there were 15,395,809 shares available for grant.

Stock-based compensation expense included in the consolidated statements of operations was as follows:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Cost of revenue	\$ 2,817	\$ 1,707	\$ 281
Sales and marketing	16,032	6,911	1,579
Research and development	8,911	5,804	1,782
General and administrative	15,683	8,453	4,118
Total stock-based compensation expense	\$ 43,443	\$ 22,875	\$ 7,760

At December 31, 2019, the total unrecognized stock-based compensation expense related to outstanding stock options was \$24.3 million, which is expected to be recognized over an estimated remaining weighted average period of 2.1 years.

At December 31, 2019, the unrecognized stock-based compensation expense related to unvested awards of restricted stock was \$1.7 million, which is expected to be recognized over an estimated remaining period of 1.0 year.

At December 31, 2019, the unrecognized stock-based compensation expense related to unvested RSUs was \$59.4 million, which is expected to be recognized over an estimated remaining period of 3.1 years.

Stock Options

A summary of our stock option activity for the periods presented is below:

(in thousands, except for per share data and years)	Number of Shares	Weighted Average Exercise Price	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding at December 31, 2016	9,336	\$ 2.77	7.2	\$ 15,374
Granted	9,022	5.22		
Exercised	(1,870)	1.62		7,667
Forfeited/canceled	(1,915)	3.21		
Outstanding at December 31, 2017	14,573	4.38	8.2	77,020
Granted	6,108	15.17		
Exercised	(740)	2.26		9,902
Forfeited/canceled	(722)	7.23		
Outstanding at December 31, 2018	19,219	7.78	8.0	277,114
Granted	—	—		
Exercised	(4,205)	4.53		98,378
Forfeited/canceled	(2,075)	10.63		
Outstanding at December 31, 2019	12,939	8.38	7.1	201,608
Exercisable at December 31, 2019	6,473	6.04	6.4	116,016

At December 31, 2019, there were 12.9 million stock options outstanding that were vested and expected to vest.

In 2018 and 2017, we granted stock options to employees that vest over three to four years and had a per share weighted average grant date fair value of \$6.84 and \$2.48, respectively. Estimating the fair value of stock options using the Black-Scholes option-pricing model requires assumptions as to the estimated term of the option, the risk-free interest rate, the expected volatility of the price of our common stock, the expected dividend yield, and the fair value of our underlying common stock prior to our IPO.

Fair Value of Common Stock. Following our IPO, we use the market price of our common stock at the date of grant. Prior to our IPO, the lack of an active public market for our common stock required an estimate of the fair value of the common stock for granting stock options and restricted shares, and for determining stock-based compensation expense. Contemporaneous third-party valuations were obtained to assist in determining the fair value of our common stock. The contemporaneous valuations were performed in accordance with applicable methodologies, approaches and assumptions of the technical practice-aid issued by the American Institute of Certified Public Accountants Practice Aid entitled *Valuation of Privately-Held Company Equity Securities Issued as Compensation*.

Expected Term. This is the period of time that the options granted are expected to remain unexercised. We employ the simplified method to calculate the average expected term.

Expected Volatility. Volatility is a measure of the amount by which a financial variable, such as a share price, has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. As we do not yet have sufficient history of our own volatility, we have identified several public entities of similar size, complexity, and stage of development and estimate volatility based on the volatility of these companies.

Risk-Free Interest Rate. This is the U.S. Treasury rate, having a term that most closely resembles the expected life of the stock option.

Expected Dividend Yield. We have never declared or paid dividends and have no plans to do so in the foreseeable future.

The fair value of each stock option was estimated on the grant date based on the following assumptions:

	Year Ended December 31,	
	2018	2017
Expected term (in years)	6.3	6.3
Expected volatility	41.3% — 43.3%	45.2% — 47.0%
Risk-free interest rate	2.7% — 2.9%	1.9% — 2.4%
Expected dividend yield	—	—
Expected forfeiture rate	—	—

Restricted Stock and Restricted Stock Units

A summary of our restricted stock and RSU activity is presented below:

(in thousands, except for per share data and years)	Restricted Stock		Restricted Stock Units	
	Number of Shares	Weighted Average Grant Date Fair Value	Number of Shares	Weighted Average Grant Date Fair Value
Unvested balance at December 31, 2016	—	\$ —	—	\$ —
Granted	1,583	4.25	—	—
Vested	—	—	—	—
Forfeited	—	—	—	—
Unvested balance at December 31, 2017	1,583	4.25	—	—
Granted	—	—	1,200	18.75
Vested	(693)	4.25	—	—
Forfeited	—	—	(71)	16.27
Unvested balance at December 31, 2018	890	4.25	1,129	18.90
Granted	—	—	2,715	27.81
Vested	(395)	4.25	(479)	18.28
Forfeited	—	—	(471)	25.21
Unvested balance at December 31, 2019	495	4.25	2,894	26.34

The grant date fair value was based on the estimated fair value of our common stock on the date of grant. RSUs granted before July 30, 2018 vest upon the satisfaction of both service-based and performance-based vesting conditions. The performance-based condition was satisfied upon the completion of our IPO. RSUs granted after July 30, 2018 vest upon the satisfaction of a service-based vesting condition.

