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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2018

OR

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

Commission File Number 001-37496

RAPID7, INC.
(Exact name of registrant as specified in its charter)

Delaware	**35-2423994**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
100 Summer Street **Boston, MA**	**02110**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (617) 247-1717

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

Title of each class	Name of each exchange on which registered
Common Stock, par value $0.01 per share	The Nasdaq Global 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 x

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

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

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 and post such files). YES x NO ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definition of "large accelerated filer", "accelerated filer", and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	x	Accelerated filer	☐
Non-accelerated filer	☐	Small reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any 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 x

As of June 29, 2018, the aggregate market value of the registrant's voting common stock held by non-affiliates of the registrant, based on a closing price of $28.22 per share of the registrant's common stock as reported on The Nasdaq Global Market on June 29, 2018, was approximately $1,111,592,590. For purposes of this computation, all officers, directors and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed to be an admission that such officers, directors or 10% beneficial owners are, in fact, affiliates of the registrant. The number of shares of registrant's common stock outstanding as of February 22, 2019 was 47,992,369.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K are incorporated by reference in Part III, Items 10-14 of this Annual Report on Form 10-K.

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PART I

Special Note Regarding 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 risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such 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. Forward-looking statements are often identified by the use of words such as, but not limited to, “anticipate,” “believe,” “can,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “plan,” “project,” “seek,” “should,” “target,” “will,” “would” and similar expressions or variations intended to identify forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning the following:

• our ability to continue to add new customers, maintain existing customers and sell new products and professional services to new and existing customers;

• the effects of increased competition as well as innovations by new and existing competitors in our market;

• our ability to adapt to technological change and effectively enhance, innovate and scale our solutions;

• our ability to effectively manage or sustain our growth and to attain and sustain profitability;

• our ability to diversify our sources of revenue;

• potential acquisitions and integration of complementary business and technologies;

• our expected use of proceeds;

• our ability to maintain, or strengthen awareness of, our brand;

• perceived or actual security, integrity, reliability, quality or compatibility problems with our solutions, including related to security breaches in our customers; systems, unscheduled downtime or outages;

• statements regarding future revenue, hiring plans, expenses, capital expenditures, capital requirements and stock performance;

• our ability to meet publicly announced guidance or other expectations about our business, key metrics and future operating results;

• our ability to maintain an adequate annualized recurring revenue growth;

• our ability to attract and retain qualified employees and key personnel and further expand our overall headcount;

• our ability to grow, both domestically and internationally;

• our ability to stay abreast of new or modified laws and regulations that currently apply or become applicable to our business both in the United States and internationally including laws and regulations related to export compliance;

• 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 identified below, and 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.

As used in this report, the terms “Rapid7,” the “company,” “we,” us," and our" mean Rapid7, Inc. and its subsidiaries unless the context indicates otherwise.

Item 1. Business

Overview

Rapid7 is a leading provider of cyber security analytics and automation, and a driving force behind the growing practice of SecOps. SecOps is the practice of aligning cyber security, IT, and DevOps teams so that security becomes an integral part of these teams' daily operations to empower organizations to innovate faster and more securely. As of December 31, 2018, over 7,800 organizations around the world trust Rapid7 to provide visibility, analytics and automation to help reduce risk, simplify cyber security and deliver better security outcomes.

Organizations of all sizes are faced with a more sophisticated and motivated set of cyber attackers. Coupled with an increasingly complex IT environment and expanding attack surface, driven by ubiquitous connectivity, globalization, mobility and expansion to the cloud, security and IT teams are struggling to maintain adequate levels of cyber security, provide visibility to their management teams, and meet increasing regulatory requirements. At the same time, they must navigate a shortage of capable cyber security professionals.

Out of these challenges there is a growing need for cyber security, IT and DevOps teams to be better aligned and to work together to identify, manage and reduce risk and more nimbly adapt to emerging threats, without adding significant resources. This need is the foundation of the evolving SecOps movement. SecOps requires shared visibility into risk and priorities, and analytics and automation that enable IT, Security and DevOps to work together to achieve significantly higher levels of productivity and success. Rapid7 is providing solutions to power SecOps success.

Our mission is to advance security through technology and expertise that simplify the complex. We seek to remove friction from every aspect of customers' security environment, making security achievable and allowing them to focus on their professional and organizational advancement.

As of December 31, 2018, we had more than 7,800 customers, including 53% of the organizations in the Fortune 100. We have experienced strong revenue growth with revenue increasing from $76.9 million in 2014 to $244.1 million in 2018.

In 2018, 81% of our revenues (under Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers (Topic 606)* (ASC 606)) and 79% of our revenues (under FASB ASC 605, *Revenue Recognition* (ASC 605)) were recurring revenues compared to 70% in 2017 under ASC 605. We incurred net losses of $55.5 million, $45.5 million and $49.0 million in 2018, 2017 and 2016, respectively, as we continued to invest for long-term growth. See Note 2, *Summary of Significant Accounting Policies*, in the notes to our consolidated financial statements included in this Annual Report on Form 10-K for additional information on our adoption, as of January 1, 2018, of ASC 606.

Our Solutions

We offer products across the four main pillars of SecOps:

- **Vulnerability Management:** Our industry-leading Vulnerability Management solutions provide enterprises with comprehensive, yet prioritized, visibility into potential cyber risks across their traditional and modern IT environment. With built-in remediation workflows, automation, and validation, our solutions are designed to help ensure that risks can be easily mitigated and the attack surfaces diminished.

- **Incident Detection and Response:** Our Incident Detection and Response (IDR) solutions are designed to enable organizations to rapidly detect and respond to cyber security incidents and breaches across physical, virtual and cloud assets. Equipped with user behavior analytics (UBA), attacker behavior analytics (ABA) and deception technology, our Security Information and Event Management (SIEM) is designed to provide comprehensive network visibility and accelerate threat investigation and response.

- **Application Security:** Our Application Security offering provides dynamic application security testing and run-time application security monitoring and protection solutions that are designed to continuously analyze web applications for security vulnerabilities.

- **Security Orchestration and Automation Response:** Our Security Orchestration and Automation Response (SOAR) solutions allow operations teams to connect disparate solutions within their cyber security, IT and development operations and build automated workflows, without requiring code, to eliminate repetitive, manual and labor-intensive tasks, resulting in measurable time and cost savings.

To complement our SecOps products, we offer a range of managed services based on our software solutions and consulting services, including incident response services, security advisory services, and deployment and training.

Insight Platform

Our cloud-native Insight Platform is at the core of our SecOps product offerings. The platform was built using our extensive experience in collecting and analyzing data to enable our customers to create and manage analytics-driven cyber security risk management programs. By utilizing our powerful, proprietary analytics to assess and understand the context and relationships around users, IT assets and cyber threats within a customer's environment, our solutions can provide our customers with specific, actionable insights for reducing cyber risk, stopping attacks, and improving productivity and outcomes.

Insight Platform Features and Benefits:

Holistic Dataset for Managing Cyber Security and Driving SecOps: We designed the Rapid7 Insight Platform to allow customers to collect their data once and leverage that same data across multiple solutions, providing shared visibility across teams, improved and automated workflows, and reducing time to value for additional solutions. Our robust data collection architecture supports gathering a wide swath of operational data from endpoints to the cloud, including key data about assets and user-specific behavior, into a unified, searchable dataset.

Agentless and Agent-Based Architecture: We developed our platform with flexible processing technologies that employ both agentless data collection and our own internally-developed endpoint agent technology, which enables rapid and seamless integration of our products into our customers' modern IT environments and provides security and IT professionals with instant visibility into their dynamic and rapidly-expanding IT ecosystem.

Fast Search: Our search technology enables IT and security professionals to search across their entire IT environment including endpoints and, unlike other machine search solutions, provides live access without having to wait for lengthy indexing processes.

Extensive Behavioral Analytics: Our Insight Platform incorporates extensive UBA and ABA to provide rapid context around users, attackers and assets involved in an incident, enabling organizations to more quickly respond to, contain and mitigate breaches. Our platform incorporates comprehensive UBA to create a behavior profile for each user and correlates every event with a user, asset or application to detect compromised credentials, lateral movement and other malicious behavior. It also uses ABA which incorporates threat intelligence curated from our security operations centers (SOCs) to find unknown variants of validated attacker behavior and creates actionable detections earlier in the attack chain. With our cloud platform, new detections can be made available to customers instantly.

Built-in, Code-less Automation: Our SOAR capabilities are not only offered stand-alone in our InsightConnect product, but are also available as a platform service that is directly built-in to other Insight Platform products to enable customers to quickly and easily automate common tasks. For example, InsightVM leverages embedded workflows for automated assisted patching and containment, allowing security and IT teams to quickly respond to high urgency vulnerabilities. With our embedded workflows, users of InsightIDR can automatically contain a compromised user or asset, saving precious time when an incident occurs.

Robust Platform and Customer Data Security: We designed our Insight Platform to provide a secure environment for our customers data. We deploy a variety of technologies and industry-leading practices that are designed to help ensure that the data collected from a customer's environment remains proprietary, secure and operational.

Enterprise-Grade Scalability and Extensible Modern Platform: Our Insight Platform provides a high level of scalability. We leverage on-premise deployment models and cloud technologies to achieve a scalable solution delivery model with a high degree of redundancy, fault tolerance and cost-effectiveness. Our technology platform provides a rich set of application programming interfaces, or APIs, and services that enable customers, partners and developers to import and export data and utilize our actionable threat intelligence and deception capabilities.

Insight Platform Product Offerings

We offer Insight Platform solutions as software-as-a-service products, on a subscription basis. Insight Platform products are available globally and reduce the need for customers to manage large, complex, data infrastructure. We offer the following cloud products across the four main pillars of SecOps:

InsightVM: Utilizing the power of our Insight Platform, InsightVM is designed to provide a fully available, scalable, and efficient way to collect vulnerability data, prioritize risk and automate remediation.

InsightVM is designed to provide prioritized guidance based on customized threat models; dynamic live dashboards that are easily customizable and queried; lightweight agents for continuous visibility; integration with cloud services, virtual infrastructure and container repositories such as dockers; in-product integration with ServiceNow, IBM Bigfix, Microsoft SCCM and Jira ticketing systems; and remediation workflow for assigning and tracking remediation progress within the product. Embedded workflows also allow Security and IT teams to automatically deploy compensating controls for vulnerabilities that cannot be patched.

InsightVM is offered through a cloud-based subscription or as a managed service. The managed service is known as Managed Vulnerability Management, which provides our resource constrained customers with a fully outsourced option for leveraging our innovation, expertise and technology.

InsightIDR: InsightIDR, our Incident Detection and Response (IDR) solution, is designed to enable organizations to rapidly detect and respond to cyber security incidents and breaches across physical, virtual and cloud assets.

InsightIDR unifies SIEM, UBA, and endpoint detection to detect stealthy attacks across today's complex networks. It analyzes the billions of events that occur daily in organizations to reduce them down to the important notable behaviors and deliver high-fidelity and prioritized alerts. In addition to identifying stealthy attacks often missed by other solutions, InsightIDR focuses the security team on issues that warrant investigation and reduces the time to investigate with its user correlation, powerful search and endpoint interrogation capabilities.

InsightIDR is designed to provide a cost-effective response to the need for SIEM. With our Metasploit community, our research and incident response services, we are continually studying and identifying the latest attacker methods. We have found ways to increase accuracy, speed processes, and achieve greater confidence, even as attacker methods change. These include built-in deception capabilities such as honeypots and automated threat intelligence feeds that quickly alert our customers to new attacker behaviors seen in the wild by our own threat hunters.

Unlike most SIEMs, InsightIDR also provides the capability to seamlessly act on many threats automatically, thus further reducing the time from detection to response. InsightIDR includes out-of-the-box automation workflows to improve analyst productivity such as automated containment to mitigate an attack. Additionally with the Insight Agent, users can kill malicious processes or quarantine infected endpoints from the network. They can also use InsightIDR to take containment actions across Active Directory, Access Management, EDR, and firewall tools.

InsightIDR is offered through a cloud-based subscription or as a managed service. The managed service is known as Managed Detection and Response, a fully outsourced service that combines our team of expert analysts with InsightIDR. When attacks are found, customers are promptly informed of all known details and our team moves to incident response, providing security teams with detailed, easy-to-follow remediation steps tailored to the environment.

InsightAppSec: InsightAppSec provides comprehensive dynamic application security testing that continuously analyzes web applications for security vulnerabilities.

The key features include: a universal translator to enable IT security professionals to analyze complex applications; customized attack simulation capabilities that allow automatic testing of workflows such as shopping carts; scanning automation; attack replay, which allows replay of vulnerabilities in real time in order to verify that vulnerabilities are exploitable and that successful remediation has occurred; continuous site monitoring, which detects changes in application ecosystems and triggers a re-scan according to configurable settings; and integration with ticketing systems.

InsightAppSec enables integration with protection technologies to automatically generate web application firewalls, or WAFs, which are custom rules that help to protect vulnerable applications while the vulnerabilities are being remediated. It supports most leading WAFs, including F5, Sourcefire and Imperva.

InsightAppSec is offered on a cloud-based subscription basis or as a managed service. The managed service is known as Managed Application Security and provides a fully outsourced option for application scanning and security testing.

InsightConnect: InsightConnect is our SOAR solution that is used by security professionals to connect their many disparate solutions and automate workflows to increase the speed with which they can identify risk and respond to incidents. With a growing library of more than 200 plugins to connect tools and easily customizable connect-and-go workflows, it allows our customers to automate manual and tedious tasks, while still leveraging their expertise when it is most critical, thereby saving time and improving efficiency. InsightConnect is offered on a cloud-based subscription basis.

Other Products

Nexpose: Nexpose is an on-premise version of our Vulnerability Management solution that enables customers to assess and remediate their overall exposure to cyber risk across their increasingly complex IT environments. Nexpose is offered through term-based software licenses.

AppSpider: AppSpider is the on-premise version of our Application Security Testing solution that provides comprehensive dynamic application security testing that continuously analyzes web applications for security vulnerabilities. AppSpider is offered through term-based software licenses.

***Metasploit*:** Metasploit is an industry-leading penetration testing software solution, developed on an open source framework. Metasploit can be used to safely simulate attacks on an organization's network in order to uncover vulnerabilities before they are exploited by cyber attackers and assess the effectiveness of an organization's existing defenses, security controls and mitigation efforts. The Metasploit open source framework is freely available and geared toward developers and security researchers. We also offer Metasploit Pro, the commercial penetration testing software based on Metasploit framework, through term-based software licenses.

InsightOps: InsightOps simplifies IT infrastructure monitoring and troubleshooting by centralizing data from across a customer's network into one secure location. With scalable and cost-effective architecture and the ability to bring together asset visibility and log management, InsightOps enables organizations to store and search structured, semi-structured and unstructured data in real time, enabling DevOps and IT professionals to centralize, search and monitor their log data in order to investigate anomalies, troubleshoot issues and conduct root cause analysis.

InsightOps is the next generation of our Logentries product. Logentries customers can upgrade to InsightOps at no additional cost and through an automated process that retains all of their data.

Our Growth Strategy

Our goal to make advanced security accessible to resource constrained enterprises of all sizes. The main drivers of our growth strategy are:

- **Continued investments in product development:** We intend to continue to invest heavily in our product development to enhance our Insight cloud platform and deliver additional products, that will allow us further penetrate and grow our addressable markets.

- **Grow our customer base:** We believe we have a strong opportunity to address the security needs of resource constrained organizations of any size. We will continue to increase investments in our sales and marketing efforts and foster the growth of our channel relationships to enable acquisition of these customers.

- **Upsell and cross-sell to our existing customer base:** We see significant opportunity to deepen our relationship with our existing customers. With a strong focus on customer experience, satisfaction, and the value proposition of the Insight platform, we intend to expand customers usage of products they own (upsell) and help them adopt additional products (cross-sell).

- **Further strengthen our customer renewal rate:** We will continue to drive customer satisfaction and renewals by offering consulting services, support, and strong investments in customer success functions. Our customer success teams provide unique expertise to help our customers improve their security outcomes, leading to higher customer satisfaction.

- **Expand our partner ecosystem:** We continue to expand our strategic partnerships with our channel partners and system integrators. Technology alliances with partners such as ServiceNow, Microsoft, AWS and Palo Alto Networks enable our customers to succeed with our technology and platform in their ecosystem and deliver more value from their security operations program.

- **International expansion:** We continue to make investments to expand our international presence. These include investments in infrastructure, sales and marketing, and strategic partnerships.

- **Strategic M&A:** We have and may continue to make acquisitions that enhance the value of our Insight platform and bolster our ability to solve emerging customer challenges, allowing us to deliver on the vision of becoming the SecOps leader.

Sources of Revenue and Transition to Subscription

We derive our revenue primarily from subscription and support fees for our products, and services. We also derive revenue from related professional services.

Last year, we accelerated our transition from a traditional perpetual license business model to a subscription business model. Under a subscription, customers pay a periodic fee for the right to use our software. A transition to a subscription business model has benefits for us and our customers. Compared to perpetual licenses, subscription-based licenses generally allow our customers to make smaller upfront investment, provide them with the flexibility to adjust capacity every year and eliminate the need for extensive infrastructure to support installation or maintain our products. We benefit from a more predictable, recurring stream of revenue. As customers make a shift from paying upfront for the use of software in the perpetual model to the new subscription model where they pay over time, reported revenue and cash flow may be lower in the short term when compared to the historical perpetual model. However, overtime we expect this business model transition to increase the life-time value of our customers.

Generally, we recognize subscription and support revenue ratably over the contract term. Our professional services revenue are derived from service contracts that are on a time and materials or fixed fee basis.

In 2018, recurring revenue, defined as revenue from term software licenses, content subscriptions, managed services, cloud-based subscriptions and maintenance and support, was 81% of total revenue under ASC 606 and 79% of total revenue under ASC 605. In 2017 and 2016, recurring revenue was 70% and 67% respectively, of total revenue under ASC 605.

Sales, Customer Support, and Marketing

We sell our solutions through direct inside and field sales team and indirect channel partner relationships.

Sales: Our sales teams focus on both new customer acquisition as well as up-selling and cross-selling additional offerings to our existing customers. Our sales teams are organized by geography, consisting of the Americas; Europe, the Middle East and Africa, or EMEA; and Asia Pacific, or APAC, as well as by target organization size. Our sales team consists of a mix of inside sales and field sales professionals that sell to small, medium and large enterprise customers. Our highly technical sales engineers help define customer use cases, manage solution evaluations and train channel partners.

We maintain a global channel partner network that complements our sales organization, particularly in EMEA, APAC and Latin America. We have established strong co-sell relationships with strategic channel partners, who provide additional leverage through customer acquisition, deal execution and providing value in securing renewals. We continue to invest in partner models that enable us to create long term customer value.

We generated 39%, 37%, and 37% of sales from channel partners, in 2018, 2017, and 2016, respectively. Our revenue is not concentrated with any individual channel partner. No channel partner represented more than 10% of our revenue in 2018, 2017 or 2016.

Customer Support: Our customer support organization is responsible for providing technical support to our customers acquired directly and through channel partners. We believe that a dedicated support team is essential to a successful customer deployment and ongoing experience, as well as overall customer satisfaction.

Marketing: We focus our marketing efforts on increasing the strength of the Rapid7 brand, communicating product advantages and business benefits, generating leads for our sales force and channel partners and driving product adoption. We deliver targeted content to demonstrate our thought leadership in security and use digital advertising methods to drive downloads of our free trial software, which deliver opportunities to our sales organization. We work with our own researchers, as well as the broader IT and security community, to share important information about vulnerabilities and threats. We share that research through our blog, social media and traditional public relations. In addition, we host regional and national events to engage both customers and prospects, deliver product training and foster community collaboration.

Consulting Services

Our Security Consulting Services enhance our ability to serve as a trusted advisor in assisting organizations to think proactively about IT security and implement strategic, analytics-driven security strategies. We believe that our role as trusted advisor helps drive better security outcomes for our customers, as well as loyalty and further usage of our products. Our offerings include Cyber Security Maturity Assessment, Incident Response Program Development, Penetration Testing, Security Program Development, Virtual CISO, IoT Security Services and Threat Modeling. In addition, we offer deployment and training services related to our products.

For example, when a breach occurs, our Incident Response Services give our customers access to our industry-leading security experts and experience, enabling customers to accelerate incident investigation, forensics, and containment. Our incident response professionals collaborate with each organization's IT security professionals on all stages of incident response from analysis through containment, remediation and cleanup.

Research and Development Efforts

We invest substantial resources in research and development to enhance our core technology platform and products, develop new end market-specific solutions and applications, and conduct product and quality assurance testing. Our technical and engineering team monitors and tests our products on a regular basis, and we maintain a regular release process to refine, update, and enhance our existing products. We also have a team of experienced security researchers who work to keep us abreast of the latest developments in the cyber security landscape. Our research and development teams are located in our offices in Cambridge, Massachusetts; Austin, Texas; Los Angeles and San Francisco, California; Toronto, Canada; Dublin, Ireland; Belfast, Northern Ireland; and Stockholm, Sweden, providing us with a broad, worldwide reach to engineering talent.

Metasploit Community: Our Metasploit product has an active community of contributors and users. This online security community provides us with a robust and growing network of active users and influencers who promote the usage of our software. Security researchers contribute modules to the Metasploit Framework that serve as a resource about real-world attacker techniques. The community also provides us with near real-time visibility into new cyber attacks as they occur and a deep understanding of attacker behaviors.

We perform industry leading security research that enables the analytics in our platform and products as well as delivers strategic value to the security community at large. The output of our research results in threat intelligence, exposure analysis and attacker awareness that we publish as well as integrate into our platform. This data is used for security research, product development, and across our services to help protect and inform our customers, partners and community. We share this data with validated educational and private security researchers, research partners, vetted threat sharing communities, and organizational security teams through our Open Data portal to foster collaboration and encourage discovery of new insights. We collect data for research purposes through two key areas:

Attacker Intelligence: We collect data from across the internet through a variety of honeypots distributed both geographically and across IP space. The honeypots collect many data types and is then analyzed to help enhance our understanding of attacker methods.

Internet Intelligence: We conduct internet-wide scans across many services and protocols to gain insight into global exposures and vulnerabilities.

This data collected is analyzed for the purpose of analytics in our platform and results in core research reports. We publish a variety of reports including The National Exposure Index, The Industry Cyber Exposure Report and Under the Hoodie. The National Exposure Index, published annually, is a census report that highlights the state of exposed internet services at the nation-state level and provides key trending information on the use of insecure protocols. The Industry Cyber Exposure Index details the attack surface, insecure service presence, email safety configurations, malware infection rates and internet supply-chain risks of Fortune 500 companies. The Under the Hoodie report sheds light on the art of penetration testing by revealing not just the process, techniques and tools that go into it, but also revealing the real-world experience of our engineers and investigators, gathered over thousands of penetration tests.

Our Customers

Our customer base has grown from approximately 3,733 customers at the end of 2014 to more than 7,800 customers as of December 31, 2018, in 131 countries, including 53% of the organizations in the Fortune 100. We define a customer as any entity that has (1) an active Rapid7 contract or a contract that expired within 90 days or less of the applicable measurement date; and for Logentries products, those customers with a contract value equal to or greater than $2,400 per year, or (2) purchased Rapid7 professional services within the 12 months preceding the applicable measurement date.

Our customers span a wide variety of industries including technology, energy, financial services, healthcare and life sciences, manufacturing, media and entertainment, retail, education, real estate, transportation, government and professional services, with customers in the finance industry representing our largest industry in 2018 at 14% of our revenue. 56% of our revenue in 2018 was generated from large enterprises, which we define as organizations that have either annual revenue greater than $1.0 billion or more than 2,500 employees, and the balance was generated from middle-market and small organizations.

Our revenue is not concentrated with any individual customer and no customer represented more than 2% of our revenue in 2018, 2017 or 2016.

Our Competition

The markets we operate in are highly competitive, fragmented and subject to technology change and innovation. Our primary competitors in Vulnerability Management include Qualys and Tenable; in Incident Detection and Response (SIEM) include Splunk, Micro Focus and LogRhythm; in Application Security include Micro Focus and IBM; in Security Orchestration and Automation Response include Phantom (Splunk) and Demisto; and finally, while the competition in our professional services business is diverse, our competitors include FireEye’s Mandiant, SecureWorks and NCC Group.

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

- product functionality;
- breadth of offerings;
- performance;
- brand name, reputation and customer satisfaction;
- ease of implementation, use and maintenance;
- total cost of ownership; and
- scalability, reliability and security.

Certain of our competitors have greater sales, marketing and financial resources, more extensive geographic presence or greater brand awareness than we do. We may face future competition in our markets from other large, established companies, as well as from emerging companies. In addition, we expect that there is likely to be continued consolidation in our industry that could lead to increased price competition and other forms of competition.

Intellectual Property

Our future success and competitive position depend in part on our ability to protect our intellectual property and proprietary technologies. To safeguard these rights, we rely on a combination of patents, trademarks, copyrights, trade secrets, employee and third-party nondisclosure agreements, licensing arrangements and other contractual protections to protect our intellectual property in the United States and other jurisdictions.

We have numerous issued patents and a number of registered and unregistered trademarks. We believe that the duration of our issued patents is sufficient when considering the expected lives of our products. We file patent applications to protect our intellectual property and have a number of patent applications pending. We require our employees, consultants and other third parties to enter into confidentiality and proprietary rights agreements and control access to software, documentation and other proprietary information. Although we rely on intellectual property rights, including trade secrets, patents, copyrights and trademarks, as well as contractual protections to establish and protect our proprietary rights, we believe that factors such as the technological and creative skills of our personnel, creation of new modules, features and functionality, and frequent enhancements to our solutions are more essential to establishing and maintaining our technology leadership position.

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

Despite our efforts to protect our proprietary technology and our intellectual property rights, unauthorized parties may attempt to copy or obtain and use our technology to develop products with the same functionality as our solution. Policing unauthorized use of our technology and intellectual property rights is difficult.

We expect that software and other solutions in our industry may be subject to third-party infringement claims as the number of competitors grows and the functionality of products in different industry segments overlaps. Certain of these third parties have made claims of infringement against us in the past and third parties may make claims of infringement against us in the future.

Employees

As of December 31, 2018, we had 1,246 full-time employees, including 247 in product and service delivery and support, 519 in sales and marketing, 324 in research and development and 156 in general and administrative. As of December 31, 2018, we had

912 full-time employees in the United States and 334 full-time employees internationally. None of our U.S. employees are covered by collective bargaining agreements. We believe our employee relations are good and we have not experienced any work stoppages.

Corporate Information

We were initially incorporated in July 2000 in Delaware. Rapid7 LLC, a limited liability company organized under the laws of the Commonwealth of Massachusetts, was formed in January 2004. In August 2004, pursuant to an exchange agreement among Rapid7 LLC and the stockholders of Rapid7, Inc., the stockholders exchanged their shares in Rapid7, Inc. for equity interests in Rapid7 LLC, after which Rapid7, Inc. was dissolved. In August 2008, Rapid7 LLC was merged with and into Rapid7 LLC, a newly-formed Delaware limited liability company. Rapid7, Inc. was reincorporated in Delaware in October 2011. In a series of transactions in November 2011, equity holders of Rapid7 LLC exchanged their equity interests in Rapid7 LLC for capital stock in Rapid7, Inc. and Rapid7 LLC became a wholly-owned subsidiary of Rapid7, Inc.

Our principal executive offices are located at 100 Summer Street, Boston, Massachusetts. Our telephone number is +1 617-247-1717. Our website address is www.rapid7.com.

"Rapid7," the Rapid7 logo, and other trademarks or service marks of Rapid7, Inc. appearing in this Annual Report on Form 10-K are the property of Rapid7, 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. The information contained on our website or information that may be accessed through links on our website is not incorporated by reference into this Annual Report on Form 10-K.

Available Information

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to these reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are made available free of charge on or through our website at *investors.rapid7.com* as soon as reasonably practicable after such reports are filed with, or furnished to, the SEC.

Item 1A. Risk Factors.

Our operations and financial results are subject to various risks and uncertainties including those described below. You should consider carefully 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, as well as our other public filings with the Securities and Exchange Commission, or the SEC, before making an investment decision. 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 adversely affected. In that event, the trading price of our common stock could decline. Please also see "Special Note Regarding Forward-Looking Statements."

Risks Related to Our Business and Industry

We are a rapidly growing company, which makes it difficult to evaluate our future prospects and may increase the risk that we will not be successful.

We are a rapidly growing company. 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. We have encountered and will continue to encounter risks and uncertainties frequently experienced by growing companies in rapidly evolving industries. 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 common stock may decline.

If we are unable to sustain our revenue growth rate, we may not achieve or maintain profitability in the future.

From the year ended December 31, 2014 to the year ended December 31, 2018, our revenue grew from $76.9 million under ASC 605 to $244.1 million under ASC 606. Although we have experienced rapid growth historically and currently have high renewal rates, we may not continue to grow as rapidly in the future and our renewal rates may decline. 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 revenues from existing customers through increased or broader use of our products and professional services within their organizations;
- improve the performance and capabilities of our products through research and development;
- continue to develop our cloud-based solutions;
- maintain the rate at which customers purchase and renew subscriptions to our cloud-based solutions, content subscriptions, maintenance and support and managed services;
- continue to successfully expand our business domestically and internationally;
- continue to effectively attract and improve the productivity of our sales teams; 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 have not been profitable historically and may not achieve or maintain profitability in the future.

We have posted a net loss in each year since inception, including net losses of 55.5 million, $45.5 million and $49.0 million in the years ended December 31, 2018, 2017 and 2016, respectively. As of December 31, 2018, we had an accumulated deficit of $464.6 million. While we have experienced significant revenue growth in recent periods, we may not obtain a high enough volume of sales of our products and professional services 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. In particular, we expect to continue to expend financial and other resources on:

- research and development related to our offerings, including investments in our research and development team;
- sales and marketing, including a continued expansion of our sales organization, both domestically and internationally;
- continued international expansion of our business; and
- general and administrative expenses as we continue to implement and enhance our administrative, financial and operational systems, procedures and controls.

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.

If our products or professional services fail to detect vulnerabilities or incorrectly detect vulnerabilities, or if our products contain undetected errors or defects, our brand and reputation could be harmed, which could have an adverse effect on our business and results of operations.

If our products or professional services fail to detect vulnerabilities in our customers' cyber security infrastructure, or if our products or professional services fail to identify and respond to new and increasingly complex methods of cyber attacks, our business and reputation may suffer. There is no guarantee that our products or professional services will detect all vulnerabilities, especially in light of the rapidly changing security landscape to which we must respond. Additionally, our products may falsely detect vulnerabilities or threats that do not actually exist. For example, our Metasploit offering relies on information provided by an active community of security researchers 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 professional services and could result in negative publicity, loss of customers and sales and increased costs to remedy any problem.

Our products may also contain undetected errors or defects. Errors or defects may be more likely when a product is first introduced or as new versions are released, or when we introduce an acquired company's products. We have experienced these errors or defects in the past in connection with new products, acquired products and product upgrades and we expect that these errors or defects will be found from time to time in the future in new, acquired or enhanced products after commercial release. Defects may cause our products to be vulnerable to attacks, cause them to fail to detect vulnerabilities, or temporarily interrupt customers' networking traffic. Any errors, defects, disruptions in service or other performance problems with our products may damage our customers' businesses and could hurt our reputation. If our products or professional services 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 products. A material liability claim or other occurrence that harms our reputation or decreases market acceptance of our products may harm our business and operating results.

Many federal, state and foreign governments have enacted laws requiring companies to notify individuals of data security breaches involving their personal data. These mandatory disclosures regarding a security breach often lead to widespread negative publicity, and any association of us with such publicity may cause our customers to lose confidence in the effectiveness of our data security solutions. 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 products or professional services, could adversely affect the market's perception of our offerings and subject us to legal claims.

Our business and operations are experiencing rapid growth, and if we do not appropriately manage our future growth, or are unable to scale our systems and processes, our operating results may be negatively affected.

We are a rapidly growing company. To manage future growth effectively, we will need to continue to improve and expand our internal information technology systems, financial infrastructure, and operating and administrative systems and controls, which we may not be able to do efficiently, in a timely manner or at all. Any future growth would add complexity to our organization and require effective coordination across our organization. Failure to manage any future growth effectively could result in increased costs, harm our results of operations and lead to customers or investors losing confidence in our internal systems and processes, which could harm our results of operations and stock price.

The market for Security Operations is new and unproven and may not grow.

We believe our future success will depend in large part on the growth, if any, in the market for Security Operations, or SecOps. This market is nascent, and as such, it is difficult to predict important market trends, including the potential growth, if any. To date, the majority of enterprise spend on cyber security has been on threat protection products, such as network, endpoint and web security that are designed to stop threats from penetrating corporate networks. Organizations that use these security products may believe that their existing security solutions sufficiently protect access to their sensitive business data. Therefore, they may continue allocating their cyber security budgets to these products and may not adopt our products and professional services in addition to, or in lieu of, such traditional products. Further, sophisticated cyber attackers are skilled at adapting to new technologies and developing new methods of gaining access to organizations' sensitive business data, and changes in the nature of advanced cyber threats could result in a shift in IT budgets away from products and professional services such as ours. In addition, while recent high visibility attacks on prominent enterprises and governments have increased market awareness of the problem of cyber attacks, if cyber attacks were to decline, or enterprises or governments perceived that the general level of cyber attacks have declined, our ability to attract new customers and expand our sale to existing customers could be materially and adversely affected. If products and professional services such as ours are not viewed by organizations as necessary, or if customers do not recognize the benefit of our offerings as a critical layer of an effective cyber security strategy, our revenue may not grow as quickly as expected, or may decline, and the trading price of our stock could suffer. It is therefore difficult to predict how large the market will be for our solutions.

In addition, it is difficult to predict customer adoption and renewal rates, customer demand for our products and professional services, the size and growth rate of the market for SecOps, the entry of competitive products or the success of existing competitive products. Any expansion in our market depends on a number of factors, including the cost, performance and perceived value associated with our offerings and those of our competitors. If these offerings do not achieve widespread adoption or there is a reduction in demand for solutions in our market caused by a lack of customer acceptance, technological challenges, competing technologies and products, decreases in corporate spending, weakening economic conditions, or otherwise, it could result in reduced customer orders, early terminations, reduced renewal rates or decreased revenue, any of which would adversely affect our business operations and financial results. You should consider our business and prospects in light of the risks and difficulties we face in this new and unproven market.

We face intense competition in our market.

The market for SecOps solutions is highly fragmented, intensely competitive and constantly evolving. We compete with an array of established and emerging security software and services vendors. With the introduction of new technologies and market entrants, we expect the competitive environment to remain intense going forward. Our primary competitors in Vulnerability Management include Qualys and Tenable; in Incident Detection and Response (SIEM) include Splunk, Micro Focus and LogRhythm; in Application Security include Micro Focus and IBM; in Security Orchestration and Automation Response include Phantom (Splunk) and Demisto; and finally, while the competition in our professional services business is diverse, our competitors include FireEye's Mandiant, SecureWorks and NCC Group.

Some of our actual and potential competitors have advantages over us, such as longer operating histories, significantly greater financial, technical, marketing or other resources, stronger brand and business user recognition, larger and more mature intellectual property portfolios and broader global distribution and presence. In addition, our industry is evolving rapidly and is becoming increasingly competitive. Larger and more established companies may focus on security operations and could directly compete with us. 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. 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 spending by customers, and will therefore not be as susceptible to economic downturns.

Furthermore, our current and potential competitors may establish cooperative relationships among themselves or with third parties that may further enhance their resources and product 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, or we may be required to expend significant resources in order to remain competitive. If our competitors are more successful than we are in developing new product and service offerings or in attracting and retaining customers, our business, financial condition and results of operations could be adversely affected.

Our sales cycle may be 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 products. We sell our products 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. 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.

Organizations may be reluctant to purchase cloud-based offerings due to the actual or perceived vulnerability of cloud solutions.

Some organizations have been reluctant to use cloud solutions for cyber security, such as our InsightVM, Insight IDR, InsightAppSec, InsightOps, Logentries and InsightConnect, because they have concerns regarding the risks associated with the reliability or security of the technology delivery model associated with this solution. If we or other cloud service providers experience security incidents, breaches of customer data, disruptions in service delivery or other problems, the market for cloud solutions as a whole may be negatively impacted, which could harm our business.

Our quarterly operating results may vary from period to period, which could result in our failure to meet expectations with respect to operating results and cause the trading price of our stock to decline.

Our operating results, including the levels of our revenue, annualized recurring revenue, renewal rates, cash flow, deferred revenue and gross margins, 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 products and professional services;
- customer renewal rates and ability to attract new customers;
- the extent to which customers purchase additional products or professional services;
- the mix of our products, as well as professional services, sold during a period;
- the ability to successfully grow our sales of our cloud-based solutions;
- the level of perceived threats to organizations’ cyber security;
- network outages, security breaches, technical difficulties or interruptions with our products;
- changes in the growth rate of the markets in which we compete;
- sales of our products and professional services due to seasonality and customer demand;
- the timing and success of new product or service introductions by us or our competitors or any other changes in the competitive landscape of our industry, including consolidation among our competitors;
- the introduction or adoption of new technologies that compete with our offerings;
- decisions by potential customers to purchase cyber security products or professional services from other vendors;
- the amount and timing of operating costs and capital expenditures related to the operations and expansion of our business;
- price competition;

- our ability to successfully manage and integrate any future acquisitions of businesses, including without limitation the amount and timing of expenses and potential future charges for impairment of goodwill from acquired companies;
- our ability to increase, retain and incentivize the channel partners that market and sell our products and professional services;
- our continued international expansion and associated exposure to changes in foreign currency exchange rates, including any fluctuations caused by uncertainties relating to Brexit;
- the amount and timing of operating expenses related to the maintenance and expansion of our business, operations and infrastructure;
- the announcement or adoption of new regulations and policy mandates or changes to existing regulations and policy mandates;
- the cost or results of existing or unforeseen litigation and intellectual property infringement;
- the strength of regional, national and global economies;
- the impact of natural disasters or manmade problems such as terrorism or war; and
- future accounting pronouncements or changes in our accounting policies.

Each factor above or discussed elsewhere herein or the cumulative effect of some of these factors may result in fluctuations in our operating results. This variability and unpredictability could result in our failure to meet expectations with respect to operating results, or those of securities analysts or investors, for a particular period. If we fail to meet or exceed expectations for our operating results for these or any other reasons, the market price of our stock could fall and we could face costly lawsuits, including securities class action suits.

If we do not continue to innovate and offer products and professional services that address the dynamic threat landscape, we may not remain competitive, and our revenue and operating results could suffer.

The SecOps market is characterized by rapid technological advances, changes in customer requirements, frequent new product introductions and enhancements and evolving industry standards. Our success also depends, in part, upon our ability to anticipate industry evolution and introduce or acquire new products and professional services to keep pace with technological developments and market requirements both within our industry and in related industries. While we continue to invest significant resources in research and development in order to ensure that our products continue to address the cyber security risks that our customers face, the introduction of products and professional services embodying new technologies could render our existing products or professional services obsolete or less attractive to customers. In addition, developing new products and product enhancements is expensive and time consuming, 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, in a way that sufficiently differentiates us from competing solutions such that customers choose to purchase our solutions. If any of our competitors implement new technologies before we are able to implement them or better anticipate the innovation opportunities in related industries, those competitors may be able to provide more effective or more cost-effective solutions than ours. In addition, we may experience technical problems and additional costs as we introduce new products and product enhancements, deploy future iterations of our products and integrate new products with existing customer systems. If any of these problems were to arise, our business, financial condition and results of operations could be adversely affected.

To date, we have derived a substantial majority of our revenue from customers using our vulnerability management offerings. If we are unable to renew or increase sales of our vulnerability management offerings, or if we are unable to increase sales of our other offerings, our business and operating results could be adversely affected.

Although we continue to introduce and acquire new products and professional services, we derive and expect to continue to derive a majority of our revenue from customers using certain of our vulnerability management offerings, InsightVM, Nexpose and Metasploit. Greater than half of our revenue was attributable to InsightVM, Nexpose and Metasploit in each of our last three fiscal years. As a result, our operating results could suffer due to:

- any decline in demand for our vulnerability management offerings;
- failure of our vulnerability management offerings to detect vulnerabilities in our customers’ IT environments;

- the introduction of products and technologies that serve as a replacement or substitute for, or represent an improvement over, our vulnerability management offerings;
- technological innovations or new standards that our vulnerability management offerings do not address;
- sensitivity to current or future prices offered by us or competing solutions; and
- our inability to release enhanced versions of our vulnerability management offerings on a timely basis in response to the dynamic threat landscape.

Our inability to renew or increase sales of our vulnerability management offerings, including content subscriptions, maintenance and support and managed services, or a decline in prices of our vulnerability management offerings would harm our business and operating results more seriously than if we derived significant revenues from a variety of offerings. In addition, we have introduced several cloud-based subscription products, including InsightVM, InsightIDR, InsightAppSec, InsightOps and InsightConnect. These products are relatively new, and it is uncertain whether they will gain the market acceptance we expect. Any factor adversely affecting sales of our products or professional services, including release cycles, market acceptance, competition, performance and reliability, reputation and economic and market conditions, could adversely affect our business and operating results.

Our business and growth depend substantially on customers renewing their subscriptions with us. Any decline in our customer renewals or failure to convince customers to expand their use of our subscription offerings could adversely affect our future operating results.

Our subscription offerings are term basis. In order for us to improve our operating results, it is important that our existing 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 with us and we may not be able to accurately predict customer renewal rates. Our customers' renewal rates may decline or fluctuate as a result of a number of factors, including their satisfaction or dissatisfaction with our new or current product offerings, our pricing, the effects of economic conditions, competitive offerings or alterations or reductions in our customers' spending levels. If our customers do not renew their agreements with us or renew on terms less favorable to us, our revenues and results of operations may be adversely impacted.

Our future growth is also affected by our ability to sell additional offerings to our existing customers, which depends on a number of factors, including customers' satisfaction with our products and services, the process of our offerings and general economic conditions. If our efforts to cross-sell and upsell to our customers are unsuccessful, the rate at which our business grows might decline.

If we are unable to successfully hire, train, manage and retain qualified personnel, especially those in sales and marketing and research and development, our business may suffer.

We continue to be substantially dependent on our sales force to obtain new customers and increase sales with existing customers. Our ability to successfully pursue our growth strategy will also depend on our ability to attract, motivate and retain our personnel, especially those in sales, marketing and research and development. We face intense competition for these employees from numerous technology, software and other companies, especially in certain geographic areas in which we operate, and we cannot ensure that we will be able to attract, motivate and/or retain sufficient qualified employees in the future. If we are unable to attract new employees and retain our current employees, we may not be able to adequately develop and maintain new products or professional services or market our existing products or professional services at the same levels as our competitors and we may, therefore, lose customers and market share. Our failure to attract and retain personnel, especially those in sales and marketing and research and development positions for which we have historically had a high turnover rate, could have an adverse effect on our ability to execute our business objectives and, as a result, our ability to compete could decrease, our operating results could suffer and our revenue could decrease. Even if we are able to identify and recruit a sufficient number of new hires, these new hires will require significant training before they achieve full productivity and they may not become productive as quickly as we would like or at all.

We believe that our corporate culture has been a critical component to our success. We have invested substantial time and resources in building our team. As we grow and mature as a public company, we may find it difficult to maintain our corporate culture. Any failure to preserve our culture could negatively affect our future success, including our ability to attract, motivate and retain personnel and effectively focus on and pursue our business strategy.

If Metasploit were to be used by attackers to exploit vulnerabilities in the cyber security infrastructures of third parties, our reputation and business could be harmed.

Although Metasploit is a penetration testing tool that is intended to allow organizations to test the effectiveness of their cyber security programs, Metasploit has in the past and may in the future be used to exploit vulnerabilities in the cyber security infrastructures of third parties. While we have incorporated certain features into Metasploit to deter misuse, there is no guarantee that these controls will not be circumvented or that Metasploit will only be used defensively or for research purposes. Any actual or perceived security breach, malicious intrusion or theft of sensitive data in which Metasploit is believed to have been used could adversely affect perception of, and demand for, our offerings. Further, the identification of new exploits and vulnerabilities by the Metasploit community may enhance the knowledge base of cyber attackers or enable them to undertake new forms of attacks. If any of the foregoing were to occur, we could suffer negative publicity and loss of customers and sales, as well as possible legal claims.

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

We market and sell our products and professional services throughout the world and have personnel in many parts of the world. For the years ended December 31, 2018, 2017 and 2016, operations located outside of North America generated 15%, 15% and 14%, respectively, of our revenue. 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 you that our expansion efforts into international markets will be successful in creating further demand for our products and professional services or in effectively selling our products 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;
- economic or political instability or uncertainty in foreign markets and around the world, such as related to the United Kingdom’s referendum in June 2016 in which voters approved an exit from the European Union, commonly referred to as “Brexit”;
- foreign currency exchange rate fluctuations;
- 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 and managing 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;
- costs of compliance with U.S. laws and regulations for foreign operations, including the U.S. Foreign Corrupt Practices Act, 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;
- 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, 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 products; and
- costs of compliance with multiple and possibly overlapping tax structures.

Our business, including the sales of our products 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 products 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 are also monitoring developments related to Brexit, which could have significant implications for our business. Brexit could lead to economic and legal uncertainty, including significant volatility in global stock markets and currency exchange rates, and differing laws and regulations as the United Kingdom determines which European Union laws to replace or replicate. Any of these effects of Brexit, among others, could adversely affect our operations in the United Kingdom and our financial results.

As a cyber security provider, we are a target of cyber attacks and other cyber risks that could adversely impact our reputation and operating results.

We sell cyber security and data analytics products. As a result, we have been and will be a target of cyber attacks designed to impede the performance of our products, penetrate our network security or the security of our cloud platform or our internal systems, or that of our customers, misappropriate proprietary information and/or cause interruptions to our services. For example, because Metasploit serves as an introduction to hacking for many individuals, a successful cyber attack on us may be perceived as a victory for the cyber attacker, thereby increasing the likelihood that we may be a target of cyber attacks, even absent financial motives. Further, if our systems are breached as a result of third party action, employee error or misconduct, attackers could learn critical information about how our products operate to help protect our customers' IT infrastructures from cyber risk, thereby making our customers more vulnerable to cyber attacks. In addition, if actual or perceived breaches of our network security occur, they could adversely affect the market perception of our products, negatively affecting our reputation, and may expose us to the loss of our proprietary information or information belonging to our customers, investigations or litigation and possible liability, including injunctive relief and monetary damages. Such security breaches could also divert the efforts of our technical and management personnel. In addition, such security breaches could impair our ability to operate our business and provide products to our customers. If this happens, our reputation could be harmed, our revenue could decline and our business could suffer.

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

Our future performance depends on the continued services and contributions of our senior management, particularly Corey Thomas, our President and Chief Executive Officer, and other key employees to execute on our business plan and to identify and pursue new opportunities and product innovations. 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 the services of our senior management, particularly Mr. Thomas, or other key employees for any reason could significantly delay or prevent our development or the achievement of our strategic objectives and harm our business, financial condition and results of operations.

We recognize a significant percentage of our revenue ratably over the term of our agreements with customers, and as a result, downturns or upturns in sales may not be immediately reflected in our operating results.

We recognize a significant percentage of our revenue ratably over the various terms of our agreements with customers. 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 products and potential changes in our rate of renewals may not be fully reflected in our results of operations until future periods. Our model also makes it difficult for us to rapidly increase our revenue through additional sales in any period, as revenue from new customers generally will be recognized over the applicable term.

We also intend to increase our investment in research and development, sales and marketing, and general and administrative functions and other areas to grow our business. We are likely to recognize the costs associated with these increased investments earlier than some of the anticipated benefits and the return on these investments may be lower, or may develop more slowly, than we expect, which could adversely affect our operating results.

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.

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

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

We utilize third-party data centers located in North America, in addition to operating and maintaining certain elements of our own network infrastructure. We also utilize other cloud providers, such as Amazon Web Services, for our Insight Platform infrastructure. Some elements of our complex infrastructure 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. More specifically, certain of our products, in particular our cloud-based products, are hosted on cloud providers such as Amazon Web Services, which provides us with computing and storage capacity. Interruptions in our systems or the third-party systems on which we rely, whether due to system failures, computer viruses, physical or electronic break-ins, or other factors, could affect the security or availability of our products, network infrastructure and website.

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.

Additionally, 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 at any time. If we are unable to maintain or renew our agreements with these providers on commercially reasonable terms or if in the future we add additional data center facilities or third-party hosting providers, we may experience additional costs or downtime or delays as we transition our operations.

Any disruptions or other performance problems with our products could harm our reputation and business and may damage our customers' businesses. 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 or our products.

If we fail to manage our operations infrastructure, our customers may experience service outages and/or delays.

Our future growth is dependent upon our ability to continue to meet the expanding needs of our customers and to attract new customers. As existing customers gain more experience with our products, they may broaden their reliance on our products, which will require that we expand our operations infrastructure. We also seek to maintain excess capacity in our operations infrastructure to facilitate the rapid provision of new customer deployments. In addition, we need to properly manage our technological operations infrastructure in order to support changes in hardware and software parameters and the evolution of our products, all of which require significant lead time. If we do not accurately predict our infrastructure requirements, our existing customers may experience service outages that may subject us to financial penalties, financial liabilities and customer losses. If our operations infrastructure fails to keep pace with increased sales, customers may experience delays as we seek to obtain additional capacity, which could adversely affect our reputation and our revenue.

If our products fail to help our customers achieve and maintain compliance with regulations and/or industry standards, our revenue and operating results could be harmed.

We generate a portion of our revenue from our vulnerability management offerings that help organizations achieve and maintain compliance with regulations and industry standards both domestically and internationally. For example, many of our customers subscribe to our vulnerability management offerings to help them comply with the security standards developed and maintained by the Payment Card Industry Security Standards Council (the PCI Council), which apply to companies that process, transmit or store cardholder data. In addition, our vulnerability management offerings are used by customers in the health care industry to help them comply with numerous federal and state laws and regulations related to patient privacy. In particular, the Health Insurance Portability and Accountability Act of 1996 (HIPAA), and the 2009 Health Information Technology for Economic and Clinical Health Act include privacy standards that protect individual privacy by limiting the uses and disclosures of individually identifiable health information and implementing data security standards. The foregoing and other state, federal and international legal and regulatory regimes may affect our customers' requirements for, and demand for, our products and professional services. Governments and industry organizations, such as the PCI Council, may also adopt new laws, regulations or requirements, or make changes to existing laws or regulations, that could impact the demand for, or value of, our products. If we are unable to adapt our products to changing legal and regulatory standards or other requirements in a timely manner, or if our products fail to assist with, or expedite, our customers' cyber security defense and compliance efforts, our customers may lose confidence in our products and could switch to products offered by our competitors or threaten or bring legal actions against us. In addition, if laws, regulations or standards related to data security, vulnerability management and other IT security and compliance requirements are relaxed or the penalties for non-compliance are changed in a manner that makes them less onerous, our customers may view government and industry regulatory compliance as less critical to their businesses, and our customers may be less willing to purchase our products. In any of these cases, our revenue and operating results could be harmed.

In addition, government and other customers may require our products to comply with certain privacy, security or other certifications and standards. If our products are late in achieving or fail to achieve or maintain compliance with these certifications and standards, or our competitors achieve compliance with these certifications and standards, we may be disqualified from selling our products to such customers, or may otherwise be at a competitive disadvantage, either of which would harm our business, results of operations, and financial condition.

If our customers are unable to implement our products successfully, customer perceptions of our offerings may be impaired or our reputation and brand may suffer.

Our products are deployed in a wide variety of IT environments, including large-scale, complex infrastructures. Some of our customers have experienced difficulties implementing our products in the past and may experience implementation difficulties in the future. If our customers are unable to implement our products successfully, customer perceptions of our offerings may be impaired or our reputation and brand may suffer.

In addition, in order for our products to achieve their functional potential, our products must effectively integrate into our customers' IT infrastructures, which have different specifications, utilize varied protocol standards, deploy products from multiple different vendors and contain multiple layers of products that have been added over time. Our customers' IT infrastructures are also dynamic, with a myriad of devices and endpoints entering and exiting the customers' IT systems on a regular basis, and our products must be able to effectively adapt to and track these changes.

Any failure by our customers to appropriately implement our products or any failure of our products to effectively integrate and operate within our customers' IT infrastructures could result in customer dissatisfaction, impact the perceived reliability of our products, result in negative press coverage, negatively affect our reputation and harm our financial results.

Future acquisitions could disrupt our business and harm our financial condition and operating results.

In order to remain competitive, we have in the past and may in the future seek to acquire additional businesses, products or technologies. The environment for acquisitions in our industry is very competitive and acquisition candidate purchase prices will likely exceed what we would prefer to pay. We also may not find suitable acquisition candidates, and acquisitions we complete may be unsuccessful.