Compensation expense for restricted stock and RSUs is recognized on a straight-line basis over the requisite service period, with the exception of RSUs that include performance-based vesting conditions, which are expensed using the accelerated attribution method.

2018 Employee Stock Purchase Plan

In 2018, our board of directors adopted, and our stockholders approved, our 2018 ESPP. The number of shares of common stock reserved for issuance under our 2018 ESPP automatically increases on January 1 of each year through 2028 according to an evergreen provision. Due to this provision, we reserved an additional 1,396,896 shares of our common stock in January 2019. At December 31, 2019, there were 4,620,087 shares available for grant.

Under our 2018 ESPP, employees may set aside up to 15% of their gross earnings, on an after-tax basis, to purchase our common stock at a discounted price, which is calculated at 85% of the lower of the fair market value of our common stock on the first day of an offering or on the date of purchase. The 2018 ESPP permits offerings up to 27 months in duration, with one or more purchase periods in each offering. Additionally, in cases where the fair market value of a share of our common stock on the first day of a new purchase period within an offering is less than or equal to the fair market value of a share of our common stock at the beginning of the offering, that offering will be terminated and participants will be automatically enrolled in a new offering with a new 24-month duration with purchase periods every six months.

In 2019, employees purchased 776,809 shares of our common stock at a weighted average price of \$19.48 per share, resulting in cash proceeds to us of \$15.1 million.

At December 31, 2019, there was \$5.4 million of employee contributions to the 2018 ESPP included in accrued compensation. The unrecognized stock-based compensation expense related to our 2018 ESPP was \$8.5 million, which is expected to be recognized over the remaining offering period of 1.7 years.

The fair value of the 2018 ESPP purchase rights was estimated on the offering or modification dates using a Black-Scholes option-pricing model and the following assumptions:

	Year Ended December 31,	
	2019	2018
Expected term (in years)	0.5 — 2.0	0.6 — 2.1
Expected volatility	34.4% — 44.6%	31.9% — 33.5%
Risk-free interest rate	1.5% — 2.5%	2.3% — 2.7%
Expected dividend yield	—	—

10. Net Loss Per Share Attributable to Common Stockholders

The following table sets forth the computation of basic and diluted net loss per share attributable to common stockholders:

(in thousands, except per share data)	Year Ended December 31,		
	2019	2018	2017
Net loss attributable to common stockholders	\$ (99,013)	\$ (73,955)	\$ (41,785)
Weighted-average shares used to compute net loss per share attributable to common stockholders, basic and diluted	96,014	53,669	22,211
Net loss per share attributable to common stockholders, basic and diluted	\$ (1.03)	\$ (1.38)	\$ (1.88)

The following potentially dilutive securities have been excluded from the diluted per share calculations because they would have been antidilutive:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Stock options	12,939	19,219	14,573
Restricted stock units	2,894	1,129	—
Restricted shares	495	890	1,583
Shares to be issued under the 2018 ESPP	278	320	—
Redeemable convertible preferred stock	—	—	55,386
Total	16,606	21,558	71,542

11. Income Taxes

U.S. and international components of loss before income taxes were as follows:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
U.S. (loss) income	\$ (21,644)	\$ 1,429	\$ (29,357)
Foreign loss	(64,005)	(72,586)	(11,494)
Total loss before income taxes	\$ (85,649)	\$ (71,157)	\$ (40,851)

The components of the provision for income taxes were as follows:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Current			
Federal	\$ (224)	\$ —	\$ 140
State	100	58	6
Foreign	9,245	2,306	898
Total current tax expense	9,121	2,364	1,044
Deferred			
Foreign	4,243	—	(873)
Total deferred tax expense (benefit)	4,243	—	(873)
Total provision for income taxes	\$ 13,364	\$ 2,364	\$ 171

The items accounting for the difference between income taxes computed at the federal statutory rate and our effective tax rate were as follows:

	Year Ended December 31,		
	2019	2018	2017
U.S. federal statutory tax rate	21.0 %	21.0 %	34.0 %
State and local taxes	4.8	(1.5)	2.4
Research and development tax credit	3.1	1.9	3.0
Stock-based compensation	19.0	0.5	—
Uncertain tax positions	(0.5)	(1.0)	(0.2)
Foreign tax rate differential	(7.9)	(9.4)	(4.0)
Change in valuation allowance	(40.8)	(12.6)	2.7
Gain on sale of intellectual property	(12.3)	—	—
Transition tax	—	—	(2.7)
Revaluation of U.S. deferred income taxes	—	—	(34.5)
Other	(2.0)	(2.2)	(1.1)
Effective tax rate	(15.6)%	(3.3)%	(0.4)%

We maintain a valuation allowance on U.S. federal, state and foreign net deferred tax assets as the realization of our deferred tax assets is dependent upon future earnings, if any, the timing and amount of which are uncertain.

The components of the deferred tax assets and liabilities were as follows:

(in thousands)	December 31,	
	2019	2018
Deferred tax assets:		
Net operating losses	\$ 65,494	\$ 32,745
Deferred revenue	13,891	16,488
Stock-based compensation	10,032	5,581
Tax credits	7,585	5,320
Leases	10,451	2,436
Accrued compensation	918	697
Other	263	68
Total deferred tax assets	108,634	63,335
Valuation allowance	(82,237)	(47,266)
Net deferred tax assets	26,397	16,069
Deferred tax liabilities:		
Deferred commissions	(15,003)	(13,273)
Property and equipment	(10,086)	(2,166)
Intangible assets	(919)	(353)
Other	(389)	(277)
Total deferred tax liabilities	(26,397)	(16,069)
Net deferred tax liabilities	\$ —	\$ —

At December 31, 2019, we had net operating loss (“NOL”) carryforwards for federal, state and foreign tax purposes of \$186.0 million, \$132.0 million, and \$163.6 million, respectively, which will begin to expire in 2030, as well as \$10.1 million of federal, state and foreign research and development tax credits, foreign tax credits, minimum tax credits and certain states’ job creation tax credits. The federal research and development and foreign tax credits will begin to expire in 2032 and the state job creation tax credits will begin to expire in 2020.

In December 2019, we sold acquired intellectual property through an intercompany transaction, which resulted in \$6.3 million of current tax expense and \$4.2 million of deferred tax expense in Israel.

In 2018, we recorded a deferred tax asset of \$1.7 million related to our operating lease liability and recorded a deferred tax liability of \$1.7 million related to our operating lease right-of-use asset due to the adoption of ASU 842. In connection with our IPO, we recorded a \$1.9 million increase in our valuation allowance related to certain transaction costs.

We are currently subject to the annual limitation under Sections 382 and 383 of the Internal Revenue Code. We will not be precluded from realizing the NOL carryforward and tax credits but may be limited in the amount we could utilize in any given tax year in the event that the federal and state taxable income will exceed the limitation imposed by Section 382. The amount of the annual limitation is determined based on our value immediately prior to the ownership change. Subsequent ownership changes may further affect the limitation in future years.

At December 31, 2019 and 2018, the total amount of gross unrecognized tax benefits was \$7.2 million and \$4.8 million, respectively, which, if recognized, would impact our effective tax rate by less than \$0.1 million in each year. Interest and penalties associated with uncertain tax positions recognized as a component of income tax expense were immaterial in 2019, 2018 and 2017.

The change in gross unrecognized tax benefits, excluding accrued interest, were as follows:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Unrecognized tax benefits at the beginning of the period	\$ 4,814	\$ 1,199	\$ 736
Additions for tax positions in the current year	2,306	3,571	446
Increase in prior year positions	90	102	30
Decrease in prior year positions	(89)	(58)	(13)
Acquisitions	42	—	—
Unrecognized tax benefits at the end of the period	\$ 7,163	\$ 4,814	\$ 1,199

We file income tax returns in the United States, including various state jurisdictions. Our subsidiaries file income tax returns in various foreign jurisdictions. Tax years after 2014 remain open to examination by the major taxing jurisdictions in which we are subject to tax. At December 31, 2019, we were not under examination by the Internal Revenue Service or any state or foreign tax jurisdiction.

Depending on the jurisdiction, distributions of earnings could be subject to withholding taxes at rates applicable to the distributing jurisdiction. As we intend to continue to reinvest the earnings of foreign subsidiaries indefinitely, we have not provided for a U.S. income tax liability and foreign withholding taxes on undistributed foreign earnings of foreign subsidiaries. It is not practicable for us to determine the amount of unrecognized tax expense on these reinvested international earnings.