Achieving the anticipated benefits of future acquisitions will depend in part upon whether we can integrate acquired operations, products and technology in a timely and cost-effective manner and successfully market and sell these as new product offerings, including, for example, the operations, products and technology acquired in connection with our acquisition of tCell.io, Inc. (TCell) in October 2018. The acquisition of tCell's web application threat defense and monitoring technology is intended to help our customers better assess, monitor and protect against application based attacks. The process of integrating a new business or technology into our product offerings, such as tCell and its technology, requires, among other things, coordination of administrative, sales and marketing, accounting and finance functions, and expansion of information and management systems. Integration of any future acquisition may prove to be difficult due to the necessity of coordinating geographically separate organizations and integrating personnel with disparate business backgrounds and accustomed to different corporate cultures. The acquisition and integration processes are complex, expensive and time consuming, and may cause an interruption of, or loss of momentum in, product development, sales activities and operations of both companies. Further, we may be unable to retain key personnel of an acquired company following the acquisition, including certain employees which we acquired in connection with our acquisition of tCell. If we are unable to effectively execute or integrate acquisitions, our business, financial condition and operating results could be adversely affected.

In addition, we may only be able to conduct limited due diligence on an acquired company's operations or may discover that the products or technology acquired were not as capable as we thought based upon the initial or limited due diligence. 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.

If we are unable to maintain successful relationships with our channel partners, our business operations, financial results and growth prospects could be adversely affected.

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 anticipate that we will continue to rely on these partners in order to help facilitate sales of our offerings as part of larger purchases in the United States and to grow our business internationally. For 2018, 2017 and 2016, we derived approximately 39%, 37%, and 37%, respectively, of our revenue from sales of products and professional services through channel partners, and the percentage of revenue derived from channel partners may increase in future periods. Our agreements with our channel partners 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. If our channel 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 products and professional services, our ability to grow our business and sell our products and professional services, 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 products 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 products and professional services or increased revenue.

If we are not able to maintain and enhance our brand, our business and operating results may be adversely affected.

We believe that maintaining and enhancing our brand identity is critical to our relationships with our customers and channel partners and to our ability to attract new customers and channel partners. The successful promotion of our brand will depend largely upon our marketing efforts, our ability to continue to offer high-quality offerings and our ability to successfully differentiate our offerings from those of our competitors. Our brand promotion activities may not be successful or yield increased revenues. In addition, independent industry analysts often provide reviews of our offerings, as well as those of our competitors, and perception of our offerings in the marketplace may be significantly influenced by these reviews. If these reviews are negative, or less positive as compared to those of our competitors' products and professional services, our brand may be adversely affected.

Moreover, it may be difficult to maintain and enhance our brand in connection with sales through channel or strategic partners. The promotion of our brand requires us to make substantial expenditures, and we anticipate that the expenditures will increase as our market becomes more competitive, as we expand into new markets and as more sales are generated through our channel partners. To the extent that these activities yield increased revenues, these revenues may not offset the increased expenses we incur. If we do not successfully maintain and enhance our brand, our business may not grow, we may have reduced pricing power relative to competitors with stronger brands, and we could lose customers and channel partners, all of which would adversely affect our business operations and financial results.

Failure to maintain high-quality customer support could have a material adverse effect on our business.

Once our products are deployed within our customers' networks, our customers depend on our technical and other customer support services to resolve any issues relating to the implementation and maintenance of our products. If we do not effectively assist our customers in deploying our products, help our customers quickly resolve post-deployment issues or provide effective ongoing support, our ability to renew or sell additional products or professional services to existing customers would be adversely affected and our reputation with potential customers could be damaged. Further, to the extent that we are unsuccessful in hiring, training and retaining adequate technical and customer success personnel, our ability to provide adequate and timely support to our customers will be negatively impacted, and our customers' satisfaction with our offerings will be adversely affected.

We rely on third-party software to operate certain functions of our business.

We rely on software vendors to operate certain critical functions of our business, including financial management, customer relationship management and human resource management. If we experience difficulties in implementing new software or if these services become unavailable due to extended outages or interruptions or because they are no longer available on commercially reasonable terms or prices, our expenses could increase, our ability to manage our finances could be interrupted and our processes for managing sales of our solutions and supporting our customers could be impaired until equivalent services, if available, are identified, obtained and integrated, all of which could harm our business.

We use third-party software and data that may be difficult to replace or that may cause errors or failures of our solutions, which could lead to lost customers or harm to our reputation and our operating results.

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

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

Our products contain third-party open source software components, and our failure to comply with the terms of the underlying open source software licenses could restrict our ability to sell our products.

Our products contain software licensed to us by third parties under so-called “open source” licenses, including the GNU General Public License, the GNU Lesser General Public License, the BSD License, the Apache License and others. 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.

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 products 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 products. The terms of certain open source licenses require us to release the source code of our applications and to make our applications available under those open source licenses if we combine or distribute our applications with open source software in a certain manner. In the event that portions of our applications 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, those applications or otherwise be limited in the licensing of our applications. Disclosing our proprietary source code could allow our competitors to create similar products with lower development effort and time and ultimately, could result in a loss of sales for us. Disclosing the source code of our proprietary software could also make it easier for cyber attackers and other third parties to discover vulnerabilities in or to defeat the protections of our products, which could result in our products failing to provide our customers with the security they expect. Any of these events could have a material adverse effect on our business, operating results and financial condition.

Our technology alliance partnerships expose us to a range of business risks and uncertainties that could have a material adverse impact on our business and financial results.

We have entered, and intend to continue to enter, into technology alliance partnerships with third parties to support our future growth plans, including with certain of our actual or potential competitors. For example, through these technology alliance partnerships, we integrate with certain third-party application program interfaces, or APIs, which enhance our data collection capabilities in our customers’ IT environments. If these third parties no longer allow us to integrate with their APIs, or if we determine not to maintain these integrations, the functionality of our products may be reduced and our products may not be as marketable to certain potential customers. Technology alliance partnerships require significant coordination between the parties involved, particularly if a partner requires that we integrate its products with our products. Further, we have invested and will continue to invest significant time, money and resources to establish and maintain relationships with our technology alliance partners, but we have no assurance that any particular relationship will continue for any specific period of time, result in new offerings that we can effectively commercialize or result in enhancements to our existing offerings. In addition, while we believe that entering into technology alliance partnerships with certain of our actual or potential competitors is currently beneficial to our competitive position in the market, such partnerships may also give our competitors insight into our offerings that they may not otherwise have, thereby allowing them to compete more effectively against us.

The continued utility of Metasploit depends in part on the continued contributions from security researchers.

Our Metasploit product relies on information provided by an active community of security researchers who contribute new exploits, attacks and vulnerabilities. We expect that the continued contributions from these third parties will both enhance the robustness of Metasploit and also support our sales and marketing efforts. However, to the extent that the information provided by these third parties is inaccurate or malicious, the potential for false indications of security vulnerabilities and susceptibility to attack increases, which could adversely impact market acceptance of our products and professional services and could result in negative publicity, loss of customers and sales and increased costs to remedy any problem. Further, to the extent that our community of third parties is reduced in size or participants become less active, we may lose valuable insight into the dynamic threat landscape and our ability to quickly respond to new exploits, attacks and vulnerabilities may be reduced.

A portion of our revenue is generated by sales to government entities, which are subject to a number of challenges and risks.

Selling to government entities can be highly competitive, expensive and time consuming, and often requires significant upfront time and expense without any assurance that we will win a sale. Government demand and payment for our products and professional services may also be impacted by public sector budgetary cycles and funding authorizations, with funding reductions or delays adversely affecting public sector demand for our offerings. Government entities also have heightened sensitivity surrounding the purchase of cyber security solutions due to the critical importance of their IT infrastructures, the nature of the information contained within those infrastructures and the fact that they are highly-visible targets for cyber attacks. Accordingly, increasing sales of our products and professional services to government entities may be more challenging than selling to commercial organizations. Further, in the course of providing our products and professional services to government 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.

We are exposed to fluctuations in currency exchange rates, which could negatively affect our financial condition and results of operations.

Our reporting currency is the U.S. dollar and we generate a majority of our revenue in U.S. dollars. However, for each of the years ended December 31, 2018, 2017 and 2016 we incurred 13% of our expenses outside of the United States in foreign currencies, primarily the British pound sterling and euro, principally with respect to salaries and related personnel expenses associated with our sales and research and development operations. Additionally, for the years ended December 31, 2018, 2017 and 2016, 7%, 5% and 5%, respectively, of our revenue was generated in foreign currencies. Accordingly, changes in exchange rates may have an adverse effect on our business, operating results and financial condition. The exchange rate between the U.S. dollar and foreign currencies has fluctuated in recent years and may fluctuate substantially in the future. To date, we have not engaged in any hedging strategies, and any such strategies, such as forward contracts, options and foreign exchange swaps related to transaction exposures that we may implement to mitigate this risk may not eliminate our exposure to foreign exchange fluctuations.

Changes in financial accounting standards may adversely impact our reported results of operations.

A change in accounting standards or practices could adversely affect our operating results and may even affect our reporting of transactions completed before the change is effective. New accounting pronouncements and varying interpretations of accounting pronouncements have occurred and may occur in the future. For example, in February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*. The ASU requires companies to recognize on the balance sheet the assets and liabilities for the rights and obligations created by leased assets. The ASU will be effective for us in the first quarter of 2019. We are currently evaluating the impact that the adoption of this new ASU will have on our consolidated financial statements. Although we have not finalized our evaluation of the impact of adoption of the ASU on our consolidated financial statements, we expect there will be a material increase to assets and liabilities related to the recognition of new right-of-use assets and lease liabilities on our balance sheet for leases currently classified as operating leases. These and other changes to existing rules or the questioning of current practices may adversely affect our operating results.

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

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 products, 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. Any debt financing that we may secure in the future could involve restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. We may not be able to obtain 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.

Risks Related to Intellectual Property, Litigation, Government Regulation, Data Collection and Catastrophic Events

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

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

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. We have registered the "Rapid7," "Nexpose" and "Metasploit" names and logos in the United States and certain other countries. We have registrations and/or pending applications for additional marks in the United States and other countries; 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 products, 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 agreements with our employees, consultants, channel partners, vendors and others. Despite our efforts to protect our proprietary technology and trade secrets, unauthorized parties may attempt to misappropriate, 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, the contractual provisions that we enter into may not prevent unauthorized use or disclosure of our proprietary technology or intellectual property rights 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. We may be unable to determine the extent of any unauthorized use or infringement of our solutions, technologies or intellectual property rights.

From time to time, legal action by us may be necessary to enforce our patents and other intellectual property rights, to protect our trade secrets, to determine the validity and scope of the intellectual property rights of others or to defend against claims of infringement or invalidity. Such litigation could result in substantial costs and diversion of resources and could result in 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 negatively affect our brand and adversely impact our business, operating results and financial condition.

Assertions by third parties of infringement or other violations by us of their intellectual property rights, whether or not correct, could result in significant costs and harm our business and operating results.

Patent and other intellectual property disputes are common in our industry. We are periodically involved in disputes brought by non-practicing entities alleging patent infringement and we may, from time to time, be involved in other such disputes in the ordinary course of our business. Some companies, including some of our competitors, own large numbers of patents, copyrights and trademarks, which they may use to assert claims against us. Many of these companies have the capability to dedicate substantially greater resources to enforce their intellectual property rights. Third parties have in the past and may in the future assert claims of infringement, misappropriation or other violations of intellectual property rights against us and we are currently involved in legal proceedings with Finjan, Inc., which has filed a complaint against us and our wholly-owned subsidiary, Rapid7

LLC, in the United States District Court, District of Delaware, alleging patent infringement. Third parties may also assert claims against our customers or channel partners, whom we typically indemnify against claims that our solutions infringe, misappropriate or otherwise violate the intellectual property rights of third parties. As the numbers of products and competitors in our market increase and overlaps occur, claims of infringement, misappropriation and other violations of intellectual property rights may increase. Any claim of infringement, misappropriation or other violation of intellectual property rights by a third party, even those without merit, could cause us to incur substantial costs defending against the claim and could distract our management from our business.

The patent portfolios of our most significant competitors are larger than ours. This disparity may increase the risk that they may sue us for patent infringement and may limit our ability to counterclaim for patent infringement or settle through patent cross-licenses. In addition, future assertions of patent rights by third parties, and any resulting litigation, may involve patent holding companies or other adverse patent owners who have no relevant product revenues and against whom our own patents may therefore provide little or no deterrence or protection. There can be no assurance that we will not be found to infringe or otherwise violate any third-party intellectual property rights or to have done so in the past.

An adverse outcome of a dispute may require us to:

- pay substantial damages, including treble damages, if we are found to have willfully infringed a third party's patents or copyrights;
- cease making, licensing or using solutions that are alleged to infringe or misappropriate the intellectual property of others;
- expend additional development resources to attempt to redesign our solutions or otherwise develop non-infringing technology, which may not be successful;
- enter into potentially unfavorable royalty or license agreements in order to obtain the right to use necessary technologies or intellectual property rights; and
- indemnify our partners and other third parties.

In addition, royalty or licensing agreements, if required or desirable, may be unavailable on terms acceptable to us, or at all, and may require significant royalty payments and other expenditures. Some licenses may also be non-exclusive, and therefore, our competitors may have access to the same technology licensed to us.

Any of the foregoing events could seriously harm our business, financial condition and results of operations.

We are subject to governmental export and import controls that could impair our ability to compete in international markets and/or subject us to liability if we are not in compliance with applicable laws.

Like other U.S.-based IT security products, our products are subject to U.S. export control and import laws and regulations, including the U.S. Export Administration Regulations and various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Control. Exports of these products must be made in compliance with these laws and regulations. Compliance with these laws and regulations is complex, and if we were to fail to comply with these laws and regulations, we and certain of our employees could be subject to substantial civil and criminal penalties, including fines for our company and responsible employees or managers, and, in extreme cases, incarceration of responsible employees and managers and the possible loss of export privileges. Complying with export control laws and regulations, including obtaining the necessary licenses or authorizations, for a particular sale may be time-consuming, is not guaranteed and may result in the delay or loss of sales opportunities. Changes in export or import laws and regulations, shifts in the enforcement or scope of existing laws and regulations, or changes in the countries, governments, persons, products or services targeted by such laws and regulations, could also result in decreased use of our products by, or in our decreased ability to export or sell our products to, existing or potential customers. A decreased use of our products or limitation on our ability to export or sell our products could adversely affect our business, financial condition and results of operations.

We also incorporate encryption technology into our products. These encryption products may be exported outside of the United States only with the required export authorizations, including by a license, a license exception or other appropriate government authorizations, including the filing of a product classification request. In addition, various countries regulate the import and domestic use of certain encryption technology, including through import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our products or could limit our customers' ability to implement our products in those countries. Governmental regulation of encryption technology and regulation of imports or exports of encryption products, or our failure to obtain required import or export approval for our products, when applicable, could harm our international sales and adversely affect our revenue. Compliance with applicable laws and regulations regarding the export and import of our products, including with respect to new products or changes in existing products, may create delays in the introduction of our products in international markets, prevent our customers with international operations from deploying our products globally or, in some cases, could prevent the export or import of our products to certain countries, governments, entities or persons altogether.

Further, U.S. export control laws and economic sanctions prohibit the shipment of certain products and services to U.S. embargoed or sanctioned countries, governments or persons. Although we take precautions to prevent our products from being provided to those subject to U.S. sanctions, such measures may be circumvented and we have in the past identified limited instances of non-compliance with these rules. After these instances were disclosed to U.S. authorities, those authorities decided to not bring enforcement actions against or impose penalties on us.

Finally, there are currently multinational efforts underway as part of the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies, or the Wassenaar Arrangement, to impose additional restrictions on certain cyber security products. Such controls have been implemented by many Wassenaar members, but are not currently in effect in the United States and may undergo substantial modification before becoming effective. To implement the controls under the Wassenaar Arrangement in the United States, the U.S. Department of Commerce's Bureau of Industry and Security (BIS), would have to amend the Export Administration Regulations (the EAR). Such amendments could include changes that impose new licensing, approval and other requirements on our commercial Metasploit products and thereby put us at a disadvantage in competing for international sales. We are closely monitoring the potential implications of the Wassenaar Arrangement on the commercial versions of Metasploit and are actively working with BIS and other U.S. government stakeholders in connection with the implementation of the controls under the Wassenaar Arrangement.

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

Our business is subject to regulation by various federal, state, local and foreign governments. In certain jurisdictions, these regulatory requirements may be more stringent than those in the United States. Noncompliance with applicable regulations or requirements could subject us to investigations, sanctions, mandatory product recalls, enforcement actions, disgorgement of profits, fines, damages, civil and criminal penalties, injunctions or other collateral consequences. If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations, and financial condition could be materially adversely affected. In addition, responding to any action will likely result in a significant diversion of management's attention and resources and an increase in professional fees. Enforcement actions and sanctions could harm our business, reputation, results of operations and financial condition.

Because our products collect and store user and related information, domestic and international privacy and cyber security concerns, and other laws and regulations, could result in additional costs and liabilities to us or inhibit sales of our products.

We, and our customers, are subject to a number of domestic and international laws and regulations that apply to online services and the internet generally. These laws, rules and regulations address a range of issues including data privacy and cyber security, and restrictions or technological requirements regarding the collection, use, storage, protection, retention or transfer of data. The regulatory framework for online services, data privacy and cyber security issues worldwide can vary substantially from jurisdiction to jurisdiction, is rapidly evolving and is likely to remain uncertain for the foreseeable future. Many federal, state and foreign government bodies and agencies have adopted or are considering adopting laws, rules and regulations regarding the collection, use, storage and disclosure of information, web browsing and geolocation data collection, data analytics, cyber security and breach notification procedures. Interpretation of these laws, rules and regulations and their application to our products and professional services in the United States and foreign jurisdictions is ongoing and cannot be fully determined at this time.

In the United States, these include rules and regulations promulgated under the authority of the Federal Trade Commission, the Electronic Communications Privacy Act, Computer Fraud and Abuse Act, HIPAA, the Gramm Leach Bliley Act and state breach notification laws, as well as regulator enforcement positions and expectations reflected in federal and state regulatory actions, settlements, consent decrees and guidance documents. Internationally, virtually every jurisdiction in which we operate has established its own data security and privacy legal frameworks with which we, and/or our customers, must comply, including the European Union's General Data Protection Regulation, (EU) 2016/679 (GDPR), which went into effect in May 2018 and is designed to update current privacy laws to better reflect the digital economy and to unify data protection within the European Union ("EU") under a single law and laws implemented by EU member states which contain derogations from, or exemptions or authorizations for the purposes of, the GDPR, or which are otherwise intended to supplement the GDPR and any legislation that replaces or converts into domestic law the GDPR or any other law relating to data protection, the processing of personal data and privacy as a consequence of the United Kingdom leaving the EU. The GDPR presents significantly greater risks, compliance burdens and costs for companies with users and operations in the European Union. Under the GDPR, fines of up to 20 million euros or up to 4% of the annual global turnover of the infringer, whichever is greater, could be imposed for significant non-compliance. These laws are broad in their application and apply when we do business with EU-based customers and when our U.S.-based customers collect and use personal data that originates from individuals resident in the EU. They also apply to transfers of information between us and our European Union-based subsidiaries, including employee information. Further, many U.S. federal and state and other foreign government bodies and agencies have introduced, and are currently considering, additional laws and regulations. Non-compliance with these laws could result in penalties or significant legal liability. We could be adversely affected if legislation or regulations are expanded to require changes in our business practices or if governing jurisdictions interpret or implement their legislation or regulations in ways that negatively affect our business, results of operations or financial condition.

In addition, to facilitate the transfer of both customer and personnel data from the European Union to the United States, we self-certified under the EU-US Privacy Shield framework on December 20, 2016. However, it is possible that Privacy Shield may also be challenged in the future, so there is some uncertainty regarding its future validity and our ability to rely on it for EU to US data transfers. The EU is monitoring the arrangement, and the EU Commissioner and the U.S. Department of Commerce carry out annual joint reviews, the first of which took place in September 2017 and the second in October 2018. Non-compliance with the transfer restrictions could result in the EU data protection authorities imposing a number of different sanctions on us until we do, including fines and, ultimately, a prohibition on transfers.

In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards that either legally or contractually apply to us. Because the interpretation and application of privacy and data protection laws are still uncertain, it is possible that these laws may be interpreted and applied in a manner that is inconsistent with our existing practices or the features of our products. We may also be subject to claims of liability or responsibility for the actions of third parties with whom we interact or upon whom we rely in relation to various services, including but not limited to vendors and business partners. If so, in addition to the possibility of fines, lawsuits and other claims, we could be required to fundamentally change our business activities and practices or modify our products, which could have an adverse effect on our business. Any inability to adequately address privacy concerns, even if unfounded, or comply with applicable privacy or data protection laws, regulations and policies, could result in additional cost and liability to us, damage our reputation, inhibit sales and adversely affect our business.

The costs of compliance with, and other burdens imposed by, the laws, rules, regulations and policies that are applicable to the businesses of our customers may limit the use and adoption of, and reduce the overall demand for, our software. Privacy or cyber security concerns, whether valid or not valid, may inhibit market adoption of our products particularly in certain industries and foreign countries.

Further, there are active legislative discussions regarding the implementation of laws or regulations that could restrict the manner in which security research is conducted and that could restrict or possibly bar the conduct of penetration testing and the use of exploits, which are an essential component of our Metasploit product and our business strategy more generally. Our failure to comply with existing laws, rules or regulations, changes to existing laws or their interpretation, or the imposition of new laws, rules or regulations, could result in additional costs and may necessitate changes to our business practices and divergent operating models, which may have a material and adverse impact on our business, results of operations, and financial condition.

Our intercompany relationships are subject to complex transfer pricing regulations, which may be challenged by taxing authorities.

We generally conduct our international operations through wholly-owned subsidiaries and report our taxable income in various jurisdictions worldwide based upon our business operations in those jurisdictions. In 2016, we completed the reorganization of our corporate structure and intercompany relationships to more closely align our corporate organization with the expansion of our international business activities. Our intercompany relationships are and will continue to be subject to complex transfer pricing regulations administered by taxing authorities in various jurisdictions. The relevant taxing authorities may disagree with our determinations as to the income and expenses attributable to specific jurisdictions. If such a disagreement were to occur, and our position were not sustained, we could be required to pay additional taxes, interest and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows and lower overall profitability of our operations. In addition, if the intended tax treatment of our reorganized corporate structure is not accepted by the applicable taxing authorities, changes in tax law negatively impact the structure or we do not operate our business consistent with the structure and applicable tax laws and regulations, we may fail to achieve any tax advantages as a result of the reorganized corporate structure, and our future operating results and financial condition may be negatively impacted.

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

As of December 31, 2018, we had federal and state net operating loss carryforwards (NOLs), of $171.2 million and $118.7 million, respectively, available to offset future taxable income, which expire in various years beginning in 2021 if not utilized. A lack of future taxable income would adversely affect our ability to utilize these NOLs before they expire. Under the provisions of the

Internal Revenue Code of 1986, as amended (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-percentage point ownership change over a three-year testing period. Based upon our analysis as of December 31, 2018, we determined that although a limitation on our historical NOLs exists, we do not expect this limitation 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. If we are limited in our ability to use our NOLs in future years in which we have taxable income, we will pay more taxes than if we were able to fully utilize our NOLs. This could adversely affect our operating results, cash balances and the market price of our common stock.

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

The U.S. government has recently enacted comprehensive tax legislation that includes significant changes to the taxation of business entities. These changes include, among others, (i) a permanent reduction to the corporate income tax rate, (ii) a partial limitation on the deductibility of business interest expense, (iii) a shift of the U.S. taxation of multinational corporations from a tax on worldwide income to a territorial system (along with certain rules designed to prevent erosion of the U.S. income tax base) and (iv) a one-time tax imposed at lower rates on accumulated offshore earnings held in cash and illiquid assets, with the latter taxed at a further reduced rate. During 2018, we completed our analysis and determined that this tax reform did not have a material impact on our effective tax rate. However, the U.S. government and other standard-setting bodies continue to interpret or issue guidance on how provisions of this tax reform will be applied or otherwise administered. As future guidance is issued, it may have an adverse effect on our business, financial condition, results of operations, or cash flows in the period such guidance is issued.

Our operating results may be harmed if we are required to collect sales and use or other related taxes for our products and professional services in jurisdictions where we have not historically done so.

Taxing jurisdictions, including state, local and foreign taxing authorities, have differing rules and regulations governing sales and use or other taxes, and these rules and regulations are subject to varying interpretations that may change over time. In particular, significant judgment is required in evaluating our tax positions and our worldwide provision for taxes. While we believe that we are currently in material compliance with our obligations under applicable taxing regimes, one or more states, localities or countries may seek to impose additional sales or other tax collection obligations on us, including for past sales. It is possible that we could face sales tax audits and that such audits could result in tax-related liabilities for which we have not accrued. A successful assertion that we should be collecting additional sales or other taxes on our offerings in jurisdictions where we have not historically done so and do not accrue for sales taxes could result in substantial tax liabilities for past sales, discourage customers from purchasing our offerings or otherwise harm our business and operating results.

In addition, our tax obligations and effective tax rates could be adversely affected by changes in the relevant tax, accounting and other laws, regulations, principles and interpretations thereof, including those relating to income tax nexus, by recognizing tax losses or lower than anticipated earnings in jurisdictions where we have lower statutory rates and higher than anticipated earnings in jurisdictions where we have higher statutory rates, by changes in foreign currency exchange rates, or by changes in the valuation of our deferred tax assets and liabilities. Although we believe our tax estimates are reasonable, the final determination of any tax audits or litigation could be materially different from our historical tax provisions and accruals, all of which could have a material adverse effect on our operating results or cash flows in the period or periods for which a determination is made.

Our business is subject to the risks of earthquakes, fire, power outages, floods and other catastrophic events, and to interruption by manmade problems such as terrorism.

A significant natural disaster, such as an earthquake, fire or a flood, or a significant power outage could have a material adverse impact on our business, operating results and financial condition. In addition, natural disasters could affect our channel partners' ability to perform services for us on a timely basis. In the event we or our channel partners are hindered by any of the events discussed above, our ability to provide our products or professional services to customers could be delayed.

In addition, our facilities and those of our third-party data centers and hosting providers are vulnerable to damage or interruption from human error, intentional bad acts, pandemics, earthquakes, hurricanes, floods, fires, war, terrorist attacks, power losses, hardware failures, systems failures, telecommunications failures and similar events. The occurrence of a natural disaster, power failure or an act of terrorism, vandalism or other misconduct, a decision by a third party to close a facility on which we rely without adequate notice, or other unanticipated problems could result in lengthy interruptions in provision or delivery of our products, potentially leaving our customers vulnerable to cyber attacks. The occurrence of any of the foregoing events could damage our systems and hardware or could cause them to fail completely, and our insurance may not cover such events or may be insufficient to compensate us for the potentially significant losses, including the potential harm to the future growth of our business, that may result from interruptions in our service as a result of system failures.

All of the aforementioned risks may be exacerbated if our disaster recovery plans or the disaster recovery plans established for our third-party data centers and hosting providers prove to be inadequate. To the extent that any of the above results in delayed or reduced customer sales, our business, financial condition and results of operations could be adversely affected.

Risks Related to our Common Stock

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

The market price of our common stock may be highly volatile and may fluctuate substantially as a result of a variety of factors, some of which are related in complex ways. Since shares of our common stock were sold in our initial public offering, or IPO, in July 2015 at a price of $16.00 per share, our stock price has ranged from an intraday low of $9.05 to an intraday high of $47.62 through February 22, 2019. Factors that may affect the market price of our common stock include:

- actual or anticipated fluctuations in our financial condition and operating results;
- variance in our financial performance from expectations of securities analysts;
- changes in our projected operating and financial results;
- changes in the prices of our products and professional services;
- changes in laws or regulations applicable to our products or professional services;
- announcements by us or our competitors of significant business developments, acquisitions or new offerings;
- our involvement in any litigation or investigations by regulators;
- our sale of our common stock or other securities in the future;
- changes in our board of directors, senior management or key personnel;
- trading volume of our common stock;
- price and volume fluctuations in the overall stock market;
- changes in the anticipated future size and growth rate of our market; and
- general economic, regulatory and market conditions.

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.

We may fail to meet our publicly announced guidance or other expectations about our business and future operating results, which would cause our stock price to decline.

We have provided and may continue to provide guidance about our business, future operating results and other business metrics. In developing this guidance, our management must make certain assumptions and judgments about our future performance. Furthermore, analysts and investors may develop and publish their own projections of our business, which may form a consensus about our future performance. Our business results may vary significantly from such guidance or that consensus due to a number of factors, many of which are outside of our control, and which could adversely affect our operations and operating results. Furthermore, if we make downward revisions of our previously announced guidance, or if our publicly announced guidance of future operating results fails to meet expectations of securities analysts, investors or other interested parties, the price of our common stock would decline.

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

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

We 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.

We are obligated to 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 have been and 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 on an annual basis. This assessment includes disclosure of any material weaknesses identified by our management in our internal control over financial reporting. During the evaluation and testing process, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert that our internal controls are effective. While we have established certain procedures and control over our financial reporting processes, we cannot assure you that these efforts will prevent restatements of our financial statements in the future.

Our independent registered public accounting firm is also required, pursuant to Section 404, to report on the effectiveness of our internal control over financial reporting beginning with this annual Report on Form 10-K. This assessment is required to include disclosure of any material weaknesses identified by our management in our internal control over financial reporting. For future reporting periods, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating. We may not be able to remediate any future material weaknesses, or to complete our evaluation, testing and any required remediation in a timely fashion.

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

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

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change in control or changes in our management. Among other things, our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

- authorize our board of directors to issue preferred stock without further stockholder action and with voting liquidation, dividend and other rights superior to our common stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent, and limit the ability of our stockholders to call special meetings;
- establish an advance notice procedure for stockholder proposals to be brought before an annual meeting, including proposed nominations of persons for director nominees;
- establish that our board of directors is divided into three classes, with directors in each class serving three-year staggered terms;

- require the approval of holders of two-thirds of the shares entitled to vote at an election of directors to adopt, amend or repeal our amended and restated bylaws or amend or repeal the provisions of our amended and restated certificate of incorporation regarding the election and removal of directors and the ability of stockholders to take action by written consent or call a special meeting;

- prohibit cumulative voting in the election of directors; and

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

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, who are responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any "interested" stockholder for a period of three years following the date on which the stockholder became an "interested" stockholder. Any of the foregoing provisions could limit the opportunity for our stockholders to receive a premium for their shares of our common stock and could also affect the price that some investors are willing to pay for our common stock.

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

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

Risks Related to our Indebtedness

We have a significant amount of debt that may decrease our business flexibility, access to capital, and/or increase our borrowing costs, and we may still incur additional debt in the future, which may adversely affect our operations and financial results. We may not have sufficient cash flow from our business to pay our substantial debt when due.

As of December 31, 2018, we had $230.0 million aggregate principal amount of indebtedness under our 1.25% convertible senior notes due 2023 (the Notes). Our indebtedness may:

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

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

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

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

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

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

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

Our ability to pay our debt when due or to refinance our indebtedness, including the Notes, depends on our future performance, which is subject to economic, financial, competitive, and other factors beyond our control. Our business may not generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures. In addition, any required repurchase of the Notes for cash as a result of a fundamental change or voluntary redemption (in each case, pursuant to the terms of the Notes) would lower our current cash on hand such that we would not have that cash available to fund operations. If we are unable to generate sufficient cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring our debt or obtaining additional equity capital on terms that may be onerous or highly dilutive. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations.

In addition, we and our subsidiaries may incur additional debt in the future. We will not be restricted under the terms of the indenture governing the Notes from incurring additional debt, securing existing or future debt, recapitalizing our debt or taking a number of other actions that are not limited by the terms of the indenture governing the Notes that could have the effect of diminishing our ability to make payments on the Notes when due.

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

In the event the conditional conversion feature of the Notes is triggered, holders of the Notes will be entitled to convert their Notes at any time during specified periods at their option. If one or more holders elect to convert their Notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation in cash, which could adversely affect our liquidity. In addition, even if holders of Notes do not elect to convert their Notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the Notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

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

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

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

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

In connection with the pricing of the Notes and the exercise by the initial purchasers of their option to purchase additional Notes, we entered into capped call transactions with certain counterparties (Capped Calls). The Capped Calls cover, subject to customary adjustments, the number of shares of our common stock initially underlying the Notes. The Capped Calls are expected to offset the potential dilution as a result of conversion of the Notes. In connection with establishing their initial hedge of the capped call transactions, the counterparties or their respective affiliates entered into various derivative transactions with respect to our common stock concurrently with or shortly after the pricing of the Notes, including with certain investors in the Notes. The counterparties or their respective affiliates may modify their hedge positions by entering into or unwinding various derivatives with respect to our common stock and/or purchasing or selling our common stock or other securities of ours in secondary market transactions prior to the maturity of the Notes (and are likely to do so on each exercise date of the capped call transactions, which are scheduled to occur during the observation period relating to any conversion of the Notes on or after February 1, 2023). We cannot make any prediction as to the direction or magnitude of any potential effect that the transactions described above may have on the price of the Notes or the shares of our common stock. Any of these activities could adversely affect the value of the Notes and our common stock.

We are subject to counterparty risk with respect to the capped call transactions.

The option counterparties are financial institutions, and we will be subject to the risk that one or more of the option counterparties may default or otherwise fail to perform, or may exercise certain rights to terminate, their obligations under the Capped Calls. Our exposure to the credit risk of the option counterparties will not be secured by any collateral. Recent global economic conditions have resulted in the actual or perceived failure or financial difficulties of many financial institutions. If an option counterparty becomes subject to insolvency proceedings, we will become an unsecured creditor in those proceedings with a claim equal to our exposure at the time under such transaction. Our exposure will depend on many factors but, generally, our exposure will increase if the market price or the volatility of our common stock increases. In addition, upon a default or other failure to perform, or a termination of obligations, by an option counterparty, we may suffer more dilution than we currently anticipate with respect to our common stock. We can provide no assurances as to the financial stability or viability of the option counterparties.

Provisions in the indenture for the Notes may deter or prevent a business combination that may be favorable to our stockholders.

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

Furthermore, the indenture will prohibit us from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes our obligations under the Notes. These and other provisions in the indenture could deter or prevent a third party from acquiring us even when the acquisition may be favorable to our stockholders.

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

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

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

Our corporate headquarters occupy approximately 75,000 square feet in Boston, Massachusetts under an operating lease that expires in August 2019. In November 2017, we entered into an agreement for a new facility in Boston, Massachusetts which will occupy approximately 147,000 square feet under a lease which is expected to commence on June 1, 2019 and expire in November 2029. We have additional U.S. offices including Los Angeles, California; Cambridge, Massachusetts; Austin, Texas; and Alexandria, Virginia. We also lease various international offices including in Toronto, Canada; Reading, United Kingdom; Belfast, Northern Ireland; Dublin, Ireland; and Singapore.

We believe that our current facilities are suitable and adequate to meet our current needs. We intend to add new facilities or expand existing facilities as we add employees, and we believe that suitable additional or substitute space will be available as needed to accommodate any such expansion of our operations.

Item 3. Legal Proceedings.

In November 2016, our wholly owned subsidiary, Rapid7 LLC, and two of our then executive officers were named as defendants in a class action lawsuit which alleged violations of certain Massachusetts wage and hour laws. In the fourth quarter of 2018, we agreed to a settlement in the amount of $0.6 million.

In October 2018, Finjan, Inc. (Finjan) filed a complaint against us and our wholly-owned subsidiary, Rapid7 LLC, in the United States District Court, District of Delaware, alleging patent infringement of seven patents held by them. In the complaint, Finjan sought unspecified damages, attorneys' fees and injunctive relief. We intend to vigorously contest Finjan's claims. This litigation is still in its early stages and the final outcome, including our liability, if any, with respect to Finjan's claims, is uncertain. 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.

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

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

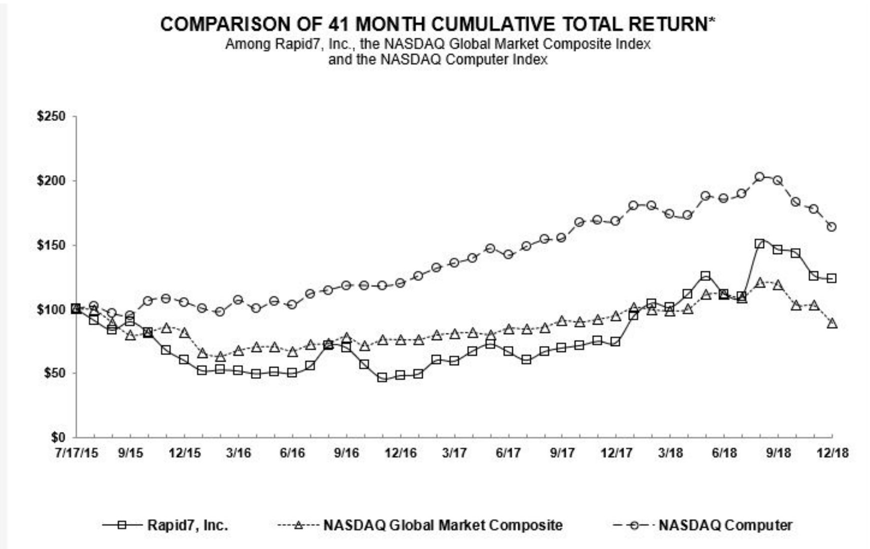
Our common stock is listed on the Nasdaq Global Market under the symbol “RPD."

As of December 31, 2018, there were 76 holders of record of our common stock, including Cede & Co., a nominee for The Depository Trust Company, or DTC, which holds shares of our common stock on behalf of an indeterminate number of beneficial owners. All of the shares of common stock held by brokerage firms, banks and other financial institutions as nominees for beneficial owners are deposited into participant accounts at DTC, and are considered to be held of record by Cede & Co. as one stockholder. Because many of our shares 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.

Stock Performance Graph

The following shall not be deemed incorporated by reference into any of our other filings under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, except to the extent we specifically incorporate it by reference into such filings.

The following graph shows a comparison from July 17, 2015 (the date our common stock commenced trading on the Nasdaq Global Market) through December 31, 2018 of the cumulative total return for an investment of $100 in our common stock, the Nasdaq Global Market and the Nasdaq Computer Index. Data for the Nasdaq Global Market and the Nasdaq Computer Index assume reinvestment of dividends.



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

	July 17, 2015	September 30, 2015	December 31, 2015	March 31, 2016	June 30, 2016	September 30, 2016	December 31, 2016	March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
Rapid7, Inc.	$ 100.00	$ 89.99	$ 59.85	$ 51.70	$ 49.76	$ 69.82	$ 48.14	$ 59.26	$ 66.57	$ 69.62	$ 73.81	$ 101.15	$ 111.63	$ 146.04	$ 123.26
Nasdaq Global Market Composite	100.00	79.58	81.67	67.59	67.13	78.33	75.93	81.02	84.92	90.86	95.11	98.64	111.77	118.97	89.07
Nasdaq Computer	100.00	95.13	105.13	106.53	102.79	118.13	117.72	135.85	148.80	154.96	168.48	173.36	185.67	199.94	163.53

Recent Sales of Unregistered Securities

None.

Use of Proceeds from Initial Public Offering of Common Stock

None.

Purchase of Equity Securities by the Issuer and Affiliated Purchasers

None.

Securities Authorized for Issuance Under Equity Compensation Plans

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

Item 6. Selected Financial Data.

The following selected historical financial data should be read in conjunction with Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and our consolidated financial statements and the related notes appearing in Item 8, “Financial Statements and Supplementary Data,” of this Annual Report on Form 10-K to fully understand the factors that may affect the comparability of the information presented below.

The selected consolidated financial data in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K.

The following selected consolidated statements of operations data for the years ended December 31, 2018, 2017 and 2016, and the consolidated balance sheet data as of December 31, 2018 and 2017, have been derived from our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The consolidated statements of operations data for the year ended December 31, 2015 and 2014 and the consolidated balance sheet data as of December 31, 2016, 2015 and 2014 have been derived from our audited consolidated financial statements not included in this Annual Report on Form 10-K.

	Year Ended December 31,				
	2018[1]	2017	2016	2015	2014
	(in thousands, except share and per share data)				
Consolidated Statement of Operations Data:					
Revenue:					
Products	$ 168,571	$ 116,748	$ 89,404	$ 63,407	$ 47,030
Maintenance and support	42,223	46,268	37,403	26,903	19,016
Professional services	33,297	37,924	30,630	20,216	10,834
Total revenue	244,091	200,940	157,437	110,526	76,880
Cost of revenue[2]:					
Products	39,810	25,583	12,447	6,921	4,557
Maintenance and support	7,678	7,491	7,105	6,002	4,495
Professional services	23,595	23,836	20,173	16,321	9,420
Total cost of revenue	71,083	56,910	39,725	29,244	18,472
Operating expenses[2]:					
Research and development	67,743	50,938	47,955	38,746	25,570
Sales and marketing	123,310	111,593	90,524	67,365	49,007
General and administrative	34,993	30,293	28,282	21,731	12,972
Total operating expense	226,046	192,824	166,761	127,842	87,549
Loss from operations	(53,038)	(48,794)	(49,049)	(46,560)	(29,141)
Interest income	3,229	862	—	—	—
Interest expense	(4,934)	(87)	131	(2,523)	(2,802)
Other income (expense), net	(336)	313	(109)	(278)	(305)
Loss before income taxes	(55,079)	(47,706)	(49,027)	(49,361)	(32,248)
Provision for (benefit from) income taxes	466	(2,236)	(27)	496	379
Net loss	(55,545)	(45,470)	(49,000)	(49,857)	(32,627)
Accretion of preferred stock to redemption value	—	—	—	(35,061)	(52,336)
Beneficial conversion feature relating to IPO participation payment	—	—	—	(14,161)	—
Net loss attributable to common stockholders	(55,545)	(45,470)	$ (49,000)	$ (99,079)	$ (84,963)
Net loss per share attributable to common stockholders, basic and diluted	$ (1.20)	$ (1.06)	$ (1.19)	$ (4.00)	$ (6.65)
Weighted-average common shares outstanding, basic and diluted	46,456,825	42,952,950	41,248,473	24,740,480	12,770,916

(1) On January 1, 2018, we adopted ASC 606 using the modified retrospective method. See Note 2, *Summary of Significant Accounting Policies*, in the notes to our consolidated financial statements included in this annual Report on Form 10-K for additional discussion of the impact of the adoption of this new accounting guidance.

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

	Year Ended December 31,				
	2018	2017	2016	2015	2014
	(in thousands)				
Stock-based compensation expense:					
Cost of revenue	$ 1,692	$ 1,085	$ 610	$ 532	$ 167
Research and development	10,822	7,205	6,054	5,010	499
Sales and marketing	7,569	5,756	6,607	3,139	496
General and administrative	7,510	5,495	4,045	2,004	997
Total stock-based compensation expense	$ 27,593	$ 19,541	$ 17,316	$ 10,685	$ 2,159
Depreciation and amortization expense:					
Cost of revenue	$ 5,673	$ 3,597	$ 2,529	$ 1,890	$ 1,275
Research and development	1,336	1,077	1,080	1,138	1,093
Sales and marketing	2,783	1,986	1,842	1,617	1,396
General and administrative	1,305	968	1,274	707	376
Total depreciation and amortization expense	$ 11,097	$ 7,628	$ 6,725	$ 5,352	$ 4,140

	As of December 31,				
	2018[(1)]	2017	2016	2015	2014
	(in thousands)				
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 99,565	$ 51,562	$ 53,148	$ 86,553	$ 36,823
Working capital, excluding deferred revenue	310,646	139,604	101,527	109,015	50,359
Total assets	559,369	284,136	243,303	230,561	86,966
Total deferred revenue	248,571	224,500	169,063	130,317	85,056
Total debt	174,688	—	—	—	16,871
Total liabilities	472,050	259,983	201,265	162,486	122,230
Redeemable convertible preferred stock	—	—	—	—	211,598
Total stockholders’ equity (deficit)	87,319	24,153	42,038	68,075	(246,862)

(1) On January 1, 2018, we adopted ASC 606 using the modified retrospective method. See Note 2, *Summary of Significant Accounting Policies*, in the notes to our consolidated financial statements included in this annual Report on Form 10-K for additional discussion of the impact of the adoption of this new accounting guidance.

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 appearing elsewhere in this Annual Report on Form 10-K. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates and beliefs. Our actual results could differ materially from those contained in or implied by any forward-looking statements. Factors that could cause or contribute to these differences include those under "Risk Factors" included in Part I, Item 1A or in other parts of this Annual Report on Form 10-K.

Overview

Rapid7 is a leading provider of cyber security analytics and automation and a driving force behind the growing practice of SecOps. SecOps is the practice of aligning cyber security, IT, and DevOps teams so that security becomes an integral part of these teams' daily operations empowering organizations to innovate faster and more securely. As of December 31, 2018, over 7,800 organizations around the world trust Rapid7 to provide visibility, analytics and automation to help reduce risk, simplify cyber security complexity and deliver better security outcomes.

Organizations of all sizes are faced with a more sophisticated and motivated set of cyber attackers. Coupled with an increasingly complex IT environment and expanding attack surface, driven by ubiquitous connectivity, globalization, mobility and expansion to the cloud, security and IT teams are struggling to maintain adequate levels of cyber security, provide visibility to their management teams, and meet increasing regulatory requirements. At the same time, they must navigate a shortage of capable cyber security professionals.

Out of these challenges there is a growing need for cyber security, IT and DevOps teams to be better aligned and to work together to identify, manage and reduce risk and more nimbly adapt to emerging threats, without adding significant resources. This need is the foundation of the evolving SecOps movement. SecOps requires shared visibility into risk and priorities, and analytics and automation that enable IT, Security and DevOps to work together to achieve significantly higher levels of productivity and success. Rapid7 is providing solutions to power SecOps success.

Our mission is to advance security through technology and expertise that simplify the complexity of cyber security. We seek to remove friction from every aspect of customers' businesses, making security achievable and allowing them to focus on their professional and organizational advancement.

We offer products across the four main pillars of SecOps:

- **Vulnerability Management:** Our industry-leading Vulnerability Management solutions provide enterprises with comprehensive, yet prioritized, visibility into potential cyber risks across their traditional and modern IT environment. With built-in remediation workflows, automation, and validation, our solutions are designed to help ensure that risks can be easily mitigated and attack surfaces diminished.

- **Incident Detection and Response:** Our Incident Detection and Response solutions are designed to enable organizations to rapidly detect and respond to cyber security incidents and breaches across physical, virtual and cloud assets. Equipped with user behavior analytics, attacker behavior analytics and deception technology, our Security Information and Event Management is designed to provide comprehensive network visibility and accelerates threat investigation and response.

- **Application Security:** Our Application Security offering provide dynamic application security testing and run-time application security monitoring and protection solutions that are designed to continuously analyze web applications for security vulnerabilities and block many types of attack automatically.

- **Security Orchestration and Automation Response:** Our Security Orchestration and Automation Response solutions allow operations teams to connect disparate solutions within their cyber security, IT and development operations and build automated workflows, without requiring code, to eliminate repetitive, manual and labor-intensive tasks, resulting in measurable time and cost savings.

To complement our SecOps products, we offer a range of managed services based on our software solutions and consulting services, including incident response services, security advisory services, and deployment and training.

We market and sell our products and professional services to organizations of all sizes globally, including mid-market businesses, enterprises, non-profits, educational institutions and government agencies. Our customers span a wide variety of industries such as technology, energy, financial services, healthcare and life sciences, manufacturing, media and entertainment, retail, education, real estate, transportation, government and professional services. As of December 31, 2018, we had over 7,800 customers in 131 countries, including 53% of the Fortune 100. Our revenue was not concentrated with any individual customer and no customer represented more than 2% of our revenue in 2018, 2017 or 2016.

We sell our products and professional services through direct inside and field sales teams and indirect channel partner relationships. Our sales teams focus on both new customer acquisition as well as up-selling and cross-selling additional offerings to our existing customers. Our sales teams are organized by geography, consisting of the Americas; Europe, the Middle East and Africa, or EMEA; and Asia Pacific, or APAC, as well as by target organization size. Our highly technical sales engineers help define customer use cases, manage solution evaluations and train channel partners. In addition, we maintain a global channel partner network that complements our sales organization, particularly in EMEA, APAC and Latin America.

Adoption of Revenue from Contracts with Customers (Topic 606)

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)* (ASC 606), which replaced the revenue recognition requirements in FASB ASC Topic 605, *Revenue Recognition* (ASC 605). The new revenue standard outlines a single, comprehensive model for accounting for revenue from contracts with customers and requires more detailed disclosure to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from such contracts. The new revenue standard provides a five-step analysis of transactions to determine when and how revenue is recognized. The core principle is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services.

We adopted ASC 606 effective on January 1, 2018 using the modified retrospective method. Under this method of adoption, we recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of accumulated deficit. See Note 2, *Summary of Significant Accounting Policies*, in the notes to our consolidated financial statements included in this Annual Report on Form 10-K for additional discussion of the impact of the adoption of ASC 606 and changes in accounting policies relating to revenue recognition and accounting for costs to obtain and fulfill a customer contract. For the year ended December 31, 2018, we recognized revenue based on ASC 606; however, revenue for the prior years was recognized based on ASC 605. Therefore, the periods are not directly comparable.

Our Business Model

We have offerings in four key areas: (1) Vulnerability Management, (2) Incident Detection and Response, (3) Application Security and (4) Security Orchestration and Automation Response.

We offer our products through a variety of delivery models to meet the needs of our diverse customer base, including:

- Cloud-based subscriptions, which provide our software capabilities to our customers through cloud access and on a Software as a Service basis. Our InsightIDR, InsightVM, InsightAppSec and InsightConnect products are offered as cloud-based subscriptions, generally with a one-year term.

- Managed services, through which we operate our products and provide our capabilities on behalf of our customers. Our Managed Vulnerability Management, Managed Application Security and Managed Detection and Response products are offered on a managed service basis, generally pursuant to one-year agreements.

- Licensed software, including both term and perpetual licenses, and the simultaneous sale of maintenance and support. Our Nexpose, Metasploit and AppSpider products are offered through term or perpetual software licenses. Our customers who purchase software licenses also purchase maintenance and support, which provides our customers with telephone and web-based support and ongoing bug fixes and repairs during the term of the maintenance and support agreement, and our customers who purchase our Nexpose and Metasploit products also purchase content subscriptions, which provide them with real-time access to the latest vulnerabilities and exploits. Our maintenance and support and content subscription agreements are typically for one-year terms. In addition, our Komand product is offered through term licenses.

We also offer various professional services across all of our offerings, including deployment and training services related to our software and cloud-based products, incident response services and security advisory services. Customers can purchase our professional services together with our product offerings or on a stand-alone basis pursuant to fixed fee or time-and-materials agreements.

An important component of our revenue growth strategy is to have our existing customers renew their agreements with us and purchase additional products from us. To assess our performance against this objective, we monitor the renewal rates of our existing customers. We calculate our renewal rate by dividing the dollar value of renewed customer agreements, including upsells and cross-sells of additional products, but excluding professional services and Logentries, in a trailing 12-month period by the dollar value of the corresponding customer agreements. We also calculate an expiring renewal rate that does not take into account any upsells or cross-sells. As a result of this methodology, we would not expect our expiring renewal rate to exceed 100%. Our renewal rate was 120%, 122% and 120% in 2018, 2017 and 2016, respectively, and our expiring renewal rate was 90%, 89% and 89% in 2018, 2017 and 2016, respectively. Our goal is to maintain strong renewal rates and continue to increase the renewal rates over time however, our renewal rates may decline or fluctuate as a result of a number of factors, including customers' satisfaction or dissatisfaction with our products and professional services, pricing, competitive offerings, economic conditions or overall changes in our customers' spending levels.

In 2018, recurring revenue, defined as revenue from term software licenses, content subscriptions, managed services, cloud-based subscriptions and maintenance and support, was 81% of total revenue under ASC 606 and 79% of total revenue under ASC 605. In 2017 and 2016, recurring revenue was 70% and 67%, respectively, of total revenue under ASC 605.

In 2018, 56% of our total revenue under ASC 606 and 59% of total revenue under ASC 605, respectively, came from deferred revenue on the balance sheet at the beginning of the respective period. In 2017 and 2016, 57% and 55%, respectively, of our total revenue came from deferred revenue on the balance sheet at the beginning of the respective periods.

Key Metrics

We monitor the following key metrics to help us measure and evaluate the effectiveness of our operations:

	Year Ended December 31,		
	2018	2017	2016
	(dollars in thousands)		
Total revenue	$ 244,091	$ 200,940	$ 157,437
Year-over-year growth	21.5%	27.6%	42.4%
Non-GAAP loss from operations	$ (20,381)	$ (26,273)	$ (29,295)
Operating cash flow	$ 6,066	$ 13,286	$ 9,112

	As of December 31,	
	2018	2017
	(dollars in thousands)	
Number of customers	7,808	7,030
Annualized recurring revenue	$ 251,819	$ 164,859
Year-over-year growth	52.7%	36.0%

Total Revenue and Growth. We are focused on driving continued revenue growth through increased sales of our products and professional services to new and existing customers. See discussion above regarding the lack of comparability for current year against historical periods given the adoption of ASC 606 as of January 1, 2018.