12. Geographic Information

We operate as one operating segment. Our Chief Executive Officer, who is our chief operating decision maker, reviews financial information on a consolidated basis for purposes of making operating decisions, allocating resources, and evaluating financial performance.

Revenue by region, based on the address of the end user as specified in our subscription, license or service agreements, was as follows:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Americas	\$ 243,616	\$ 191,204	\$ 138,876
Europe, Middle East and Africa	77,676	53,839	34,121
Asia Pacific	33,294	22,317	14,730
Revenue	\$ 354,586	\$ 267,360	\$ 187,727

Customers located in the United States accounted for 63%, 67% and 69% of revenue in 2019, 2018 and 2017, respectively. No other country accounted for 10% or more of revenue in the periods presented.

Our property and equipment, net by geographic area is summarized as follows:

(in thousands)	December 31,	
	2019	2018
United States	\$ 21,464	\$ 6,487
International	5,383	4,861
Property and equipment, net	\$ 26,847	\$ 11,348

13. Benefit Plans

We maintain a contributory defined contribution 401(k) plan for our U.S. employees. We adopted a Safe Harbor Plan

effective January 1, 2016, and as a result, company-matched contributions are fully vested. Additional contributory plans are in effect internationally. Our contribution expense for such plans was \$6.2 million, \$4.8 million and \$3.3 million in 2019, 2018 and 2017, respectively.

14. Quarterly Results (unaudited)

The following tables summarize our unaudited quarterly consolidated statements of operations data for each of the eight quarters through the period ended December 31, 2019. The information for each of these quarters has been prepared on the same basis as our audited annual consolidated financial statements and reflect, in the opinion of management, all adjustments of a normal, recurring nature that are necessary for the fair presentation of the results of operations for these periods. This data should be read in conjunction with our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Historical results are not necessarily indicative of the results that may be expected in the future, and the quarterly results are not necessarily indicative of the results that may be expected for the full year or any other period.

(in thousands, except per share amounts)	Three Months Ended			
	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
Revenue	\$ 80,301	\$ 85,384	\$ 91,852	\$ 97,049
Cost of revenue	13,226	13,918	15,245	18,429
Gross profit	67,075	71,466	76,607	78,620
Operating expenses:				
Sales and marketing	52,689	56,015	56,699	62,632
Research and development	21,935	21,698	20,763	22,668
General and administrative	15,136	15,987	17,472	20,873
Total operating expenses	89,760	93,700	94,934	106,173
Loss from operations	(22,685)	(22,234)	(18,327)	(27,553)
Interest income, net	1,556	1,594	1,527	1,153
Other expense, net	(214)	(122)	(240)	(104)
Loss before income taxes	(21,343)	(20,762)	(17,040)	(26,504)
Provision for income taxes	97	866	600	11,801
Net loss	(21,440)	(21,628)	(17,640)	(38,305)
Accretion of Series A and B redeemable convertible preferred stock	—	—	—	—
Net loss attributable to common stockholders	\$ (21,440)	\$ (21,628)	\$ (17,640)	\$ (38,305)
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.23)	\$ (0.23)	\$ (0.18)	\$ (0.39)

(in thousands, except per share amounts)	Three Months Ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
Revenue	\$ 59,107	\$ 63,592	\$ 69,440	\$ 75,221
Cost of revenue	8,728	9,879	12,161	12,399
Gross profit	50,379	53,713	57,279	62,822
Operating expenses:				
Sales and marketing	39,588	41,826	44,550	47,380
Research and development	17,185	17,791	20,553	21,169
General and administrative	9,055	10,541	13,272	13,864
Total operating expenses	65,828	70,158	78,375	82,413
Loss from operations	(15,449)	(16,445)	(21,096)	(19,591)
Interest (expense) income, net	(26)	(23)	894	1,510
Other income (expense), net	18	(438)	(185)	(326)
Loss before income taxes	(15,457)	(16,906)	(20,387)	(18,407)
Provision for income taxes	431	244	482	1,207
Net loss	(15,888)	(17,150)	(20,869)	(19,614)
Accretion of Series A and B redeemable convertible preferred stock	(188)	(191)	(55)	—
Net loss attributable to common stockholders	\$ (16,076)	\$ (17,341)	\$ (20,924)	\$ (19,614)
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.68)	\$ (0.73)	\$ (0.28)	\$ (0.21)