Non-GAAP Loss from Operations. We monitor non-GAAP loss from operations, a non-GAAP financial measure, to analyze our financial results. We believe non-GAAP loss from operations is useful to investors, as a supplement to U.S. GAAP measures, in evaluating our ongoing operational performance and enhancing an overall understanding of our past financial performance and allow for greater transparency with respect to metrics used by our management in its financial and operational decision-making. See Non-GAAP Financial Results for further information on non-GAAP loss from operations and a reconciliation of non-GAAP loss from operations to the comparable GAAP financial measure.

Operating Cash Flow. We monitor our operating cash flow as a measure of our overall business performance, which enables us to analyze our financial performance without the effects of certain non-cash items such as stock-based compensation expenses and depreciation and amortization. Additionally, operating cash flow takes into account the increase in deferred revenue as a result of increases in sales of products and services, which reflects the receipt of cash payment for products before they are recognized into revenue. Our operating cash flow is significantly impacted by the timing of commission and bonus payments, accounts payable payments and collections of accounts receivable. Additionally, as we continue to shift from a perpetual license business model to a subscription business model, our average contract lengths may decline which may decrease our annual billings and, as a result, our cash flow from operations may be negatively impacted.

Number of Customers. We believe that the size of our customer base is an indicator of our global market penetration and that our net customer additions are an indicator of the growth of our business. We define a customer as any entity that has

(1) an active Rapid7 contract or a contract that expired within 90 days or less of the applicable measurement date; and for Logentries products, those customers with a contract value equal to or greater than $2,400 per year, or (2) purchased Rapid7 professional services within the 12 months preceding the applicable measurement date.

Annualized Recurring Revenue and Growth. Annualized Recurring Revenue *(*ARR) is a financial measure that we define as the annual value of all recurring revenue related to contracts in place at the end of the quarter. ARR should be viewed independently of revenue and deferred revenue as ARR is an operating metric and is not intended to be combined with or replace these items. ARR is not a forecast of future revenue which can be impacted by contract start and end dates and renewal rates and does not include revenue reported as perpetual license or professional services revenue in our consolidated statement of operations.

Non-GAAP Financial Results

To supplement our consolidated financial statements, which are prepared and presented in accordance with GAAP, we provide investors with certain non-GAAP financial measures, including non-GAAP gross profit, non-GAAP loss from operations, non-GAAP net loss, non-GAAP net loss per share and adjusted EBITDA. The presentation of the non-GAAP financial measures is not intended to be considered in isolation or as a substitute for, or superior to, the financial information prepared and presented in accordance with GAAP. We use these non-GAAP financial measures for financial and operational decision-making purposes and as a means to evaluate period-to-period comparisons, and use certain non-GAAP financial measures as performance measures under our executive bonus plan. We believe that these non-GAAP financial measures provide useful information about our operating results, enhance the overall understanding of past financial performance and future prospects and allow for greater transparency with respect to metrics used by our management in its financial and operational decision-making. While our non-GAAP financial measures are an important tool for financial and operational decision-making and for evaluating our own operating results over different periods of time, you should review the reconciliation of our non-GAAP financial measures to the comparable GAAP financial measures included below, and not rely on any single financial measure to evaluate our business.

The non-GAAP gross profit, non-GAAP loss from operations, non-GAAP net loss and non-GAAP net loss per share exclude all or a combination of the following: stock-based compensation expense, amortization of acquired intangible assets, amortization of debt discount and issuance costs, and certain other items such as acquisition-related expenses, secondary public offering costs and litigation-related expenses. We exclude stock-based compensation expense because of varying available valuation methodologies, subjective assumptions and the variety of equity instruments that can impact our non-cash expense. We believe that providing non-GAAP financial measures that exclude stock-based compensation expense allow for more meaningful comparisons between our operating results from period to period. We believe that excluding the impact of amortization of acquired intangible assets allows for more meaningful comparisons between operating results from period to period as the intangibles are valued at the time of acquisition and are amortized over several years after the acquisition. We believe that excluding the impact of amortization of debt discount and issuance costs allows for a more meaningful comparison between operating results from period to period as these costs are recorded as interest expense and are a non-cash item. We also exclude certain other items such as acquisition-related expenses, secondary public offering costs, and litigation-related expenses as these costs are unrelated to the current operations and neither comparable to the prior period nor predictive of future results. Accordingly, we believe that excluding these expenses provides investors and management with greater visibility into the underlying performance of our business operations, facilitates comparison of our results with other periods and may also facilitate comparison with the results of other companies in our industry.

We define adjusted EBITDA as net loss before (1) interest income, (2) interest expense, (3) other income (expense), net, (4) provision for (benefit from) income taxes, (5) depreciation expense, (6) amortization of intangible assets, (7) stock-based compensation expense, and (8) certain other items. We believe that the use of adjusted EBITDA is useful to investors and other users of our financial statements in evaluating our operating performance because it provides them with an additional tool to compare business performance across companies and across periods. Adjusted EBITDA should not be considered as a substitute for other measures of financial performance reported in accordance with GAAP. There are limitations to using this non-GAAP financial measure, including that other companies may calculate this measure differently than we do, that it does not reflect our capital expenditures or future requirements for capital expenditures and that it does not reflect changes in, or cash requirements for, our working capital and excludes some items that are cash based.

Our non-GAAP financial measures may not provide information that is directly comparable to that provided by other companies in our industry, as other companies in our industry may calculate non-GAAP financial results differently, particularly related to non-recurring, unusual items. In addition, there are limitations in using non-GAAP financial measures because the non-GAAP financial measures are not prepared in accordance with GAAP, may be different from non-GAAP financial measures used by other companies and exclude expenses that may have a material impact upon our reported financial results. Further, stock-based compensation expense has been and will continue to be for the foreseeable future a significant recurring expense in our business and an important part of the compensation provided to our employees.

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The following tables reconcile GAAP gross profit to non-GAAP gross profit for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
GAAP total gross profit	$ 173,008	$ 144,030	$ 117,712
Stock-based compensation expense	1,692	1,085	610
Amortization of acquired intangible assets	3,985	2,639	1,782
Non-GAAP total gross profit	$ 178,685	$ 147,754	$ 120,104

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
GAAP gross profit – products	$ 128,761	$ 91,165	$ 76,957
Stock-based compensation expense	493	336	76
Amortization of acquired intangible assets	3,985	2,639	1,782
Non-GAAP gross profit – products	$ 133,239	$ 94,140	$ 78,815

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
GAAP gross profit – maintenance and support	$ 34,545	$ 38,777	$ 30,298
Stock-based compensation expense	233	247	206
Non-GAAP gross profit – maintenance and support	$ 34,778	$ 39,024	$ 30,504

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
GAAP gross profit – professional services	$ 9,702	$ 14,088	$ 10,457
Stock-based compensation expense	966	502	328
Non-GAAP gross profit – professional services	$ 10,668	$ 14,590	$ 10,785

The following table reconciles GAAP loss from operations to non-GAAP loss from operations for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
GAAP loss from operations	$ (53,038)	$ (48,794)	$ (49,049)
Stock-based compensation expense	27,593	19,541	17,316
Amortization of acquired intangible assets	4,144	2,813	2,438
Acquisition-related expenses	115	167	—
Secondary public offering costs	205	—	—
Litigation-related expenses	600	—	—
Non-GAAP loss from operations	$ (20,381)	$ (26,273)	$ (29,295)

The following table reconciles GAAP net loss to non-GAAP net loss for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands, except share and per share data)		
GAAP net loss	$ (55,545)	(45,470)	(49,000)
Stock-based compensation expense	27,593	19,541	17,316
Amortization of acquired intangible assets	4,144	2,813	2,438
Acquisition-related expenses	115	167	—
Secondary offering costs	205	—	—
Litigation-related expenses	600	—	—
Release of valuation allowance, acquisition-related	—	(2,632)	—
Tax adjustment for the impact of tax reform	—	(352)	—
Amortization of debt discount and issuance costs	3,831	—	—
Non-GAAP net loss	$ (19,057)	$ (25,933)	$ (29,246)
Non-GAAP net loss per share, basic and diluted	$ (0.41)	$ (0.60)	$ (0.71)
Weighted-average common shares outstanding, basic and diluted	46,456,825	42,952,950	41,248,473

The following table reconciles GAAP net loss to adjusted EBITDA for the years ended December 31, 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Net loss	$ (55,545)	$ (45,470)	$ (49,000)
Interest income	(3,229)	(862)	(342)
Interest expense	4,934	87	211
Other (income) expense, net	336	(313)	109
Provision for (benefit from) income taxes	466	(2,236)	(27)
Depreciation expense	6,486	4,815	4,287
Amortization of intangible assets	4,611	2,813	2,438
Stock-based compensation expense	27,593	19,541	17,316
Acquisition-related expenses	115	167	—
Secondary public offering costs	205	—	—
Litigation-related expenses	600	—	—
Adjusted EBITDA	$ (13,428)	$ (21,458)	$ (25,008)

Components of Results of Operations

Revenue

We generate revenue primarily from selling products, maintenance and support and professional services through a variety of delivery models to meet the needs of our diverse customer base. We generally bill customers and collect payment for both our products and services at the beginning of a contractual period.

Products

We generate products revenue from the sale of (1) cloud-based subscriptions for our InsightIDR, InsightVM, InsightAppSec and InsightConnect products, (2) managed services offerings which utilize our products and (3) term or perpetual software licenses for our Nexpose, Metasploit and AppSpider products, term licenses for our Komand product offering, as well as associated content subscriptions for our Nexpose and Metasploit products. We also generate appliance revenue that is included in our products revenue and is associated with hardware sold with our Nexpose product to certain customers.

Maintenance and Support

We generate maintenance and support revenue when customers purchase or renew agreements for maintenance and support of their Nexpose, Metasploit and AppSpider software licenses. Substantially all of our customers purchase an agreement for maintenance and support in connection with their purchase of a Nexpose, Metasploit or AppSpider software license.

Professional Services

We generate professional service revenue from the sale of deployment and training services related to our products, incident response services and security advisory services.

Cost of Revenue

Our total cost of revenue consists of the costs of products, maintenance and support and professional services. Cost of revenue include overhead costs for depreciation, facilities, IT, information security, and recruiting. Our IT overhead costs include IT personnel compensation costs and costs associated with our IT infrastructure. All overhead costs are allocated based on relative headcount.

Cost of Products

Cost of products consists of personnel and related costs for our content, managed service and cloud operations team, including salaries and other payroll related costs, bonuses, stock-based compensation and allocated overhead costs. Also included in cost of products are software license fees, hardware, cloud computing costs and internet connectivity expenses directly related to delivering our products, amortization of contract fulfillment costs, as well as amortization of certain intangible assets including internally developed software.

Cost of Maintenance and Support

Cost of maintenance and support consists of personnel and related costs for our support team, including salaries and other payroll related costs, bonuses, stock-based compensation and allocated overhead costs.

Cost of Professional Services

Cost of professional services consists of personnel and related costs for our professional services team, including salaries and other payroll related costs, bonuses, stock-based compensation, costs of contracted third-party vendors, travel and entertainment expenses and allocated overhead costs.

We expect our cost of revenue to increase on an absolute dollar basis as we continue to grow our revenue.

Gross Margin

Gross margin, or gross profit as a percentage of revenue, has been and will continue to be affected by a variety of factors, including the average sales price of our products and services, transaction volume growth, the mix of revenue between software licenses, cloud-based subscriptions, managed services and professional services and changes in cloud computing costs. We expect our gross margins to fluctuate over time depending on the factors described above.

Operating Expenses

Operating expenses consist of research and development, sales and marketing, and general and administrative expenses. Operating expenses include overhead costs for depreciation, facilities, IT, information security and recruiting. Our IT overhead costs include IT personnel compensation costs and costs associated with our IT infrastructure. All overhead costs are allocated based on relative headcount.

Research and Development Expense

Research and development expense consists of personnel costs for our research and development team, including salaries and other payroll related costs, bonuses and stock-based compensation. Additional expenses include travel and entertainment, consulting and professional fees for third-party development resources as well as allocated overhead costs.

We expect research and development expense to increase on an absolute dollar basis in the near term as we continue to increase investments in our products and technology platform innovation, but to remain relatively consistent as a percentage of total revenue.

Sales and Marketing Expense

Sales and marketing expense consists of personnel costs for our sales and marketing team, including salaries and other payroll related costs, commissions, including amortization of deferred commissions, bonuses and stock-based compensation. Additional expenses include marketing activities and promotional events, travel and entertainment, training costs, amortization of certain intangible assets and allocated overhead costs.

We expect sales and marketing expense to increase on an absolute dollar basis in the near term as we continue to increase investments to drive our revenue growth, but to decrease as a percentage of total revenue.

General and Administrative Expense

General and administrative expense consists of personnel costs for our legal, human resources, and finance and accounting departments, including salaries and other payroll related costs, bonuses and stock-based compensation. Additional expenses include travel and entertainment, professional fees, litigation-related expenses, insurance, secondary public offering expenses, acquisition-related expenses, amortization of certain intangible assets and allocated overhead costs.

We expect general and administrative expense to increase on an absolute dollar basis in the near term as we continue to increase investments to support our growth, but to remain relatively consistent as a percentage of total revenue.

Interest Income

Interest income consists primarily of interest income on our cash and cash equivalents and our short and long-term investments.

Interest Expense

Interest expense consists primarily of contractual interest expense, as well as amortization of debt discount and issuance costs related to our 1.25% convertible senior notes due 2023.

Other Income (Expense), Net

Other income (expense), net consists primarily of unrealized and realized gains and losses related to changes in foreign currency exchange rates.

Provision for (Benefit from) Income Taxes

Provision for (benefit from) income taxes relates to U.S. federal and state, as well as certain foreign jurisdiction, income taxes. Historically, we have generated net losses in the U.S., U.K and Ireland and recorded a full valuation allowance against our U.S., U.K. and Ireland deferred tax assets. We expect to maintain a full valuation allowance on our U.S., Ireland and U.K. deferred tax assets in the near term. Realization of our U.S., Ireland and U.K. deferred tax assets depends upon future earnings, the timing and amount of which are uncertain.

Results of Operations

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Consolidated Statement of Operations Data:			
Revenue:			
Products	$ 168,571	$ 116,748	$ 89,404
Maintenance and support	42,223	46,268	37,403
Professional services	33,297	37,924	30,630
Total revenue	244,091	200,940	157,437
Cost of revenue:(1)			
Products	39,810	25,583	12,447
Maintenance and support	7,678	7,491	7,105
Professional services	23,595	23,836	20,173
Total cost of revenue	71,083	56,910	39,725
Operating expenses:(1)			
Research and development	67,743	50,938	47,955
Sales and marketing	123,310	111,593	90,524
General and administrative	34,993	30,293	28,282
Total operating expenses	226,046	192,824	166,761
Loss from operations	(53,038)	(48,794)	(49,049)
Interest income	3,229	862	342
Interest expense	(4,934)	(87)	(211)
Other income (expense), net	(336)	313	(109)
Loss before income taxes	(55,079)	(47,706)	(49,027)
Provision for (benefit from) income taxes	466	(2,236)	(27)
Net loss	(55,545)	(45,470)	(49,000)

(1) Cost of revenue and operating expenses include stock-based compensation expense and depreciation and amortization expense as follows:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Stock-based compensation expense:			
Cost of revenue	$ 1,692	$ 1,085	$ 610
Research and development	10,822	7,205	6,054
Sales and marketing	7,569	5,756	6,607
General and administrative	7,510	5,495	4,045
Total stock-based compensation expense	$ 27,593	$ 19,541	$ 17,316

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Depreciation and amortization expense:			
Cost of revenue	5,673	$ 3,597	$ 2,529
Research and development	1,336	1,077	1,080
Sales and marketing	2,783	1,986	1,842
General and administrative	1,305	968	1,274
Total depreciation and amortization expense	$ 11,097	$ 7,628	$ 6,725

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The following table sets forth our consolidated statements of operations data expressed as a percentage of revenue:

	Year Ended December 31,		
	2018	2017	2016
Consolidated Statement of Operations Data:			
Revenue:			
Products	69.1 %	58.1 %	56.8 %
Maintenance and support	17.3	23.0	23.8
Professional services	13.6	18.9	19.5
Total revenue	100.0	100.0	100.0
Cost of revenue:			
Products	16.3	12.7	7.9
Maintenance and support	3.1	3.7	4.5
Professional services	9.7	11.9	12.8
Total cost of revenue	29.1	28.3	25.2
Operating expenses:			
Research and development	27.8	25.4	30.4
Sales and marketing	50.5	55.5	57.5
General and administrative	14.3	15.1	18.0
Total operating expenses	92.6	96.0	105.9
Loss from operations	(21.7)	(24.3)	(31.1)
Interest income	1.3	0.4	0.2
Interest expense	(2.0)	—	(0.1)
Other income (expense), net	(0.1)	0.2	(0.1)
Loss before income taxes	(22.6)	(23.7)	(31.1)
Provision for (benefit from) income taxes	0.2	(1.1)	—
Net loss	(22.8)%	(22.6)%	(31.1)%

Year Ended December 31, 2018 Compared to the Year Ended December 31, 2017

Revenue

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Revenue:				
Products	$ 168,571	$ 116,748	$ 51,823	44.4 %
Maintenance and support	42,223	46,268	(4,045)	(8.7)
Professional services	33,297	37,924	(4,627)	(12.2)
Total revenue	$ 244,091	$ 200,940	$ 43,151	21.5 %

Total revenue increased by $43.2 million in 2018 compared to 2017. The increase in revenue included a $4.6 million increase from new customers and $50.4 million increase in revenue from existing customers. The $50.4 million increase in revenue from existing customers was due to an increase in revenue from renewals, upsells and cross-sells as a result of the continued growth of our customer base. Revenue from new customers represents the revenue recognized from the customer's initial purchase. All renewals, upsells and cross-sells are considered revenue from existing customers. The revenue increase was partially offset by a $11.8 million decrease in revenue as a result of the adoption of ASC 606. Refer to Note 2, *Summary of Significant Accounting Policies*, in the notes to our consolidated financial statements for further details regarding the impact of the adoption of ASC 606.

The increase in total revenue in 2018 was comprised of $46.0 million generated from sales in North America and $9.0 million generated from sales from the rest of the world. The revenue increase generated from sales in North America and rest of world was partially offset by a $8.9 million decrease in revenue in North America and a $2.9 million decrease in revenue in the rest of the world due to the adoption of ASC 606.

The $4.0 million decrease in maintenance and support revenue in 2018 compared to 2017 was primarily due to a $3.5 million reduction in revenue as a result of the adoption of ASC 606. The $4.6 million decrease in professional services revenue in 2018 compared to 2017 was primarily due to a $1.7 million reduction in revenue as a result of the adoption of ASC 606 and a reduction in professional services bookings which drove the performance of less services.

Cost of Revenue

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Cost of revenue:				
Products	$ 39,810	$ 25,583	$ 14,227	55.6 %
Maintenance and support	7,678	7,491	187	2.5
Professional services	23,595	23,836	(241)	(1.0)
Total cost of revenue	$ 71,083	$ 56,910	$ 14,173	24.9 %
Gross margin %:				
Products	76.4%	78.1%		
Maintenance and support	81.8	83.8		
Professional services	29.1	37.1		
Total gross margin %	70.9%	71.7%		

Total cost of revenue increased by $14.2 million in 2018 compared to 2017, primarily due to $6.9 million increase in cloud computing costs related to growing cloud-based subscription revenue, as well as a $5.0 million increase in personnel costs, inclusive of a $0.6 million increase in stock-based compensation expense, primarily as a result of our increase in headcount from 236 as of December 31, 2017 to 247 as of December 31, 2018 as well as the timing effect of when our headcount additions were hired in 2018 and 2017, to support our growing customer base. Our increase in total cost of revenue also included a $1.6 million increase in allocated overhead driven largely by IT and facilities costs, a $1.3 million increase in amortization of intangible assets primarily due our acquisition of Komand in July 2017 and tCell in October 2018, a $0.4 million increase in amortization expense for capitalized internally-developed software, and a $0.3 million increase in other costs. These increases were partially offset by a $1.0 million decrease in third-party professional service consulting costs and a $0.3 million decrease in travel and entertainment expenses. Total cost of revenue was not materially impacted by the adoption of ASC 606.

Total gross margin percentage decreased in 2018 compared to 2017. The decrease in products gross margin was due to an increase in revenue from cloud-based subscriptions and managed services, which have lower gross margins than our licensed software products, in addition to a reduction in products revenue of $6.6 million as a result of the adoption of ASC 606. The decrease in maintenance and support gross margin was primarily due to a reduction of maintenance and support revenue of $3.5 million as a result of the adoption of ASC 606. The decrease in professional services gross margin was primarily due to a reduction in professional services revenue.

Operating Expenses

Research and Development Expense

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Research and development	$ 67,743	$ 50,938	$ 16,805	33.0%
% of revenue	27.8%	25.4%		

Research and development expense increased by $16.8 million in 2018 compared to 2017 primarily due to a $11.3 million increase in personnel costs, a $2.2 million increase in allocated overhead driven largely by an increase in IT and facilities costs, a $1.6 million increase in third-party cloud infrastructure costs related to development of new and future offerings, a $0.6 million increase for a global developers conference, a $0.6 million increase in travel and entertainment expenses and a $0.5 million increase due to the write-off of a capitalized internal-use software project. The $11.3 million increase in personnel costs was primarily due to a $8.8 million increase in salaries and related costs driven by growth in headcount from 266 as of December 31, 2017 to 324 as of December 31, 2018, which included 12 employees acquired in the July 2017 Komand acquisition and 13 employees acquired in the October 2018 tCell acquisition, as well as the timing effect of when our headcount additions were hired in 2018 and 2017, a $1.0 million increase in acquisition-related bonuses, and a $3.6 million increase in stock-based compensation expense, partially offset by a $2.1 million increase in personnel costs that were capitalized as internal-use software costs.

Sales and Marketing Expense

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Sales and marketing	$ 123,310	$ 111,593	$ 11,717	10.5%
% of revenue	50.5%	55.5%		

Sales and marketing expense increased by $11.7 million in 2018 compared to 2017 primarily due to a $21.5 million increase in personnel costs and commissions due to an increase in headcount from 437 as of December 31, 2017 to 519 as of December 31, 2018, inclusive of a $1.8 million increase in stock-based compensation expense, as well as the timing effect of when our headcount additions were hired in 2018 and 2017 to drive additional sales. Our increase in sales and marketing expense also included a $3.9 million increase in allocated overhead driven largely by an increase in IT and facilities costs, a $0.8 million increase in marketing and advertising costs, a $0.5 million in professional consulting fees, a $0.3 million increase in travel and entertainment expense and a $0.2 million increase in other expenses. These increases were partially offset by a $0.6 million decrease in event marketing expense related to a user conference which was held in the prior year and a $2.0 million decrease in partner referral fees. In addition, the sales and marketing expense increase was partially offset by a $12.9 million decrease in personnel costs as a result of capitalized commission costs net of amortization expense due to the adoption of ASC 606.

General and Administrative Expense

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
General and administrative	$ 34,993	$ 30,293	$ 4,700	15.5%
% of revenue	14.3%	15.1%		

General and administrative expense increased by $4.7 million in 2018 compared to 2017 primarily due to a $2.9 million increase in personnel costs, inclusive of a $2.0 million increase in stock-based compensation expense, as a result of an increase in headcount from 140 as of December 31, 2017 to 156 as of December 31, 2018 as well as the timing effect of when our headcount additions were hired in 2018 and 2017, in order to support our overall company growth, $0.6 million of litigation-related expenses, a $0.6 million increase in allocated overhead, driven largely by an increase in IT and facilities costs, $0.2 million in secondary public offering expenses, $0.1 million in professional fees and a $0.3 million increase in other expenses.

Interest Income

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Interest income	$ 3,229	$ 862	$ 2,367	274.6%
% of revenue	1.3%	0.4%		

Interest income increased by $2.4 million in 2018 compared to 2017 primarily due to higher interest income as a result of the increase in value of investments as well as higher interest rates.

Interest Expense

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Interest expense	$ (4,934)	$ (87)	$ (4,847)	NM
% of revenue	(2.0)%	— %		

Interest expense increased by $4.8 million in 2018 compared to 2017 primarily due to contractual interest and amortization of debt discount and issuance costs related to the issuance of the Notes.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Other income (expense), net	$ (336)	$ 313	$ (649)	(207.3)%
% of revenue	(0.1)%	0.2%		

Other income (expense), net reflected a $0.6 million increase in expense in 2018 compared to 2017 due to realized and unrealized foreign currency losses exceeding gains, primarily related to the euro and British pound sterling.

Provision for (benefit from) Income Taxes

	Year Ended December 31,		Change	
	2018	2017	$	%
	(dollars in thousands)			
Provision for (benefit from) income taxes	$ 466	$ (2,236)	$ 2,702	NM
% of revenue	0.2%	(1.1)%		

Provision for income taxes increased by $2.7 million to an expense of $0.5 million in 2018 compared to a $2.2 million benefit in 2017. The increase was primarily due to a $2.6 million deferred tax benefit in the prior year. The deferred tax benefit resulted from the partial release of our valuation allowance to account for the creation of a deferred tax liability for the developed technology intangible asset acquired in the acquisition of Komand which was not deductible for tax purposes.

Year Ended December 31, 2017 Compared to the Year Ended December 31, 2016

Revenue

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Revenue:				
Products	$ 116,748	$ 89,404	$ 27,344	30.6%
Maintenance and support	46,268	37,403	8,865	23.7
Professional services	37,924	30,630	7,294	23.8
Total revenue	$ 200,940	$ 157,437	$ 43,503	27.6%

Total revenue increased by $43.5 million in 2017 compared to 2016. The increase in revenue included a $18.4 million increase from new customers, upsells and cross-sells. The increase in new customers revenue included 824 net new customers added since December 31, 2016 and a full year of revenue related to net new customers added in 2016, bringing our total customer count to 7,030 as of December 31, 2017, as compared to adding 1,074 net new customers in 2016, resulting in a total customer count of 6,206 as of December 31, 2016. Revenue also increased in 2017 compared to 2016 due to $25.1 million in additional revenue from existing customer renewals. The increase in total revenue in 2017 was comprised of $35.7 million generated from sales in North America and $7.8 million generated from sales from the rest of the world.

Cost of Revenue

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Cost of revenue:				
Products	$ 25,583	$ 12,447	$ 13,136	105.5%
Maintenance and support	7,491	7,105	386	5.4
Professional services	23,836	20,173	3,663	18.2
Total cost of revenue	$ 56,910	$ 39,725	$ 17,185	43.3%
Gross margin %:				
Products	78.1%	86.1%		
Maintenance and support	83.8	81.0		
Professional services	37.1	34.1		
Total gross margin %	71.7%	74.8%		

Total cost of revenue increased by $17.2 million in 2017 compared to 2016, primarily due to a $9.1 million increase in personnel costs, inclusive of a $0.5 million increase in stock-based compensation expense, primarily as a result of our increase in headcount from 164 as of December 31, 2016 to 236 as of December 31, 2017 as well as the timing effect of when our headcount additions were hired in 2017 and 2016, to support our growing customer base. Our increase in total cost of revenue also included a $5.3 million increase in cloud computing costs related to growing cloud-based subscription revenue, a $2.1 million increase in allocated overhead driven largely by IT and facilities costs, a $0.9 million increase in amortization of intangible assets primarily due to the Komand acquisition, a $0.5 million increase in travel and entertainment expenses, and a $0.2 million increase in other costs, partially offset by a decrease of $0.9 million in third-party professional service consulting costs.

The total gross margin percentage decrease was primarily due to the decrease in gross margin percentage for products, partially offset by the increases in gross margin percentage for professional services and maintenance and support. The decrease in products gross margin percentage was due to an increase in revenue from cloud-based subscriptions and managed services, which have lower gross margins in comparison to our software license products. The increase in maintenance and support gross margin percentage was driven by our ability to scale as our revenue continues to grow. The increase in professional services gross margin percentage was primarily due to increased demand for our assessment services and deployment and training services.

Operating Expenses

Research and Development Expense

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Research and development	$ 50,938	$ 47,955	$ 2,983	6.2%
% of revenue	25.4%	30.4%		

Research and development expense increased by $3.0 million in 2017 compared to 2016 primarily due to a $1.9 million increase in allocated overhead driven largely by an increase in IT and facilities costs, a $0.7 million increase in personnel costs, and an increase of $0.4 million in other expenses. The $0.7 million increase in personnel costs was primarily due to a $2.1 million increase in salaries and related costs driven by growth in headcount of our research and development teams from 251 as of December 31, 2016 to 266 as of December 31, 2017, which included 12 employees acquired in the Komand acquisition, as well as the timing effect of when our headcount additions were hired in 2017 and 2016. Also contributing to the increase was a $1.1 million increase in stock-based compensation expense and the impact of a $0.6 million Northern Ireland government grant received in 2016 which was non-recurring in 2017. These increases were partially offset by $1.2 million of acquisition-related bonus recorded in 2016, $1.2 million of personnel costs that were capitalized as internal-use software costs in 2017 and $0.7 million of certain departmental costs in 2016 that were eliminated in 2017.

Sales and Marketing Expense

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Sales and marketing	$ 111,593	$ 90,524	$ 21,069	23.3%
% of revenue	55.5%	57.5%		

Sales and marketing expense increased by $21.1 million in 2017 compared to 2016 primarily due to a $12.1 million increase in personnel costs, resulting primarily from an increase in headcount from 346 as of December 31, 2016 to 437 as of December 31, 2017 to drive additional sales of our products and services as well as the timing effect of when our headcount additions were hired in 2017 and 2016 and from higher commissions expense recorded as a result of increased customer orders. The $12.1 million increase in personnel costs was inclusive of a $0.9 million decrease in stock-based compensation expense primarily due to equity grants in the prior period associated with the Logentries acquisition. Our increase in sales and marketing expense also included a $3.7 million increase in allocated overhead driven largely by an increase in IT and facilities costs, a $2.4 million increase in marketing expense driven largely by continued investments in attracting new customers, a $1.4 million increase in travel and entertainment expense, a $0.7 million increase in partner referral fees, a $0.6 million increase in recruiting and training costs, and $0.2 million of other expenses.

General and Administrative Expense

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
General and administrative	$ 30,293	$ 28,282	$ 2,011	7.1%
% of revenue	15.1%	18.0%		

General and administrative expense increased by $2.0 million in 2017 compared to 2016 primarily due to a $2.4 million increase in personnel costs, inclusive of an increase of $1.5 million in stock-based compensation expense, primarily the result of an increase in headcount from 126 as of December 31, 2016 to 140 as of December 31, 2017 to support our overall company growth as well as the timing effect of when our headcount additions were hired in 2017 and 2016. Our increase in general and administrative expense also included a $0.7 million increase in allocated overhead driven largely by an increase in IT and facilities costs and $0.2 million of other expenses. These increases were partially offset by a decrease of $0.5 million of amortization expense, a decrease of $0.4 million in recruiting costs and $0.4 million of costs associated with a settlement and licensing agreement with a third party in the prior period.

Interest Income

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Interest income	$ 862	$ 342	$ 520	152.0%
% of revenue	0.9%	0.4%		

Interest income increased by $0.5 million in 2017 compared to 2016 primarily due to higher interest income as a result of our investment in higher-yield securities.

Interest Expense

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Interest expense	$ (87)	$ (211)	$ 124	(58.8)%
% of revenue	—%	0.1%		

Interest expense decreased by $0.1 million in 2017 compared to 2016 primarily due to a decrease in non-cash interest charges related to the accretion of the liability associated with deferred acquisition payments.

Other Income (Expense), Net

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Other income (expense), net	$ 313	$ (109)	$ 422	(387.2)%
% of revenue	0.2%	(0.1)%		

Other income (expense), net reflected a $0.4 million decrease in expense in 2017 compared to 2016 primarily due to realized and unrealized foreign currency gains exceeding losses, primarily related to the euro and British pound sterling.

Provision for (Benefit from) Income Taxes

	Year Ended December 31,		Change	
	2017	2016	$	%
	(dollars in thousands)			
Provision for (benefit from) income taxes	$ (2,236)	$ (27)	$ (2,209)	NM
% of revenue	(1.1)%	— %		

Provision for (benefit from) income taxes increased by $2.2 million in 2017 compared to 2016 primarily due to a $2.6 million deferred tax benefit resulting from a partial release of our valuation allowance to account for the creation of a deferred tax liability for the developed technology intangible asset acquired in the acquisition of Komand which is not deductible for tax purposes as well as a $0.4 million tax benefit due to the impact of U.S tax reform. These benefits were partially offset by an increase of $0.8 million provision for income taxes due to our increased operations in foreign and U.S. state jurisdictions.

Liquidity and Capital Resources

As of December 31, 2018, we had $99.6 million in cash and cash equivalents, $204.1 million of short- and long-term investments that have maturities ranging from 3 months to 2 years and an accumulated deficit of $464.6 million. Since our inception, we have generated significant losses and expect to continue to generate losses for the foreseeable future. Our principal sources of liquidity are cash and cash equivalents and investments, cash flow from operations, equity financing transactions, and issuance of convertible senior notes. To date, we have financed our operations primarily through private and public equity financings, issuance of convertible senior notes and through cash generated by operating activities. In August 2018, we issued $230.0 million aggregate principal amount of the Notes. The total net proceeds from the offering, after deducting initial purchase discounts and debt issuance costs, were $223.1 million. In connection with the issuance of the Notes, we entered into capped call transactions with certain counterparties (the Capped Calls). We used $26.9 million of the net proceeds from the Notes to purchase the Capped Calls. For further discussion on the Capped Calls, see Note 7, *Convertible Senior Notes and Capped Calls*, in the Notes to our Consolidated Financial Statements included in this Annual Report on Form 10-K. In January 2018, we completed a public offering of 1,500,000 shares of our common stock for net proceeds of $30.9 million.

We believe that our existing cash and cash equivalents and our short and long-term investments together with cash generated from our operations will be sufficient to meet our working capital expenditure requirements for at least the next 12 months. Our future capital requirements will depend on many factors, including our growth rate, the timing and extent of spending to support research and development efforts, the expansion of sales and marketing activities, particularly internationally, the introduction of new and enhanced products and professional service offerings and the cost of any future acquisitions of technology or businesses. In the event that additional financing is required from outside sources, we may be unable to raise the funds on acceptable terms, if at all.

If we are unable to raise additional capital on terms satisfactory to us when we require it, our business, operating results and financial condition could be adversely affected.

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

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Cash, cash equivalents and restricted cash at beginning of period	$ 51,762	$ 53,148	$ 86,553
Net cash provided by operating activities	6,066	13,286	9,112
Net cash used in investing activities	(193,733)	(22,221)	(43,475)
Net cash provided by financing activities	236,164	7,268	1,161
Effects of exchange rates on cash, cash equivalents and restricted cash	(694)	281	(203)
Cash, cash equivalents and restricted cash at end of period	$ 99,565	$ 51,762	$ 53,148

Uses of Funds

Our historical uses of cash have primarily consisted of cash used for operating activities such as expansion of our sales and marketing operations, research and development activities and other working capital needs, as well as cash used for investing activities such as business acquisitions and purchases of property and equipment.

Operating Activities

Operating activities provided $6.1 million of cash in 2018. Cash provided by operating activities reflected our net loss of $55.5 million, offset by a decrease in our net operating assets and liabilities of $18.2 million and non-cash charges of $43.4 million related primarily to depreciation and amortization, stock-based compensation expense, amortization of debt discount and issuance costs, provision for doubtful accounts, and other non-cash charges. The decrease in our net operating assets and liabilities was primarily due to a $22.9 million increase in deferred revenue from sales of our products and services, a $6.0 million increase in accrued expenses, a $3.7 million increase in accounts payable, and a $0.4 million increase in other liabilities, which each had a positive impact on operating cash flow. These factors were offset by a $12.8 million increase in deferred contract acquisition and fulfillment costs, a $1.7 million increase in accounts receivable and a $0.3 million increase in prepaid expenses and other assets, which each had a negative impact on operating cash flow.

Operating activities provided $13.3 million of cash in 2017. Cash provided by operating activities reflected our net loss of $45.5 million, offset by a decrease in our net operating assets and liabilities of $33.7 million and non-cash charges of $25.1 million related primarily to depreciation and amortization, stock-based compensation expense, provision for doubtful accounts, deferred income taxes and other non-cash charges. The decrease in our net operating assets and liabilities was primarily due to a $55.4 million increase in deferred revenue from sales of our products and services, and a $6.8 million increase in accrued expenses, which both had a positive impact on operating cash flow. These factors were offset by a $25.2 million increase in accounts receivable, a $2.3 million decrease in accounts payable and a $1.0 million decrease in other liabilities, which each had a negative impact on operating cash flow.

Operating activities provided $9.1 million of cash in 2016. Cash provided by operating activities reflected our net loss of $49.0 million, offset by a decrease in our net operating assets and liabilities of $32.8 million and non-cash charges of $25.3 million related primarily to depreciation and amortization, stock-based compensation expense, provision for doubtful accounts and other non-cash charges. The decrease in our net operating assets and liabilities was primarily due to a $38.7 million increase in deferred revenue from sales of our products and services, a $1.6 million increase in accrued expenses, a $1.6 million increase in accounts payable and a $0.6 million increase in other liabilities, which all had a positive impact on operating cash flow. These factors were offset by a $6.2 million increase in accounts receivable and a $3.5 million increase in prepaid expenses and other assets, which each had a negative impact on operating cash flow.

Investing Activities

Investing activities used $193.7 million of cash in 2018, consisting of $233.4 million for purchases of investments, offset by $70.3 million of investment sales and maturities, $14.5 million of cash paid for the acquisition of tCell, $12.8 million in capital expenditures to purchase computer equipment and leasehold improvements and $3.3 million for the capitalization of internal-use software costs.

Investing activities used $22.4 million of cash in 2017, consisting of $14.7 million of cash paid for the acquisition of Komand, $4.8 million in capital expenditures to purchase computer equipment and leasehold improvements and $1.2 million for the capitalization of internal-use software costs, $35.2 million used for purchases of investments less $33.7 million of investment sales and maturities and $0.2 million increase in restricted cash.

Investing activities used $43.5 million of cash in 2016, consisting of $39.0 million used for purchases of investments and $4.5 million in capital expenditures to purchase equipment and leasehold improvements.

Financing Activities

Financing activities provided $236.2 million of cash in 2018, which consisted primarily of $223.1 million in net proceeds from the issuance of the Notes, $30.9 million in net proceeds from a secondary public offering in January 2018, $7.6 million in proceeds from the exercise of stock options and $3.6 million in proceeds from the issuance of common stock purchased by employees under the Rapid7, Inc. 2015 Employee Stock Purchase Plan (ESPP), partially offset by $26.9 million for the purchase of Capped Calls related to the Notes and $2.1 million in withholding taxes paid for the net share settlement of equity awards.

Financing activities provided $7.3 million of cash in 2017, which consisted primarily of $5.8 million in proceeds from the exercise of stock options, and $2.9 million in proceeds from the issuance of common stock purchased by employees under the ESPP, partially offset by a $0.7 million payment related to the deferred acquisition consideration associated with our acquisition of NT Objectives, Inc. in 2015 and $0.7 million in withholding taxes paid for the net share settlement of equity awards.

Financing activities provided $1.2 million of cash in 2016, which consisted primarily of $3.7 million in proceeds from the issuance of common stock purchased by employees under the ESPP, $2.9 million in proceeds from the exercise of stock options and $0.1 million related to an excess tax benefit from stock-based compensation, partially offset by $4.1 million in withholding taxes paid for the net share settlement of equity awards and a $1.4 million payment related to the deferred acquisition consideration associated with the NT Objectives, Inc. acquisition in 2015.

Contractual Obligations and Commitments

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

	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years	Total
			(in thousands)		
Convertible senior notes principal	$ —	$ —	$ 230,000	$ —	$ 230,000
Convertible senior notes interest	2,779	8,625	2,875	—	14,279
Operating leases	9,899	33,603	31,310	33,474	108,286
Non-cancellable purchase obligations	42,524	49,479	230	15	92,248
Total	$ 55,202	$ 91,707	$ 264,415	$ 33,489	$ 444,813

The commitment amounts in the table above are associated with agreements that are enforceable and legally binding. The table does not include obligations under agreements that we can cancel without a significant penalty.

We lease our office facilities under non-cancellable operating leases. As of December 31, 2018, we have leases that expire at various dates through 2029. Certain of our operating leases require real estate taxes, common area maintenance and insurance payments, which are expensed when incurred and not included in the commitments table noted above.

The non-cancellable purchase obligations in the table above include cloud infrastructure services, including with Amazon Web Services, software subscriptions and the build-out of our new corporate headquarters.

As of December 31, 2018, we had a total of $8.2 million in letters of credit outstanding as collateral for certain office space leases and a corporate credit card program. These irrevocable letters of credit, which are not included in the table of contractual obligations above, are unsecured and are expected to remain in effect, in some cases, until 2029.

Off-Balance Sheet Arrangements

We do not have any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. We do not engage in off-balance sheet financing arrangements. In addition, we do not engage in trading activities involving non-exchange traded contracts. We therefore believe that we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

Critical Accounting Policies

Our consolidated financial statements are prepared in accordance with generally accepted accounting principles in the United States, or GAAP. The preparation of our consolidated financial statements requires us to make estimates, assumptions and judgments that affect the reported amounts of assets, liabilities, revenue, costs and expenses. We base our estimates and assumptions on historical experience and other factors that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ from these estimates. Our most critical accounting policies are summarized below. See Note 2, *Summary of Significant Accounting Policies*, in the Notes to our Consolidated Financial Statements included in this Annual Report on Form 10-K for a description of our other significant accounting policies.

Revenue Recognition

We generate products revenue from the sale of (1) cloud-based subscriptions for our InsightIDR, InsightVM, InsightAppSec, and InsightConnect products, (2) managed services offerings which utilize our products and (3) term or perpetual software licenses for our Nexpose, Metasploit, AppSpider and Komand products, and associated content subscriptions for our Nexpose and Metasploit products. We also generate appliance revenue that is included in our products revenue. We generate maintenance and support revenue associated with customers' purchases of our software licenses for Nexpose, Metasploit, AppSpider and Komand. We generate professional service revenue from the sale of our deployment and training services related to our solutions, incident response services and security advisory services. Our deployment services educate and assist our customers on the best use and best practices to deploy our solutions.

We adopted ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)* (ASC 606) on January 1, 2018 using the modified retrospective method. Under this method of adoption, we recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of accumulated deficit. Comparative prior periods were not adjusted.

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised products or services. The amount of revenue recognized reflects the consideration that we expect to be entitled to receive in exchange for these products or services. To achieve the core principle of this standard, we apply the following five steps:

1) *Identify the contract with a customer*

We consider the terms and conditions of the contracts and our customary business practices in identifying our contracts under ASC 606. We determine we have a contract with a customer when the contract is approved, we can identify each party's rights regarding the services to be transferred, we can identify the payment terms for the services, and we have determined the customer has the ability and intent to pay and the contract has commercial substance. We apply judgment in determining the customer's ability and intent to pay, which is based on a variety of factors, including the customer's historical payment experience or, in the case of a new customer, credit and financial information pertaining to the customer.

2) *Identify the performance obligations in the contract*

Performance obligations promised in a contract are identified based on the products and services that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the product or service either on its own or together with other resources that are readily available from third parties or from us, and are distinct in the context of the contract, whereby the transfer of the products or services is separately identifiable from other promises in the contract.

3) *Determine the transaction price*

The transaction price is determined based on the consideration to which we expect to be entitled in exchange for transferring products or services to the customer. Variable consideration is included in the transaction price if, in our judgment, it is probable that no significant future reversal of cumulative revenue under the contract will occur.

In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with simplified and predictable ways of purchasing our products and services, not to receive financing from our customers or to provide customers with financing. Examples include invoicing at the beginning of a subscription term with revenue recognized ratably over the contract period.

4) *Allocate the transaction price to performance obligations in the contract*

If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price to each performance obligation based on a relative standalone selling price ("SSP").

5) *Recognize revenue when or as we satisfy a performance obligation*

Revenue is recognized at the time the related performance obligation is satisfied by transferring the promised product or service to a customer. Revenue is recognized when control of the products or services are transferred to our customers, in an amount that reflects the consideration that we expect to receive in exchange for those products or services.

Subscription Revenue

Subscription revenue consists of revenue from our cloud-based subscription, managed services offerings and content subscriptions associated with our software licenses.

- We generate cloud-based subscription revenue primarily from sales of subscriptions to access our cloud platform, together with related support services to our customers. These arrangements do not provide the customer with the right to take possession of our software operating on our cloud platform at any time. Instead, customers are granted continuous access to our cloud platform over the contractual period. Revenue is recognized over time on a ratable basis over the contract term beginning on the date that our service is made available to the customer. Our cloud-based subscription contracts generally have terms of 1 to 3 years which are billed in advance and non-cancellable.

- Managed services offerings consist of fees generated when we operate our software and provide our capabilities on behalf of our customers. Revenue is recognized on a ratable basis over the contract term beginning on the date that our service is made available to the customer. Our managed services offerings generally have terms of 1 to 3 years which are billed in advance and non-cancellable.

- Revenue related to our content subscriptions associated with our software licenses is recognized ratably over the contractual period.

- Some of our customers have the option to purchase additional subscription and support services at a stated price. These options generally do not provide a material right as they are priced at our SSP.

Certain subscription contracts contain service level commitments, which entitle our customers to receive service credits and, in certain cases, refunds, if our services do not meet certain levels. These service credits and refunds represent variable consideration. We have historically not experienced any significant incidents affecting the defined levels of reliability and performance as required by our subscription contracts and accordingly, no estimated refunds have been considered in the allocation of the transaction price.

Term and Perpetual Software Licenses

For our perpetual software licenses where the utility to the customer is dependent on the continued delivery of content subscriptions, the content subscription renewal options result in a material right with respect to the perpetual software license. As a result, the revenue attributable to the perpetual software license is recognized ratably over the customer's estimated economic life of five years, which represents a longer period of time in comparison to the initial contractual period of maintenance and support. The estimated economic life of five years represents the period which the customer is expected to benefit from the material right. We estimated this period of benefit by taking into consideration several factors, including the terms and conditions of our customer contracts and renewals and the expected useful life of our technology.

For our term software licenses where the utility to the customer is dependent on the continued delivery of content subscriptions, we recognize the license revenue over the contractual term of the arrangement as a material right does not exist.

For our term and perpetual software licenses which are not dependent on the continued delivery of content subscriptions, the license is considered distinct from the maintenance and support, and we therefore recognize revenue attributable to the license at the time of delivery.

Maintenance and Support

Maintenance and support services are sold with our perpetual and term software licenses. As maintenance and support services are distinct from the perpetual and term software license, revenue attributable to maintenance and support services is recognized ratably over the contractual period.

Professional Services

All of our professional services are considered distinct performance obligations when sold stand alone or with other products. These contracts generally have terms of one year or less. For the majority of these contracts, revenue is recognized over time based upon the proportion of work performed to date.

Other

Other revenue primarily includes revenue from delivery of appliances and other miscellaneous revenue.

Contracts with Multiple Performance Obligations

The majority of our contracts with customers contain multiple performance obligations. For these contracts, we account for individual performance obligations separately if they are considered distinct. The transaction price is allocated to the separate performance obligations on a relative SSP basis. We determine SSP based on our overall pricing objectives, taking into consideration market conditions and other factors, including the geographic locations of our customers and selling method (i.e., partner or direct).

Legacy Revenue Accounting Policy

For periods prior to January 1, 2018, revenue was recognized in accordance with FASB ASC Topic 605, *Revenue Recognition* (ASC 605). Under ASC 605 we recognized revenue when all of the following were met:

- *Persuasive evidence of an arrangement existed*. Binding agreements or purchase orders were generally evidence of an arrangement.
- *Delivery had occurred*. Delivery occurred (1) upon delivery of the software license key or when the customer had access to the software product or (2) when we performed the services.
- *The sales price was fixed or determinable*. Fees were considered fixed and determinable when the fees were contractually agreed upon with the customer.
- *Collectability was probable*. Collectability was deemed probable based on review of a number of factors, including creditworthiness and customer payment history. If collectability was not probable, revenue was deferred until collection became probable, which was generally upon the receipt of payment.

Substantially all of our software licenses were sold in multiple-element arrangements that included maintenance and support and content subscriptions, and in addition could include cloud-based subscriptions, professional services and/or managed services. All of these elements were considered to be software elements other than cloud-based subscriptions and managed services which were non-software elements. Non-software elements included in multiple-element arrangements consist of a single deliverable that had stand-alone value and represented a single unit of accounting. We determined that we did not have vendor-specific objective evidence, or VSOE, of the selling price for the elements comprising these multiple-element arrangements as our software licenses were generally not sold on a stand-alone basis and we purposefully employed variable pricing for our offerings in order to meet customer purchase requirements along the multiple price points of the demand curve.

When all of the elements of a multiple-element arrangement were software elements, the revenue for software licenses and any other products and services that were sold along with the license was generally deferred on our balance sheet and recognized as revenue on our consolidated statements of operations ratably over the contractual period of the maintenance and support, typically one to three years, which was longer than the period over which the professional services were performed. Revenue recognition began upon delivery of the software license, assuming that all other criteria for revenue recognition had been met.

When a multiple-element arrangement included both software elements and non-software elements, the total arrangement consideration was first allocated between the software elements and the non-software elements based on the selling price hierarchy, which included (1) VSOE, if available, (2) third-party evidence, or TPE, if VSOE was not available or (3) best estimate of selling price, or BESP, if neither VSOE nor TPE was available. We were not able to establish a selling price for any element using VSOE or TPE. We determined BESP by considering our overall pricing objectives and market conditions. Significant pricing practices taken into consideration included our discounting practices, the size and volume of our transactions, our price lists, our go-to-market strategy, historical standalone sales and contract prices. The determination of BESP was made in consultation with, and was approved by, our management. The portion of the consideration allocated to the non-software elements was recognized ratably over the service period of the non-software elements, assuming all other criteria for revenue recognition had been met. The portion of the consideration allocated to software elements was recognized as described above.

With respect to our managed services and cloud-based subscription offerings sold on a stand-alone basis, we recognized revenue ratably over the term of the managed service agreement or subscription, assuming that the other criteria for revenue recognition were met.

We recognized revenue from professional services sold on a stand-alone basis as those services were rendered.

For purposes of disclosing revenue by class, we allocated the arrangement consideration for multiple-element software arrangements among the individual elements utilizing BESP, as we did not have VSOE or TPE of selling price for any of the elements.

Deferred Contract Acquisition and Fulfillment Costs

We capitalize commission expenses paid to internal sales personnel and partner referral fees that are incremental costs to obtaining customer contracts. These costs are recorded as deferred contract acquisition costs in the consolidated balance sheets. Costs to obtain a contract for a new customer, up-sell or cross-sell are amortized on a straight-line basis over an estimated period of benefit of five years as sales commissions on initial sales are not commensurate with sales commissions on contract renewals. We determined the estimated period of benefit by taking into consideration the contractual term and expected renewals of customer contracts, our technology and other factors, including the fact that commissions paid on renewals are not commensurate with commissions paid on initial sales transactions. We periodically review the carrying amount of deferred contract acquisition costs to determine whether events or changes in circumstances have occurred that could impact the period of benefit. Commissions paid relating to contract renewals are deferred and amortized on a straight-line basis over the related renewal period. Costs to obtain a contract for professional services arrangements are expensed as incurred in accordance with the practical expedient as the contractual period of our professional services arrangements are one year or less.

Amortization expense associated with deferred contract acquisition costs is recorded to sales and marketing expense in our consolidated statements of operations.

We capitalize costs incurred to fulfill our contracts that relate directly to the contract, are expected to generate resources that will be used to satisfy our performance obligations and are expected to be recovered through revenue generated under the contract. Contract fulfillment costs are amortized on a straight-line basis over the estimated period of benefit and recorded as cost of products in our consolidated statement of operations.

For periods prior to January 1, 2018, under ASC 605, sales commissions were recognized in the period that the commissions were earned by our employees, which was typically upon signing of an arrangement. Under our sales commission policy, the amount of sales commissions expense attributable to the sales arrangement signed in the period was recognized fully in that period; however, the revenue from the sales arrangement was generally recognized ratably over the contractual period of the applicable agreement.

Stock-Based Compensation

We measure and recognize compensation expense for all stock options, restricted stock awards, or RSAs, and restricted stock units, or RSUs, based on the estimated fair value of the award on the grant date. The fair value is recognized as expense over the requisite service period, which is generally the vesting period of the respective award, on a straight-line basis when the only condition to vesting is continued service. If vesting is subject to a market or performance condition, recognition is based on the derived service period of the award. Expense for awards with performance conditions is estimated and adjusted on a quarterly basis based upon the assessment of the probability that the performance condition will be met.

We use the Black-Scholes option pricing model to estimate the fair value of stock option awards. The Black-Scholes option pricing model requires management to make a number of assumptions, including the expected life of the option, the volatility of the underlying stock, the risk-free interest rate and expected dividends. The assumptions used in our Black-Scholes option-pricing model represent management’s best estimates at the time of grant. These estimates involve a number of variables, uncertainties and assumptions and the application of management’s judgment, as they are inherently subjective. If any assumptions change, our stock-based compensation expense could be materially different in the future.