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 Rule 13a-15(e) and Rule 15d-15(e) under 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 SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures 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 accumulated and communicated to our management, including our principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), as of the end of the period covered by this Form 10-K. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2019, our disclosure controls and procedures were effective to provide reasonable assurance that the information required to be disclosed by us in this Form 10-K was (a) reported within the time periods specified by SEC rules and regulations and (b) communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding any required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) of the Exchange Act. Our management evaluated the effectiveness of our internal control over financial reporting based on the framework in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission, and concluded that our internal control over financial reporting was effective at December 31, 2019. We completed the acquisition of Indegy on December 2, 2019. Since we have not yet fully incorporated the internal controls and procedures of Indegy into our internal control over financial reporting, management excluded Indegy from its assessment of the effectiveness of our internal controls at December 31, 2019. Indegy represented less than 2% of our total assets at December 31, 2019 and less than 1% of our revenue and operating expenses in 2019.

Our independent registered public accounting firm, Ernst & Young LLP, has issued an audit report with respect to our internal control over financial reporting as of December 31, 2019, which is included in Part II, Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

We implemented business combination controls in connection with our acquisition of Indegy. There were no other changes in our internal control over financial reporting identified in management’s evaluation pursuant to Rules 13a-15(d) or 15d-15(d) of the Exchange Act during the period covered by this Form 10-K that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Internal Controls

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable, not absolute, assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply judgment in evaluating the benefits of possible controls and procedures relative to their costs. 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.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Executive Officers and Directors

The information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2020 annual meeting of stockholders, or the Proxy Statement, which is expected to be filed not later than 120 days after the end of our fiscal year ended December 31, 2019, under the captions "Information Regarding the Board of Directors and Corporate Governance," "Election of Directors" and "Executive Officers" and is incorporated in this report by reference.

Item 11. Executive Compensation

The information required by this item will be set forth in the Proxy Statement under the captions "Executive Compensation" and "Non-Employee Director Compensation" and is incorporated herein by reference.

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

The information required by this item will be set forth in the Proxy Statement under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Securities Authorized for Issuance under Equity Compensation Plans" and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this item will be set forth in the Proxy Statement under the captions "Transactions with Related Persons" and "Independence of the Board of Directors" and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required by this item will be set forth in the Proxy Statement under the caption "Ratification of Selection of Independent Registered Public Accounting Firm" and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a)(1) Financial Statements

See the Index to Consolidated Financial Statements in Item 8 of this Annual Report on Form 10-K.

(a)(2) Financial Statement Schedules

**SCHEDULE II
SUPPLEMENTARY CONSOLIDATED FINANCIAL STATEMENT SCHEDULE
VALUATION AND QUALIFYING ACCOUNTS**

(in thousands)	Balance at Beginning of Year	Additions Charged to Costs and Expenses	Deductions ⁽¹⁾	Balance at End of Year
Allowance for Doubtful Accounts				
Year Ended December 31, 2019	\$ 188	\$ 967	\$ (391)	\$ 764
Year Ended December 31, 2018	160	149	(121)	188
Year Ended December 31, 2017	200	327	(367)	160

(1) Consists of write-offs of uncollectible accounts, net of recoveries.

All other schedules have been omitted because they are not required, not applicable, or the required information is included in the financial statements or the notes to the financial statements.

(a)(3) Exhibits

The following is a list of Exhibits filed as part of this Annual Report on Form 10-K:

Exhibit Number	Description	Location
2.1	Share Purchase Agreement, dated as of December 2, 2019, by and between Tenable, Inc., Indegy Ltd., the shareholders of Indegy set forth on Schedule I to the Purchase Agreement and Shareholder Representative Services LLC, as the representative of Indegy's shareholders and optionholders thereunder.	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-38600) on December 2, 2019
3.1	Amended and Restated Certificate of Incorporation of Tenable Holdings, Inc.	Previously filed as Exhibit 3.1 to the Company's Current Report on Form 8-K (File No. 001-38600) on July 30, 2018
3.2	Amended and Restated Bylaws of Tenable Holdings, Inc.	Previously filed as Exhibit 3.4 to the Company's Registration Statement on Form S-1 (File No. 333-226002) on June 29, 2018
4.1	Common Stock Certificate of Tenable Holdings, Inc.	Previously filed as Exhibit 4.1 to the Company's Registration Statement on Form S-1 (File No. 333-226002) on July 16, 2018
4.2	Investors' Rights Agreement by and among Tenable Holdings, Inc. and certain of its stockholders, dated December 18, 2015	Previously filed as Exhibit 4.2 to the Company's Registration Statement on Form S-1 (File No. 333-226002) on July 16, 2018
4.3	Description of Common Stock of Tenable Holdings, Inc.	Filed herewith
10.1+	2016 Stock Incentive Plan and Irish Supplement and Forms of Option Grant Notice and Agreement and Exercise Notice and Form of Restricted Stock Grant Notice and Agreement thereunder, as amended to date	Previously filed as Exhibit 10.1 to the Company's Registration Statement on Form S-8 (File No. 333-226347) on July 26, 2018

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10.2+	2012 Stock Incentive Plan and Form of Notice of Stock Option Grant and Form of Stock Option Agreement and Notice of Exercise and Common Stock Purchase Agreement thereunder, as amended to date	Previously filed as Exhibit 10.2 to the Company's Registration Statement on Form S-8 (File No. 333-226347) on July 26, 2018
10.3+	2002 Stock Incentive Plan and Form of Notice of Option Grant and Form of Stock Option Agreement and Form of Notice of Stock Option Exercise and Form of Stock Award Agreement thereunder, as amended to date	Previously filed as Exhibit 10.3 to the Company's Registration Statement on Form S-8 (File No. 333-226347) on July 26, 2018
10.4+	2018 Equity Incentive Plan and Forms of Stock Option Grant Notice and Agreement and Restricted Stock Unit Grant Notice and Agreement thereunder	Previously filed as Exhibit 10.4 to the Company's Registration Statement on Form S-8 (File No. 333-226347) on July 26, 2018
10.5+	2018 Employee Stock Purchase Plan	Previously filed as Exhibit 10.5 to the Company's Registration Statement on Form S-8 (File No. 333-226347) on July 26, 2018
10.6+	Form of Indemnification Agreement by and between Tenable Holdings, Inc. and each of its directors and executive officers	Previously filed as Exhibit 10.6 to the Company's Registration Statement on Form S-1 (File No. 333-226002) on July 16, 2018
10.7+	Amended and Restated Employment Agreement, dated as of February 20, 2019, by and between Tenable, Inc. and Amit Yoran	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-38600) on February 22, 2019
10.8+	Amended and Restated Employment Agreement, dated as of February 20, 2019, by and between Tenable, Inc. and Stephen A. Vintz	Previously filed as Exhibit 10.2 to the Company's Current Report on Form 8-K (File No. 001-38600) on February 22, 2019
10.9+	Amended and Restated Employment Agreement, dated as of February 20, 2019, by and between Tenable, Inc. and John G. Negron	Previously filed as Exhibit 10.4 to the Company's Current Report on Form 8-K (File No. 001-38600) on February 22, 2019
10.10+	Amended and Restated Employment Agreement, dated as of February 20, 2019, by and between Tenable, Inc. and Stephen A. Riddick	Previously filed as Exhibit 10.3 to the Company's Current Report on Form 8-K (File No. 001-38600) on February 22, 2019
10.11	Loan and Security Agreement, dated as of May 4, 2017, by and between Tenable Network Security, Inc. and Silicon Valley Bank	Previously filed as Exhibit 10.11 to the Company's Registration Statement on Form S-1 (File No. 333-226002) on July 16, 2018
10.12#	Distribution Agreement, dated as of September 10, 2012, by and between Tenable Network Security, Inc. and Ingram Micro, Inc.	Previously filed as Exhibit 10.12 to the Company's Registration Statement on Form S-1 (File No. 333-226002) on July 16, 2018
21.1	Subsidiaries of Tenable Holdings, Inc.	Filed herewith
23.1	Consent of Ernst & Young LLP, independent registered public accounting firm	Filed herewith
24.1	Power of Attorney	Filed herewith
31.1	Certification of the Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith
31.2	Certification of the Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Exchange Act, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002	Filed herewith
32.1*	Certification of the Principal Executive Officer and the Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	Filed herewith
101.INS	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 (formatted as Inline XBRL with applicable taxonomy extension information contained in Exhibits 101.SCH, 101.CAL, 101.DEF, 101.LAB and 101.PRE)

(*) This certification is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.

(+) Indicates management contract or compensatory plan.

(#) Confidential treatment has been granted as to certain portions, indicated by asterisks, which portions have been omitted and filed separately with the Securities and Exchange Commission.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements 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.

TENABLE HOLDINGS, INC.