These assumptions are estimated as follows:

- *Fair Value of Common Stock*. Prior to our IPO, we estimated the fair value of common stock considering a number of objective and subjective factors, including contemporaneous third-party valuations of our common stock. For stock options granted subsequent to our IPO in July 2015, the fair value of common stock is based on the closing price of our common stock as reported on the Nasdaq Global Market on the date of grant.

- *Expected Term*. The expected term represents the period that our stock options are expected to be outstanding. We calculated the expected term using the simplified method based on the average of each option's vesting term and the contractual period during which the option can be exercised, which is typically 10 years following the date of grant.

- *Expected Volatility*. We determine the price volatility factor based on the historical volatilities of our publicly traded peer group as we do not have a significant trading history for our common stock. Industry peers consist of several public companies in the technology industry that are similar to us in size, stage of life cycle, and financial leverage. We used the same set of peer group companies in all the relevant valuation estimates. We intend to continue to consistently apply this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of our own common stock share price becomes available, or unless circumstances change such that the identified companies are no longer similar to us, in which case, more suitable companies whose share prices are publicly available would be utilized in the calculation.

- *Risk-Free Interest Rate*. The risk-free interest rate was based on U.S. Treasury zero-coupon securities with maturities consistent with the estimated expected term.

- *Expected Dividend Yield*. We have not paid dividends on our common stock nor do we expect to pay dividends in the foreseeable future.

The fair values of RSAs and RSUs are based on the closing market price of our common stock on the Nasdaq Global Market on the date of grant.

We estimate the fair value of the rights to acquire stock under our ESPP using the Black-Scholes option pricing formula. Our ESPP provides for a twelve-month offering period which contains two purchase periods of approximately six months in duration. We use our peer group volatility data in the valuation of ESPP shares. We recognize such compensation expense on a straight-line basis over the employee's requisite service period.

Recent Accounting Pronouncements

See Note 2, *Summary of Significant Accounting Policies*, in the Notes to our Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K for a description of recent accounting pronouncements and our expectation of their impact, if any, on our results of operations and financial conditions.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Foreign Currency Exchange Risk

Our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. A majority of our customers enter into contracts that are denominated in U.S. dollars. Our expenses are generally denominated in the currencies of the countries where our operations are located, which is primarily in the United States and to a lesser extent in the United Kingdom, other Euro-zone countries within mainland Europe, Canada, Japan, Singapore and Australia. Our results of operations and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates and may be adversely affected in the future due to changes in foreign currency exchange rates. During the years ended December 31, 2018 and 2017, the effect of a hypothetical 10% adverse change in foreign currency exchange rates on monetary assets and liabilities would not have been material to our financial condition or results of operations. To date, we have not engaged in any hedging strategies. As our international operations grow, we will continue to reassess our approach to manage our risk relating to fluctuations in foreign currency rates.

Interest Rate Risk

As of December 31, 2018, we had cash and cash equivalents of $99.6 million consisting of bank deposits and money market funds and short- and long-term investments of $204.1 million consisting of U.S. Government agencies, commercial paper, corporate bonds, agency bonds and asset-backed securities. Our investments are made for capital preservation purposes. We do not enter into investments for trading or speculative purposes.

Our cash and cash equivalents and short- and long-term investments are subject to market risk due to changes in interest rates, which may affect our interest income and the fair value of our investments. Due in part to these factors, our future investment income may fluctuate due to changes in interest rates or we may suffer losses in principal if we are forced to sell securities that decline in market value due to changes in interest rates. However, because we classify our investments as available-for-sale securities, no gains or losses are recognized due to the changes in interest rates unless securities are sold prior to maturity or declines in fair value are determined to be other-than-temporary.

In August 2018, we issued $230.0 million aggregate principal amount of 1.25% convertible senior notes due in 2023. The fair value of the Notes is subject to interest rate risk, market risk and other factors due to the conversion feature. The fair value of the Notes may increase or decrease for various reasons, including fluctuations in the market price of our common stock, fluctuations in market interest rates and fluctuations in general economic conditions. The interest and market value changes affect the fair value of the Notes but do not impact our financial position, cash flows or results of operations due to the fixed nature of the debt obligation. Based upon the quoted market price as of December 31, 2018, the fair value of our Notes was $233.0 million.

As of December 31, 2018, the effect of a hypothetical 10% increase or decrease in interest rates would not have had a material impact on our financial statements.

Inflation Risk

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

Item 8. Financial Statements and Supplementary Data.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors
Rapid7, Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Rapid7, Inc. and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive loss, changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

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

Change in Accounting Principle

As discussed in note 2 to the consolidated financial statements, the Company changed its method of revenue recognition in 2018 due to the adoption of Accounting Standards Update 2014-09, *Revenue from Contracts with Customers (Topic 606)*.

Basis for Opinions

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

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

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

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/ KPMG LLP

We have served as the Company's auditor since 2011.

Boston, Massachusetts
February 28, 2019

RAPID7, INC.

CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share data)

	December 31, 2018	December 31, 2017
Assets		
Current assets:		
Cash and cash equivalents	$ 99,565	$ 51,562
Short-term investments	159,210	39,178
Accounts receivable, net of allowance for doubtful accounts of $1,624 and $1,478 at December 31, 2018 and 2017, respectively	74,935	73,661
Deferred contract acquisition and fulfillment costs, current portion	12,321	—
Prepaid expenses and other current assets	9,746	8,877
Total current assets	355,777	173,278
Long-term investments	44,892	1,102
Property and equipment, net	17,523	8,589
Goodwill	88,420	83,164
Intangible assets, net	23,955	16,640
Deferred contract acquisition and fulfillment costs, non-current portion	27,634	—
Other assets	1,168	1,363
Total assets	$ 559,369	$ 284,136
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	7,048	2,240
Accrued expenses	37,376	29,728
Deferred revenue, current portion	189,855	155,811
Other current liabilities	707	1,706
Total current liabilities	234,986	189,485
Convertible senior notes, net	174,688	—
Deferred revenue, non-current portion	58,716	68,689
Other long-term liabilities	3,660	1,809
Total liabilities	472,050	259,983
Stockholders' equity:		
Preferred stock, $0.01 par value per share; 10,000,000 shares authorized at December 31, 2018 and 2017; 0 shares issued and outstanding at December 31, 2018 and 2017	—	—
Common stock, $0.01 par value per share; 100,000,000 shares authorized at December 31, 2018 and 2017; 48,087,257 and 44,540,544 shares issued at December 31, 2018 and 2017, respectively; 47,600,449 and 44,053,736 shares outstanding at December 31, 2018 and 2017, respectively	476	441
Treasury stock, at cost, 486,808 shares at December 31, 2018 and 2017	(4,764)	(4,764)
Additional paid-in-capital	556,223	463,428
Accumulated other comprehensive loss	(31)	(39)
Accumulated deficit	(464,585)	(434,913)
Total stockholders' equity	87,319	24,153
Total liabilities and stockholders' equity	$ 559,369	$ 284,136

See accompanying notes to consolidated financial statements.

RAPID7, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except share and per share data)

	Year Ended December 31, 2018	2017	2016
Revenue:			
Products	$ 168,571	$ 116,748	$ 89,404
Maintenance and support	42,223	46,268	37,403
Professional services	33,297	37,924	30,630
Total revenue	244,091	200,940	157,437
Cost of revenue:			
Products	39,810	25,583	12,447
Maintenance and support	7,678	7,491	7,105
Professional services	23,595	23,836	20,173
Total cost of revenue	71,083	56,910	39,725
Total gross profit	173,008	144,030	117,712
Operating expenses:			
Research and development	67,743	50,938	47,955
Sales and marketing	123,310	111,593	90,524
General and administrative	34,993	30,293	28,282
Total operating expenses	226,046	192,824	166,761
Loss from operations	(53,038)	(48,794)	(49,049)
Other income (expense), net:			
Interest income	3,229	862	342
Interest expense	(4,934)	(87)	(211)
Other income (expense), net	(336)	313	(109)
Loss before income taxes	(55,079)	(47,706)	(49,027)
Provision for (benefit from) income taxes	466	(2,236)	(27)
Net loss	$ (55,545)	$ (45,470)	$ (49,000)
Net loss per share, basic and diluted	$ (1.20)	$ (1.06)	$ (1.19)
Weighted-average common shares outstanding, basic and diluted	46,456,825	42,952,950	41,248,473

See accompanying notes to consolidated financial statements.

RAPID7, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(in thousands)

	Year Ended December 31,		
	2018	**2017**	**2016**
Net loss	$ (55,545)	$ (45,470)	$ (49,000)
Other comprehensive loss:			
Change in fair value of investments	8	(23)	(19)
Adjustment for net losses realized and included in net loss	—	3	—
Total change in unrealized losses on investments	8	(20)	(19)
Comprehensive loss	$ (55,537)	$ (45,490)	$ (49,019)

See accompanying notes to consolidated financial statements.

RAPID7, INC.

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

(in thousands)

	Common stock		Treasury stock		Additional paid-in-capital	Accumulated other comprehensive loss	Accumulated deficit	Total stockholders' equity
	Shares	Amount	Shares	Amount				
Balance, December 31, 2015	41,540	$ 415	402	$ (3,526)	$ 411,524	$ —	$ (340,338)	$ 68,075
Stock-based compensation expense	—	—	—	—	17,316	—	—	17,316
Issuance of common stock under ESPP	346	4	—	—	3,720	—	—	3,724
Vesting of restricted stock units	91	1	—	—	(1)	—	—	—
Forfeiture of restricted stock awards	(27)	—	—	—	—	—	—	—
Shares withheld for employee taxes	(74)	(1)	62	(865)	(160)	—	—	(1,026)
Excess tax benefit from stock-based compensation	—	—	—	—	87	—	—	87
Issuance of common stock upon exercise of stock options and warrants	679	7	—	—	2,874	—	—	2,881
Net unrealized loss on investments	—	—	—	—	—	(19)	—	(19)
Net loss	—	—	—	—	—	—	(49,000)	(49,000)
Balance, December 31, 2016	42,555	$ 426	464	$ (4,391)	$ 435,360	$ (19)	$ (389,338)	$ 42,038
Stock-based compensation expense	—	—	—	—	19,541	—	—	19,541
Cumulative-effect adjustment for the adoption of ASU 2016-09	—	—	—	—	105	—	(105)	—
Issuance of common stock under ESPP	247	3	—	—	2,911	—	—	2,914
Vesting of restricted stock units	436	4	—	—	(4)	—	—	—
Forfeiture of restricted stock awards	(21)	—	—	—	—	—	—	—
Shares withheld for employee taxes	(50)	(1)	23	(373)	(324)	—	—	(698)
Issuance of common stock upon exercise of stock options	887	9	—	—	5,839	—	—	5,848
Net unrealized loss on investments	—	—	—	—	—	(20)	—	(20)
Net loss	—	—	—	—	—	—	(45,470)	(45,470)
Balance, December 31, 2017	44,054	$ 441	487	$ (4,764)	$ 463,428	$ (39)	$ (434,913)	$ 24,153
Stock-based compensation expense	—	—	—	—	27,593	—	—	27,593
Cumulative-effect adjustment for the adoption of ASC 606	—	—	—	—	—	—	25,873	25,873
Equity component of convertible senior notes, net	—	—	—	—	52,194	—	—	52,194
Purchase of capped calls related to convertible senior notes	—	—	—	—	(26,910)	—	—	(26,910)
Issuance of common stock related to secondary offering	1,500	15	—	—	30,892	—	—	30,907
Issuance of common stock under ESPP	219	2	—	—	3,635	—	—	3,637
Vesting of restricted stock units	973	10	—	—	(10)	—	—	—
Forfeiture of restricted stock awards	(3)	—	—	—	—	—	—	—
Shares withheld for employee taxes	(88)	(1)	—	—	(2,196)	—	—	(2,197)
Issuance of common stock upon exercise of stock options	945	9	—	—	7,597	—	—	7,606
Net unrealized gain on investments	—	—	—	—	—	8	—	8
Net loss	—	—	—	—	—	—	(55,545)	(55,545)
Balance, December 31, 2018	47,600	$ 476	487	$ (4,764)	$ 556,223	$ (31)	$ (464,585)	$ 87,319

See accompanying notes to consolidated financial statements.

RAPID7, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

	Year Ended December 31,		
	2018	**2017**	**2016**
Cash flows from operating activities:			
Net loss	$ (55,545)	$ (45,470)	$ (49,000)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Depreciation and amortization	11,097	7,628	6,725
Amortization of debt discount and issuance costs	3,831	—	—
Stock-based compensation expense	27,593	19,541	17,316
Provision for doubtful accounts	740	905	931
Deferred income taxes	(69)	(2,860)	75
Foreign currency re-measurement (gain) loss	757	(364)	58
Other non-cash items	(506)	209	222
Changes in assets and liabilities:			
Accounts receivable	(1,685)	(25,217)	(6,195)
Deferred contract acquisition and fulfillment costs	(12,790)	—	—
Prepaid expenses and other assets	(287)	(74)	(3,523)
Accounts payable	3,675	(2,257)	1,619
Accrued expenses	6,018	6,758	1,578
Deferred revenue	22,870	55,437	38,748
Other liabilities	367	(950)	558
Net cash provided by operating activities	6,066	13,286	9,112
Cash flows from investing activities:			
Business acquisitions, net of cash acquired	(14,460)	(14,717)	—
Purchases of property and equipment	(12,813)	(4,824)	(4,499)
Capitalization of internal-use software	(3,265)	(1,162)	—
Purchases of investments	(233,421)	(35,190)	(38,976)
Sales and maturities of investments	70,226	33,672	—
Net cash used in investing activities	(193,733)	(22,221)	(43,475)
Cash flows from financing activities:			
Proceeds from issuance of convertible senior notes, net of issuance costs of $6,879	223,121	—	—
Purchase of capped calls related to convertible senior notes	(26,910)	—	—
Proceeds from secondary public offering, net of offering costs of $608	30,907	—	—
Deferred business acquisition payment	—	(796)	(1,392)
Payments of capital lease obligations	—	—	(68)
Taxes paid related to net share settlement of equity awards	(2,197)	(698)	(4,114)
Excess tax benefit from stock-based compensation	—	—	87
Proceeds from employee stock purchase plan	3,637	2,914	3,724
Proceeds from stock option exercises	7,606	5,848	2,924
Net cash provided by financing activities	236,164	7,268	1,161
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(694)	281	(203)
Net increase (decrease) in cash, cash equivalents and restricted cash	47,803	(1,386)	(33,405)
Cash, cash equivalents and restricted cash, beginning of period	51,762	53,148	86,553
Cash, cash equivalents and restricted cash, end of period	$ 99,565	$ 51,762	$ 53,148
Supplemental cash flow information:			
Cash paid for income taxes	$ 188	$ 801	$ 556
Cash paid for interest	$ —	$ —	$ 5
Reconciliation of cash, cash equivalents and restricted cash:			
Cash and cash equivalents	$ 99,565	$ 51,562	$ 53,148
Restricted cash in other assets	—	200	—
Total cash, cash equivalents and restricted cash	$ 99,565	$ 51,762	$ 53,148

See accompanying notes to consolidated financial statements.

RAPID7, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Nature of the Business

Rapid7, Inc. and subsidiaries ("we," "us" or "our") is advancing security with visibility, analytics, and automation delivered through our Insight cloud. Our solutions simplify the complex, allowing security teams to work more effectively with IT and development to reduce vulnerabilities, monitor for malicious behavior, investigate and shut down attacks, and automate routine tasks.

(2) Summary of Significant Accounting Policies

(a) Basis of Presentation and Consolidation

The accompanying consolidated financial statements include our results of operations and those of our wholly-owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation. The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP).

(b) Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates, judgments and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Significant items subject to such estimates and assumptions include the determination of the estimated economic life of perpetual licenses for revenue recognition, the determination of standalone selling prices in revenue transactions with multiple performance obligations, the estimated period of benefit for deferred contract acquisition and fulfillment costs, the valuation of allowance for doubtful accounts, the valuation of stock-based compensation and the valuation of intangible assets acquired in a business combination. We base our estimates on historical experience and on various other assumptions that we believe are reasonable. Actual results could differ from those estimates.

(c) Revenue Recognition

We generate products revenue from the sale of (1) cloud-based subscriptions for our InsightIDR, InsightVM, InsightAppSec and InsightConnect products, (2) managed services offerings which utilize our products and (3) term or perpetual software licenses for our Nexpose, Metasploit, AppSpider and Komand products, and associated content subscriptions for our Nexpose and Metasploit products. We also generate appliance revenue that is included in our products revenue and is associated with hardware sold with our Nexpose product to certain customers. We generate maintenance and support revenue associated with customers' purchases of our software licenses for Nexpose, Metasploit, AppSpider and Komand. We generate professional service revenue from the sale of our deployment and training services related to our solutions, incident response services and security advisory services. Our deployment services educate and assist our customers on the best use and best practices to deploy our solutions.

We adopted Financial Accounting Standards Board (FASB) Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers (Topic 606)* (ASC 606) on January 1, 2018 using the modified retrospective method. Under this method of adoption, we recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of accumulated deficit. Comparative prior periods were not adjusted.

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised products or services. The amount of revenue recognized reflects the consideration that we expect to be entitled to receive in exchange for these products or services. To achieve the core principle of this standard, we apply the following five steps:

1) *Identify the contract with a customer*

We consider the terms and conditions of the contracts and our customary business practices in identifying our contracts under ASC 606. We determine we have a contract with a customer when the contract is approved, we can identify each party's rights regarding the services to be transferred, we can identify the payment terms for the services, and we have determined the customer has the ability and intent to pay and the contract has commercial substance. We apply judgment in determining the customer's ability and intent to pay, which is based on a variety of factors, including the customer's historical payment experience or, in the case of a new customer, credit and financial information pertaining to the customer.

2) *Identify the performance obligations in the contract*

Performance obligations promised in a contract are identified based on the products and services that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the product or service either on its own or together with other resources that are readily available from third parties or from us, and are distinct in the context of the contract, whereby the transfer of the products or services is separately identifiable from other promises in the contract.

3) *Determine the transaction price*

The transaction price is determined based on the consideration to which we expect to be entitled in exchange for transferring products or services to the customer. Variable consideration is included in the transaction price if, in our judgment, it is probable that no significant future reversal of cumulative revenue under the contract will occur.

In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined our contracts generally do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with simplified and predictable ways of purchasing our products and services, not to receive financing from our customers or to provide customers with financing. Examples include invoicing at the beginning of a subscription term with revenue recognized ratably over the contract period.

4) *Allocate the transaction price to performance obligations in the contract*

If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price to each performance obligation based on a relative standalone selling price ("SSP").

5) *Recognize revenue when or as we satisfy a performance obligation*

Revenue is recognized at the time the related performance obligation is satisfied by transferring the promised product or service to a customer. Revenue is recognized when control of the products or services are transferred to our customers, in an amount that reflects the consideration that we expect to receive in exchange for those products or services.

The following table summarizes revenue from contracts with customers for the year ended December 31, 2018:

	Year Ended December 31, 2018 (in thousands)
Subscription revenue	$ 137,442
Term and perpetual software licenses	28,200
Maintenance and support	42,223
Professional services	33,297
Other	2,929
Total revenue	$ 244,091

The following table summarizes the revenue by region based on the shipping address of customers who have contracted to use our product or service for the year ended December 31, 2018:

	Year Ended December 31, 2018
	(in thousands)
United States	$ 199,852
All other	44,239
Total revenue	$ 244,091

Subscription Revenue

Subscription revenue consists of revenue from our cloud-based subscription, managed services offerings and content subscriptions associated with our software licenses.

- We generate cloud-based subscription revenue primarily from sales of subscriptions to access our cloud platform, together with related support services to our customers. These arrangements do not provide the customer with the right to take possession of our software operating on our cloud platform at any time. Instead, customers are granted continuous access to our cloud platform over the contractual period. Revenue is recognized over time on a ratable basis over the contract term beginning on the date that our service is made available to the customer. Our cloud-based subscription contracts generally have a term of 1 year which is billed in advance and non-cancellable.

- Managed services offerings consist of fees generated when we operate our software and provide our capabilities on behalf of our customers. Revenue is recognized on a ratable basis over the contract term beginning on the date that our service is made available to the customer. Our managed services offerings generally have a term of 1 year which is billed in advance and non-cancellable.

- Revenue related to our content subscriptions associated with our software licenses is recognized ratably over the contractual period.

- Some of our customers have the option to purchase additional subscription and support services at a stated price. These options generally do not provide a material right as they are priced at our SSP.

Certain subscription contracts contain service level commitments, which entitle our customers to receive service credits and, in certain cases, refunds, if our services do not meet certain levels. These service credits and refunds represent variable consideration. We have historically not experienced any significant incidents affecting the defined levels of reliability and performance as required by our subscription contracts and accordingly, no estimated refunds have been considered in the allocation of the transaction price.

Term and Perpetual Software Licenses

For our perpetual software licenses where the utility to the customer is dependent on the continued delivery of content subscriptions, the content subscription renewal options result in a material right with respect to the perpetual software license. As a result, the revenue attributable to the perpetual software license is recognized ratably over the customer's estimated economic life of five years, which represents a longer period of time in comparison to the initial contractual period of maintenance and support. The estimated economic life of five years represents the period which the customer is expected to benefit from the material right. We estimated this period of benefit by taking into consideration several factors, including the terms and conditions of our customer contracts and renewals and the expected useful life of our technology.

For our term software licenses where the utility to the customer is dependent on the continued delivery of content subscriptions, we recognize the license revenue over the contractual term of the arrangement as a material right does not exist.

For our term and perpetual software licenses which are not dependent on the continued delivery of content subscriptions, the license is considered distinct from the maintenance and support, and we therefore recognize revenue attributable to the license at the time of delivery.

Maintenance and Support

Maintenance and support services are sold with our perpetual and term software licenses. As maintenance and support services are distinct from the perpetual and term software license, revenue attributable to maintenance and support services is recognized ratably over the contractual period.

Professional Services

All of our professional services are considered distinct performance obligations when sold stand alone or with other products. These contracts generally have terms of one year or less. For the majority of these contracts, revenue is recognized over time based upon the proportion of work performed to date.

Other

Other revenue primarily includes revenue from delivery of appliances and other miscellaneous revenue.

Contracts with Multiple Performance Obligations

The majority of our contracts with customers contain multiple performance obligations. For these contracts, we account for individual performance obligations separately if they are considered distinct. The transaction price is allocated to the separate performance obligations on a relative SSP basis. We determine SSP based on our overall pricing objectives, taking into consideration market conditions and other factors, including the geographic locations of our customers and selling method (i.e., partner or direct).

Contract Balances

Contract liabilities consist of deferred revenue and include payments received in advance of performance under the contract. Such amounts are recognized as revenue over the contractual period consistent with the above methodology. For the year ended December 31, 2018, we recognized revenue of $135.6 million that was included in the corresponding contract liability balance at the beginning of the period presented. Deferred revenue that will be realized during the succeeding 12-month period is recorded as current, and the remaining deferred revenue is recorded as non-current.

We receive payments from customers based upon contractual billing schedules. Accounts receivable are recorded when the right to consideration becomes unconditional. Contract assets, or unbilled receivables, include amounts related to our contractual right to consideration for both completed and partially completed performance obligations that may not have been invoiced. As of January 1, 2018 and December 31, 2018, contract assets of $0.3 million and $0.8 million, respectively, are included in prepaid expenses and other current assets in our consolidated balance sheet.

Transaction Price Allocated to the Remaining Performance Obligations

The following table includes estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied or partially unsatisfied as of December 31, 2018. The estimated revenues do not include unexercised contract renewals.

	2019	2020	2021 and thereafter
		(in thousands)	
Subscription revenue	$ 129,539	$ 37,471	$ 980
Term and perpetual software licenses	22,880	20,776	4,043
Maintenance and support	26,966	6,536	110

The amounts presented in the table above primarily consist of fixed fees which are typically recognized ratably as the performance obligation is satisfied.

As of December 31, 2018, the estimated revenue expected to be recognized in the future related to performance obligations that are unsatisfied or partially unsatisfied associated with professional services was $12.0 million. We will recognize this revenue as the professional services are completed, which is expected to occur within the next 12 months or less.

Transition Disclosures

For periods prior to January 1, 2018, we recognized revenue in accordance with FASB ASC Topic 605, *Revenue Recognition* (ASC 605). In accordance with the modified retrospective method transition requirements, we will present the financial statement line items impacted and adjusted to compare to presentation under ASC 605 for each of the interim and annual periods during the first year of our adoption of ASC 606.

The following tables summarize the impact as of and for the year ended December 31, 2018:

Balance Sheet	**As of December 31, 2018**	
	As Reported under ASC 606	**Proforma as if ASC 605 was in effect**
	(in thousands)	
Cash and cash equivalents	$ 99,565	$ 99,565
Short-term investments	159,210	159,210
Accounts receivable, net	74,935	74,935
Deferred contract acquisition and fulfillment costs, current portion	12,321	—
Prepaid expenses and other current assets	9,746	9,281
Long-term investments	44,892	44,892
Property and equipment, net	17,523	17,523
Goodwill	88,420	88,420
Intangible assets, net	23,955	23,955
Deferred contract acquisition and fulfillment costs, non-current portion	27,634	—
Other assets	1,168	1,168
Total assets	$ 559,369	$ 518,949
Accounts payable	7,048	7,048
Accrued expenses	37,376	37,376
Deferred revenue, current portion	189,855	193,763
Other current liabilities	707	707
Convertible senior notes, net	174,688	174,688
Deferred revenue, non-current portion	58,716	41,658
Other long-term liabilities	3,660	2,912
Total liabilities	472,050	458,152
Common stock	476	476
Treasury stock	(4,764)	(4,764)
Additional paid-in-capital	556,223	556,223
Accumulated other comprehensive loss	(31)	(31)
Accumulated deficit	(464,585)	(491,107)
Total stockholders’ equity	87,319	60,797
Total liabilities and stockholders’ equity	$ 559,369	$ 518,949

Total reported assets were $40.4 million greater than the proforma balance sheet, which assumes the previous guidance remained in effect as of December 31, 2018, largely due to deferred contract acquisition and fulfillment costs of $40.0 million.

Total reported liabilities were $13.9 million greater than the proforma balance sheet primarily due to changes in deferred revenue and deferred tax liabilities.