Date: February 28, 2020

By: /s/ Amit Yoran
Amit Yoran
Chairman and Chief Executive Officer

Date: February 28, 2020

By: /s/ Stephen A. Vintz
Stephen A. Vintz
Chief Financial Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Amit Yoran, Stephen A. Vintz and Stephen A. Riddick, jointly and severally, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign this Annual Report on Form 10-K of Tenable Holdings, Inc., and any or all amendments thereto, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite or necessary to be done in and about the premises hereby ratifying and confirming all that said attorneys-in-fact and agents, or his, her or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof. Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Amit Yoran</u> Amit Yoran	Chairman and Chief Executive Officer <i>(Principal Executive Officer)</i>	February 28, 2020
<u>/s/ Stephen A. Vintz</u> Stephen A. Vintz	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	February 28, 2020
<u>/s/ Arthur W. Coviello, Jr.</u> Arthur W. Coviello, Jr.	Director	February 28, 2020
<u>/s/ Kimberly L. Hammonds</u> Kimberly L. Hammonds	Director	February 28, 2020
<u>/s/ John C. Huffard, Jr.</u> John C. Huffard, Jr.	Director	February 28, 2020
<u>/s/ Jerry M. Kennelly</u> Jerry M. Kennelly	Director	February 28, 2020
<u>/s/ Ping Li</u> Ping Li	Director	February 28, 2020
<u>/s/ A. Brooke Seawell</u> A. Brooke Seawell	Director	February 28, 2020
<u>/s/ Richard M. Wells</u> Richard M. Wells	Director	February 28, 2020
<u>/s/ Linda K. Zecher</u> Linda K. Zecher	Director	February 28, 2020

DESCRIPTION OF TENABLE HOLDINGS, INC. COMMON STOCK

The following descriptions of the common stock of Tenable Holdings, Inc., or the Company, Delaware law and certain provisions of the Company's amended and restated certificate of incorporation and amended and restated bylaws are summaries. These summaries are qualified in the entirety by reference to the provisions of the Delaware General Corporation Law, or the DGCL, and the complete text of the Company's amended and restated certificate of incorporation and amended and restated bylaws, which are incorporated by reference as Exhibits 3.1 and 3.2, respectively, of the Company's Annual Report on Form 10-K to which this description is also an exhibit.

Authorized Capital Stock

The amended and restated certificate of incorporation authorizes the issuance of up to 500,000,000 shares of common stock, \$0.01 par value per share, and 10,000,000 shares of preferred stock, \$0.01 par value per share, all of which shares of preferred stock are undesignated. The Company's board of directors may establish the rights and preferences of the preferred stock from time to time.

Common Stock

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Under the amended and restated certificate of incorporation and amended and restated bylaws, holders of common stock do not have cumulative voting rights. Because of this, the holders of a majority of the shares of common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, holders of common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds.

Liquidation

In the event of liquidation, dissolution or winding up of the Company, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of the Company's debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of preferred stock.

Rights and Preferences

Holders of common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that the board of directors may designate in the future.

Anti-Takeover Provisions

Section 203 of the DGCL

The Company is subject to Section 203 of the DGCL, or Section 203, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding (but not the

outstanding voting stock owned by the interested stockholder) those shares owned (1) by persons who are directors and also officers and (2) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 ²/₃% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

A Delaware corporation may “opt out” of these provisions with an express provision in its original certificate of incorporation or an express provision in its amended and restated certificate of incorporation or amended and restated bylaws resulting from a stockholders’ amendment approved by at least a majority of the outstanding voting shares. The Company has not opted out of these provisions. As a result, mergers or other takeover or change in control attempts of the Company may be discouraged or prevented.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws

The amended and restated certificate of incorporation provides for the Company’s board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of the Company’s stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because the Company’s stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of the Company’s common stock outstanding will be able to elect all of the directors. The amended and restated certificate of incorporation and the amended and restated bylaws also provide that directors may be removed by the stockholders only for cause upon the vote of 66 ²/₃% of the Company’s outstanding common stock. Furthermore, the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of directors may, except as otherwise required by law or determined by the board, only be filled by a majority vote of the directors then serving on the board, even though less than a quorum.

The amended and restated certificate of incorporation and amended and restated bylaws also provide that all stockholder actions must be effected at a duly called meeting of stockholders and eliminates the right of stockholders to act by written consent without a meeting. The amended and restated bylaws provide that only the chairman of the board, chief executive officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

The amended and restated bylaws also provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and specify requirements as to the form and content of a stockholder’s notice.

The amended and restated certificate of incorporation and amended and restated bylaws provide that the stockholders cannot amend many of the provisions described above except by a vote of 66 ²/₃% or more of the Company’s outstanding common stock.

The combination of these provisions will make it more difficult for the Company's existing stockholders to replace the board of directors as well as for another party to obtain control of the Company by replacing the board of directors. Since the board of directors has the power to retain and discharge the Company's officers, these provisions could also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for the board of directors to issue preferred stock with voting or other rights or preferences that could delay or impede the success of any attempt to change control of the Company.

These provisions are intended to facilitate the Company's continued innovation and the risk-taking that it requires, permit the Company's board of directors to continue to prioritize the Company's long-term goals rather than short-term results, enhance the likelihood of continued stability in the composition of the board of directors and its policies. These provisions could discourage potential takeover attempts. These provisions are also designed to reduce the Company's vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for the Company's shares and may have the effect of deterring hostile takeovers or delaying changes in control or management. As a consequence, these provisions may also inhibit increases in the market price of the Company's stock that could result from actual or rumored takeover attempts.

Corporate Opportunities

The amended and restated certificate of incorporation provides that no officer or director of the Company who is also an officer, director, managing director or other employee of Accel or Insight (including any portfolio company thereof), will be liable to the Company or its stockholders for breach of any fiduciary duty by reason of the fact that any such individual directs a corporate opportunity to any member of Accel or Insight (including any portfolio company thereof), instead of to the Company, or does not communicate information regarding a corporate opportunity to the Company that the officer, director, employee, managing director or other affiliate has directed to any member of Accel or Insight (including any portfolio company thereof), unless such corporate opportunity is expressly offered to such officer or director in his or her capacity as an officer or director of the Company.

Choice of Forum

The amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the exclusive forum for: (1) any derivative action or proceeding brought on the Company's behalf; (2) any action asserting a breach of fiduciary duty owed by any director, officer or other employee to the Company or its stockholders; (3) any action asserting a claim against the Company or any director or officer or other employee arising pursuant to the DGCL, the amended and restated certificate of incorporation or amended and restated bylaws; or (4) any action asserting a claim against the Company or any director or officer or other employee that is governed by the internal affairs doctrine. The amended and restated certificate of incorporation further provides that the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act.

Transfer Agent and Registrar

The transfer agent and registrar for the Company's common stock is American Stock Transfer & Trust Company, LLC. The transfer agent's address is 6201 15th Avenue, Brooklyn, New York 11219.

Listing

The common stock is listed on the Nasdaq Global Select Market under the symbol "TENB."

SUBSIDIARIES OF TENABLE HOLDINGS, INC.

Name of Subsidiary

Jurisdiction of Incorporation

Tenable, Inc.

Delaware

Tenable Network Security Ireland Limited

Ireland

Indegy Ltd.

Israel

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

- (1) Registration Statement (Form S-8 No. 333-226347) pertaining to the Tenable Holdings, Inc. 2002 Stock Incentive Plan, as amended and restated; the Tenable Holdings, Inc. 2012 Stock Incentive Plan as amended and restated; the Tenable Holdings, Inc. 2016 Stock Incentive Plan, as amended and restated; the Tenable Holdings, Inc. 2018 Equity Incentive Plan; and the Tenable Holdings, Inc. 2018 Employee Stock Purchase Plan, and
- (2) Registration Statement (Form S-8 No. 333-230040) pertaining to the Tenable Holdings, Inc. 2018 Equity Incentive Plan and the Tenable Holdings, Inc. 2018 Employee Stock Purchase Plan;

of our reports dated February 28, 2020, with respect to the consolidated financial statements of Tenable Holdings, Inc. and the effectiveness of internal control over financial reporting of Tenable Holding's Inc. included in this Annual Report (Form 10-K) for the year ended December 31, 2019.

/s/ Ernst & Young LLP

Tysons, Virginia

February 28, 2020

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Amit Yoran, certify that:

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

Date: February 28, 2020

By: /s/ Amit Yoran

Amit Yoran

Chief Executive Officer and Chairman

(Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULES 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Stephen A. Vintz, certify that:

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

Date: February 28, 2020

By: /s/ Stephen A. Vintz

Stephen A. Vintz

Chief Financial Officer

(Principal Financial Officer and Principal Accounting Officer)

**CERTIFICATIONS 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**

Each of the undersigned hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report on Form 10-K of Tenable Holdings, Inc. for the fiscal year ended December 31, 2019 fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in such Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Tenable Holdings, Inc.

Date: February 28, 2020

By: /s/ Amit Yoran

Amit Yoran

Chief Executive Officer and Chairman

(Principal Executive Officer)

Date: February 28, 2020

By: /s/ Stephen A. Vintz

Stephen A. Vintz

Chief Financial Officer

(Principal Financial Officer and Principal Accounting Officer)