Statement of Operations	Year Ended December 31, 2018 As Reported under ASC 606	Year Ended December 31, 2018 Proforma as if ASC 605 was in effect
	(in thousands, except share and per share data)	
Revenue:		
Products	$ 168,571	175,146
Maintenance and support	42,223	45,767
Professional services	33,297	35,010
Total revenue	244,091	255,923
Cost of revenue:		
Products	39,810	39,761
Maintenance and support	7,678	7,678
Professional services	23,595	23,577
Total cost of revenue	71,083	71,016
Total gross profit	173,008	184,907
Operating expenses:		
Research and development	67,743	67,743
Sales and marketing	123,310	136,167
General and administrative	34,993	34,993
Total operating expenses	226,046	238,903
Loss from operations	(53,038)	(53,996)
Other income (expense), net:		
Interest income	3,229	3,229
Interest expense	(4,934)	(4,934)
Other income (expense), net	(336)	(336)
Loss before income taxes	(55,079)	(56,037)
Provision for income taxes	466	157
Net loss	$ (55,545)	$ (56,194)
Net loss per share, basic and diluted	$ (1.20)	$ (1.21)
Weighted-average common shares outstanding, basic and diluted	46,456,825	46,456,825

The following summarizes the significant changes on the consolidated statement of operations for the year ended December 31, 2018 as a result of the adoption of ASC 606 on January 1, 2018 compared to if we had continued to recognize revenue under ASC 605:

- Products revenue decreased $6.6 million for the year ended December 31, 2018 under ASC 606 primarily due to perpetual licenses revenue which are dependent on the continued delivery of content subscriptions and the change in the allocation of contract consideration to the relative fair value method under ASC 606 from the residual method under ASC 605. As a result of the allocation change, more contract consideration is allocated to license revenue under ASC 606. Given the utility of certain of our perpetual license products are dependent on the continued delivery of content subscriptions, the content subscription renewal option results in a material right with respect to the perpetual license. As a result, revenue allocated to the perpetual license is recognized ratably over the customer's estimated economic life of five years rather than over the contractual period of maintenance and support, typically one to three years.

- Maintenance and support revenue decreased $3.5 million for the year ended December 31, 2018 under ASC 606 primarily due to the change in the allocation of contract consideration to the relative fair value method under ASC 606 from the residual method under ASC 605. As a result of the allocation change, more contract consideration is allocated to license revenue under ASC 606.

- Professional services revenue decreased $1.7 million for the year ended December 31, 2018 under ASC 606 primarily due to the fact that our professional services are sold together with term or perpetual licenses. Under ASC 606, the professional services represent distinct performance obligations and therefore are recognized as services are performed. Under ASC 605, professional services sold together with term or perpetual licenses were recognized ratably over the contractual period of maintenance and support.

- Sales and marketing expense decreased $12.9 million for the year ended December 31, 2018 under ASC 606 primarily due to the capitalization of commissions considered direct and incremental costs to obtain a contract partially offset by amortization of capitalized commissions.

- Provision for income taxes increased $0.3 million for the year ended December 31, 2018 under ASC 606 due to additional deferred taxes for the temporary differences between the accounting and tax treatments of capitalized costs to obtain or fulfill a contract.

	Year Ended December 31, 2018	
Statement of Cash Flows	**As Reported under ASC 606**	**Proforma as if ASC 605 was in effect**
	(in thousands)	
Net loss	$ (55,545)	$ (56,194)
Adjustments to reconcile net loss to net cash provided by operating activities	43,443	43,125
Changes in operating assets and liabilities:		
Accounts receivable	(1,685)	(1,685)
Deferred contract acquisition and fulfillment costs	(12,790)	—
Prepaid expenses and other assets	(287)	146
Accounts payable	3,675	3,675
Accrued expenses	6,018	6,018
Deferred revenue	22,870	10,614
Other liabilities	367	367
Net cash provided by operating activities	$ 6,066	$ 6,066

The adoption of ASC 606 resulted in offsetting changes in operating assets and liabilities and had no impact on net cash flow from operations.

Legacy Revenue Accounting Policy

For periods prior to January 1, 2018, revenue was recognized in accordance with ASC 605. Under ASC 605, revenue was recognized when all of the following were met:

- *Persuasive evidence of an arrangement existed*. Binding agreements or purchase orders were generally evidence of an arrangement.

- *Delivery had occurred*. Delivery occurred (1) upon delivery of the software license key or when the customer had access to the software product or (2) when we performed the services.

- *The sales price was fixed or determinable*. Fees were considered fixed and determinable when the fees were contractually agreed upon with the customer.

- *Collectability was probable*. Collectability was deemed probable based on review of a number of factors, including creditworthiness and customer payment history. If collectability was not probable, revenue was deferred until collection became probable, which was generally upon the receipt of payment.

Substantially all of our software licenses were sold in multiple-element arrangements that included maintenance and support and content subscriptions, and in addition could include cloud-based subscriptions, professional services and/or managed services. All of these elements were considered to be software elements other than cloud-based subscriptions and managed services which were non-software elements. Non-software elements included in multiple-element arrangements consist of a single deliverable that had stand-alone value and represented a single unit of accounting. We determined that we did not have vendor-specific objective evidence, or VSOE, of the selling price for the elements comprising these multiple-element arrangements as our software licenses were generally not sold on a stand-alone basis and we purposefully employed variable pricing for our offerings in order to meet customer purchase requirements along the multiple price points of the demand curve.

When all of the elements of a multiple-element arrangement were software elements, the revenue for software licenses and any other products and services that were sold along with the license was generally deferred on our balance sheet and recognized as revenue on our consolidated statements of operations ratably over the contractual period of the maintenance and support, typically one to three years, which was longer than the period over which the professional services were performed. Revenue recognition began upon delivery of the software license, assuming that all other criteria for revenue recognition had been met.

When a multiple-element arrangement included both software elements and non-software elements, the total arrangement consideration was first allocated between the software elements and the non-software elements based on the selling price hierarchy, which included (1) VSOE, if available, (2) third-party evidence, or TPE, if VSOE was not available or (3) best estimate of selling price, or BESP, if neither VSOE nor TPE was available. We were not able to establish a selling price for any element using VSOE or TPE. We determined BESP by considering our overall pricing objectives and market conditions. Significant pricing practices taken into consideration included our discounting practices, the size and volume of our transactions, our price lists, our go-to-market strategy, historical standalone sales and contract prices. The determination of BESP was made in consultation with, and was approved by, our management. The portion of the consideration allocated to the non-software elements was recognized ratably over the service period of the non-software elements, assuming all other criteria for revenue recognition had been met. The portion of the consideration allocated to software elements was recognized as described above.

With respect to our managed services and cloud-based subscription offerings sold on a stand-alone basis, we recognized revenue ratably over the term of the managed service agreement or subscription, assuming that the other criteria for revenue recognition were met.

We recognized revenue from professional services sold on a stand-alone basis as those services were rendered.

For purposes of disclosing revenue by class, we allocated the arrangement consideration for multiple-element software arrangements among the individual elements utilizing BESP, as we did not have VSOE or TPE of selling price for any of the elements.

(d) Cash and Cash Equivalents

We consider all highly liquid instruments with original maturities of three months or less at the date of purchase to be cash equivalents. Cash and cash equivalents are recorded at cost, which approximates fair value. As of December 31, 2018 and 2017, $58.6 million and $0.1 million, respectively, of our cash equivalents were invested in money market funds, U.S. Government agencies and commercial paper.

(e) Restricted Cash

As of December 31, 2017, we had $0.2 million of restricted cash recorded on our balance sheet in other non-current assets as collateral for a credit card program. This restricted cash was released during 2018, therefore as of December 31, 2018, we had no restricted cash on our balance sheet.

(f) Investments

We classify our investments as available-for-sale and record these investments at fair value. We currently invest primarily in commercial paper, corporate bonds, agency bonds, U.S. Government agencies and asset-backed securities. Investments with an original maturity of greater than three months at the date of purchase and less than one year from the date of the balance sheet are classified as short-term and those with maturities of more than one year from the date of the balance sheet are classified as long-term in the consolidated balance sheet. Additionally, we do not invest in any securities with contractual maturities greater than 24 months. Unrealized gains and losses that are considered temporary are reported as a component of other comprehensive loss. Realized gains and losses are determined based on the specific identification method, and are reflected in our consolidated statements of operations. We regularly review our investment portfolio to identify and evaluate investments that have indicators of possible impairment. Factors considered in determining whether a loss is other-than-temporary include, but are not limited to: the length of time and extent a security's fair value has been below its cost, the financial condition and near-term prospects of the investee, the credit quality of the security's issuer, likelihood of recovery and our intent and ability to hold the security for a period of time sufficient to allow for any anticipated recovery in value. For our debt instruments, we also evaluate whether we have the intent to sell the security or it is more likely than not that we will be required to sell the security before recovery of its cost basis.

(g) Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at the invoiced amount, net of allowances for doubtful accounts. Management regularly reviews the adequacy of the allowance for doubtful accounts by considering the age of outstanding invoices, the customer's expected ability to pay and the collection history, when applicable, to determine whether an allowance is appropriate. Accounts receivable are charged against the allowance for doubtful accounts after all means of collection have been exhausted and the potential for recovery is considered remote. Additions to the allowance for doubtful accounts are recorded in general and administrative expense in the consolidated statement of operations. We do not have any off-balance sheet credit exposure related to our customers. The following table displays the changes in our allowance for doubtful accounts:

	Amount (in thousands)
Balance at December 31, 2015	$ 730
Additions, net of recoveries	931
Less write-offs	(600)
Balance at December 31, 2016	1,061
Additions, net of recoveries	905
Less write-offs	(488)
Balance at December 31, 2017	1,478
Additions, net of recoveries	740
Less write-offs	(594)
Balance at December 31, 2018	$ 1,624

(h) Concentration of Credit Risk

Financial instruments that potentially expose us to concentrations of credit risk consist primarily of cash and cash equivalents, accounts receivable and short-term and long-term investments. As of December 31, 2018 and 2017, $58.6 million and $0.1 million, respectively, of our cash equivalents were invested in money market funds, U.S. Government agencies and commercial paper. Deposits held with banks may exceed the amount of insurance provided on such deposits. We have not experienced any losses in such accounts and believe that we are not exposed to any significant risk.

We provide credit to customers in the normal course of business. Collateral is not required for accounts receivable, but ongoing credit evaluations of customers' financial condition are performed. We maintain reserves for potential credit losses. No single customer, including channel partners, accounted for 10% or more of our total revenues in 2018, 2017 or 2016 or accounts receivable as of December 31, 2018 or 2017.

Our short-term and long-term investments primarily consist of commercial paper, corporate bonds, agency bonds, U.S. Government agencies and asset-backed securities. All of our investments are highly-rated by credit rating agencies and are issued by organizations with reputable credit, and therefore bear minimal credit risk.

(i) Property and Equipment

Property and equipment are recorded at cost and depreciated over their estimated useful lives using the straight-line method. The following table presents the useful lives of our property and equipment:

	Useful Lives
Computer equipment and software	3 years
Furniture and fixtures	5 - 7 years
Leasehold improvements	Shorter of the useful life of the asset or the lease term

Upon sale, the cost of assets disposed and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is recognized in the consolidated statements of operations. Repairs and maintenance costs are expensed as incurred.

(j) Software Development Costs

Software development costs associated with the development of products for sale are recorded to research and development expense until technological feasibility has been established for the product. Once technological feasibility is established, all software costs are capitalized until the product is available for release to customers. To date, the software development costs have not been capitalized as we believe our current software development process is essentially completed concurrently with the establishment of technological feasibility. As such, these costs are expensed as incurred and recognized in research and development expenses in our consolidated statements of operations.

With respect to software developed for internal use, we capitalize qualifying internal costs, such as payroll and benefits of those employees directly associated with the development of the software, and other qualifying consulting costs. 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. We capitalized $3.3 million, $1.2 million and $0 of costs related to software developed for internal use in the years ended December 31, 2018, 2017 and 2016, respectively. Total unamortized costs relating to software developed for internal use was $3.4 million and $1.1 million as of December 31, 2018 and 2017, respectively. These costs are included in long-term assets as part of intangible assets, net in our consolidated balance sheet.

(k) Long-Lived Assets

We evaluate our long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable. When such events or changes in circumstances occur, recoverability of these assets is measured by a comparison of the carrying value of an asset to the future net undiscounted cash flows directly associated with the asset. If assets are considered to be impaired, the impairment recognized is the amount by which the carrying value exceeds the fair value of the asset. We use a discounted cash flow approach or other methods, if appropriate, to assess fair value. For the year ended December 31, 2018, we determined there were no indicators of impairment of our long-lived assets.

(l) Business Combinations

We recognize tangible and intangible assets acquired and liabilities assumed in a business combination based on their estimated fair values. Determining these fair values requires management to make significant estimates and assumptions, especially with respect to intangible assets. The excess of the purchase price for acquisitions over the fair value of the net assets acquired, including other intangible assets, is recorded as goodwill. While we use our best estimates and assumptions as part of the purchase price allocation to accurately value assets acquired and liabilities assumed at the acquisition date, our estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, we record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill to the extent that we identify adjustments to the preliminary purchase price allocation. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated statements of operations.

(m) Goodwill

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. Goodwill is not amortized but is tested for impairment at least annually or more frequently when events or circumstances occur that indicate that it is more likely than not that an impairment has occurred.

We test goodwill for impairment on the last day of each fiscal year and whenever events or changes in circumstances indicate that the carrying amount of this asset may exceed its fair value. For our goodwill impairment analysis, we operate with a single reporting unit. To test goodwill impairment, we perform a single-step goodwill impairment test to identify potential goodwill impairment. The single-step impairment test begins with an estimation of the fair value of a reporting unit. Goodwill impairment exists when a reporting unit's carrying value exceeds its fair value. In performing the single step of the goodwill impairment testing and measurement process, we estimated the fair value of our single reporting unit using our market capitalization. Based upon our assessment performed as of December 31, 2018, we concluded the fair value of our single reporting unit exceeded its' carrying value and there was no impairment of goodwill.

(n) Foreign Currency

The functional currency of our foreign subsidiaries is the U.S. dollar. We translate all monetary assets and liabilities denominated in foreign currencies into U.S. dollars using the exchange rates in effect at the balance sheet dates and non-monetary assets and liabilities using historical exchange rates. Foreign currency denominated expenses are re-measured using the average exchange rates for the period. Foreign currency transaction and re-measurement gains and losses are included in other income (expense), net. In 2018, 2017 and 2016, we recorded nominal foreign currency transactional gains (losses). In 2018, 2017 and 2016, we recorded foreign currency re-measurement gains (losses) of $(0.8) million, $0.4 million and $(0.1) million, respectively.

(o) Stock-Based Compensation

We measure and recognize compensation expense for all stock options, restricted stock awards (RSAs), restricted stock units (RSUs) and common stock issued pursuant to our employee stock purchase plan (ESPP) based on the estimated fair value of the award on the grant date. Stock-based compensation expense is recognized on a straight-line basis over the requisite service period, which is generally the same as the vesting period. Beginning January 1, 2017 with the adoption of ASU 2016-09, we elected to recognize forfeitures as they occur, and no longer estimate a forfeiture rate when calculating the stock-based compensation expense.

(p) Deferred Contract Acquisition and Fulfillment Costs

In connection with our adoption of ASC 606, we capitalize commission expenses paid to internal sales personnel and partner referral fees that are incremental costs to obtaining customer contracts. These costs are recorded as deferred contract acquisition costs in the consolidated balance sheets. Costs to obtain a contract for a new customer, up-sell or cross-sell are amortized on a straight-line basis over an estimated period of benefit of five years as sales commissions on initial sales are not commensurate with sales commissions on contract renewals. We determined the estimated period of benefit by taking into consideration the contractual term and expected renewals of customer contracts, our technology and other factors, including the fact that commissions paid on renewals are not commensurate with commissions paid on initial sales transactions. We periodically review the carrying amount of deferred contract acquisition costs to determine whether events or changes in circumstances have occurred that could impact the period of benefit. Commissions paid relating to contract renewals are deferred and amortized on a straight-line basis over the related renewal period. Costs to obtain a contract for professional services arrangements are expensed as incurred in accordance with the practical expedient as the contractual period of our professional services arrangements are one year or less.

Amortization expense associated with deferred contract acquisition costs is recorded to sales and marketing expense in our consolidated statements of operations.

We capitalize costs incurred to fulfill our contracts that relate directly to the contract, are expected to generate resources that will be used to satisfy our performance obligations and are expected to be recovered through revenue generated under the contract. Contract fulfillment costs are amortized on a straight-line basis over the estimated period of benefit and recorded as cost of products in our consolidated statement of operations.

The following table summarizes the activity of the deferred contract acquisition and fulfillment costs for the year ended December 31, 2018:

	Year Ended December 31, 2018 (in thousands)
Beginning balance	$ 27,165
Capitalization of contract acquisition and fulfillment costs	22,765
Amortization of deferred contract acquisition and fulfillment costs	(9,975)
Ending balance	$ 39,955

For periods prior to January 1, 2018, under ASC 605, sales commissions were recognized in the period that the commissions were earned by our employees, which was typically upon signing of an arrangement. Under our sales commission policy, the amount of sales commissions expense attributable to the sales arrangement signed in the period was recognized fully in that period; however, the revenue from the sales arrangement was generally recognized ratably over the contractual period of the applicable agreement.

(q) Advertising

Advertising costs are expensed as incurred, and are recorded in sales and marketing expense in our consolidated statement of operations. We incurred $8.9 million, $8.4 million and $6.0 million in advertising expense in 2018, 2017 and 2016, respectively.

(r) Income Taxes

Income taxes are accounted for using the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for differences between the financial statement carrying amounts of existing assets and liabilities and their respective income tax bases, and operating loss and tax credit carryforwards using tax rates expected to be in effect in the years in which the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance if it is more likely than not that some or all of the deferred tax assets will not be realized in the future.

We recognize tax benefits from uncertain tax positions if it is more likely than not that the tax position will be sustained on examination by the taxing authorities based on the technical merits of the position. Interest and penalties associated with such uncertain tax positions are classified as a component of income tax expense.

(s) Net Loss per Share

Basic net loss per share is computed by dividing our net loss by the weighted-average number of common shares used in the loss per share calculation during the period. Diluted net loss per share is computed by giving effect to all potentially dilutive securities, including stock options, RSAs, RSUs, the impact of our ESPP and the impact of the conversion spread of our consolidated senior notes (Notes). Basic and diluted net loss per share was the same for all periods presented as the inclusion of all potentially dilutive securities outstanding was anti-dilutive. Additionally, the 5.5 million shares underlying the conversion option of the Notes are not considered in the calculation of diluted net loss per share as the effect would be anti-dilutive. The Notes are not convertible as of December 31, 2018. We expect to settle the principal amount of the Notes in cash and therefore use the treasury stock method for calculating any potential dilutive effect of the conversion spread on diluted net income per share, if applicable. The conversion spread will have a dilutive impact on diluted net income per share when the average market price of our common stock for a given period of time exceeds the initial conversion price of $41.59 per share for the Notes.

(t) Recent Accounting Pronouncements

Accounting Pronouncements Recently Adopted

In June 2018, the FASB issued ASU 2018-07, *Compensation-Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*, which expands the scope of Topic 718 to include share-based payment transactions for acquiring goods and services from non-employees, with certain exceptions. We adopted this standard on a prospective basis during the fourth quarter of 2018. There was no impact to our consolidated financial statements as a result of the adoption.

In May 2017, the FASB issued ASU 2017-09, *Compensation-Stock Compensation (Topic 718): Scope of Modification Accounting*, clarifying when a change to the terms or conditions of a share-based payment award must be accounted for as a modification. The ASU required modification accounting if the fair value, vesting condition or the classification of the award is not the same immediately before and after a change to the terms and conditions of the award. We adopted this standard on a prospective basis on January 1, 2018. There was no impact to our consolidated financial statements as a result of the adoption.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*, which provided guidance on the treatment of restricted cash in the statements of cash flows. Amounts generally described as restricted cash and restricted cash equivalents should be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows.

We adopted this standard in the first quarter of 2018 utilizing the retrospective transition method. The presentation of restricted cash in the consolidated statements of cash flows was adjusted as a result of adopting this new standard.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory*. The ASU is intended to improve the accounting for the income tax consequences of intra-entity transfers of assets other than inventory. Current GAAP prohibits the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset has been sold to an outside party. The ASU will allow an entity to recognize the income tax consequences of these transfers when the transfers occur. We adopted this standard on January 1, 2018 and there was no impact to our consolidated financial statements as a result of the adoption.

In May 2014, the FASB issued ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*, which replaced the revenue recognition requirements in FASB ASC Topic 605, *Revenue Recognition*. The new revenue standard outlines a single, comprehensive model for accounting for revenue from contracts with customers and requires more detailed disclosure to enable users of financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from such contracts. The new revenue standard provides a five-step analysis of transactions to determine when and how revenue is recognized. The core principle is that a company should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods and services.

We adopted ASC 606 on January 1, 2018 using the modified retrospective method. Under this method of adoption, we recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of accumulated deficit. Comparative prior year periods were not adjusted.

As a result of applying the modified retrospective method to adopt ASC 606, the following adjustments were made to the consolidated balance sheet as of January 1, 2018:

	As Reported	Adjustments				Adjusted under ASC 606
	December 31, 2017	Term and Perpetual License	Professional Services	Other	Costs to Obtain or Fulfill a Contract	January 1, 2018
			(in thousands)			
Cash and cash equivalents	$ 51,562	$ —	$ —	$ —	$ —	$ 51,562
Short-term investments	39,178	—	—	—	—	39,178
Accounts receivable, net	73,661	—	—	—	—	73,661
Deferred contract acquisition and fulfillment costs, current portion	—	—	—	—	7,844	7,844
Prepaid expenses and other current assets	8,877	—	30	—	—	8,907
Long-term investments	1,102	—	—	—	—	1,102
Property and equipment, net	8,589	—	—	—	—	8,589
Goodwill	83,164	—	—	—	—	83,164
Intangible assets, net	16,640	—	—	—	—	16,640
Deferred contract acquisition and fulfillment costs, non-current portion	—	—	—	—	19,321	19,321
Other assets	1,363	—	—	—	—	1,363
Total assets	$ 284,136	$ —	$ 30	$ —	$ 27,165	$ 311,331
Accounts payable	$ 2,240	$ —	$ —	$ —	$ —	$ 2,240
Accrued expenses	29,728	—	—	—	—	29,728
Deferred revenue, current portion	155,811	(10,912)	(1,523)	(1,356)	—	142,020
Other current liabilities	1,706	—	—	—	—	1,706
Deferred revenue, non-current portion	68,689	17,647	(2,624)	(339)	—	83,373
Other long-term liabilities	1,809	—	—	—	429	2,238
Total liabilities	259,983	6,735	(4,147)	(1,695)	429	261,305
Common stock	441	—	—	—	—	441
Treasury stock	(4,764)	—	—	—	—	(4,764)
Additional paid-in-capital	463,428	—	—	—	—	463,428
Accumulated other comprehensive loss	(39)	—	—	—	—	(39)
Accumulated deficit	(434,913)	(6,735)	4,177	1,695	26,736	(409,040)
Total stockholders’ equity	24,153	(6,735)	4,177	1,695	26,736	50,026
Total liabilities and stockholders’ equity	$ 284,136	$ —	$ 30	$ —	$ 27,165	$ 311,331

Term and Perpetual Licenses

Prior to the adoption of ASC 606, we recognized revenue for our term and perpetual licenses over the contractual period of maintenance and support due to the lack of vendor-specific objective evidence of selling price of maintenance and support. Under ASC 606, for our term and perpetual licenses which are not dependent on the continued delivery of content subscriptions, revenue is recognized at the time of delivery. For our perpetual licenses where the utility to the customer is dependent on the continued delivery of content subscriptions, the content subscription renewal option results in a material right with respect to the perpetual license. As a result, revenue related to the sale of these perpetual licenses is recognized ratably over the customer's estimated economic life of five years. The net impact of these changes resulted in a $6.7 million adjustment to accumulated deficit with an associated increase to deferred revenue.

Professional Services

Under ASC 605, professional services that were sold with term or perpetual licenses were recognized ratably over the contractual period of maintenance and support. Under ASC 606, these services are deemed distinct performance obligations and therefore recognized as the services are performed. The net impact of these changes resulted in a $4.2 million adjustment to accumulated deficit with an associated decrease to deferred revenue.

Costs to Obtain or Fulfill a Contract

Prior to the adoption of ASC 606, we expensed sales commissions in the period that they were earned by our employees (which was typically upon signing of an arrangement). Under ASC 606, the direct and incremental costs to obtain contracts with customers, including sales commissions, are deferred and recognized over a period of benefit that we have determined to be five years. In addition, under ASC 606, contract fulfillment costs associated with certain of our product offerings are deferred and amortized over the estimated period of benefit. Prior to the adoption of ASC 606, such costs were expensed as incurred. The net impact of these changes resulted in a $27.2 million increase in deferred contract acquisition and fulfillment costs and an adjustment to accumulated deficit.

Income Taxes

Deferred tax liabilities increased by $0.4 million due to the net impact of temporary differences associated with deferred revenue and capitalized costs to obtain or fulfill a contract created as a result of the adoption of ASC 606. As we fully reserve our net deferred tax assets in the United States, the United Kingdom and Ireland, the majority of the impact was offset by a corresponding adjustment to our valuation allowance.

Accounting Pronouncements Not Yet Effective

In August 2018, the FASB issued ASU 2018-15, *Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract,* which aligns the requirements for capitalizing implementation costs in cloud computing arrangements with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The new standard will be effective for us in the first quarter of 2020, with early adoption permitted. Entities can choose to adopt the new guidance prospectively or retrospectively. We are currently in the process of evaluating the effects of this pronouncement on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement*, which eliminates, modifies and adds disclosure requirements for fair value measurements. The new standard will be effective for us in the first quarter of 2020, with early adoption permitted. This ASU is not expected to have an impact on our consolidated financial statements.

In February 2016, the FASB issued ASU 2016-02, *Leases*, which was further clarified by ASU 2018-10, *Codification Improvements to Topic 842, Leases,* and ASU 2018-11, *Leases (Topic 842): Targeted Improvements*, both issued in July 2018. ASU 2016-02 requires companies to recognize on the balance sheet the assets and liabilities for the rights and obligations created by leased assets. The new standard also will require additional disclosure of qualitative and quantitative information about the amounts recorded in the financial statements related to lease agreements. The new standard will be effective for us in the first quarter of 2019. The standard requires a transition adoption election using either (1) a modified retrospective approach with periods prior to the adoption date being restated or 2) a prospective adoption approach with a cumulative-effect adjustment recognized to the opening balance of retained earnings on the adoption date with prior periods not restated. We are currently evaluating the impact that the adoption of this standard will have on our consolidated financial statements. We plan to adopt this standard using the prospective adoption approach and electing the practical expedients allowed under the standard. Although we have not finalized our evaluation of the impact of adoption of the standard on our consolidated financial statements, we expect there will be a material increase to assets and liabilities related to the recognition of new right-of-use assets and lease liabilities on our balance sheet for leases currently classified as operating leases.

(3) Business Combinations

tCell.io, Inc.

On October 15, 2018, we acquired tCell.io, Inc. (tCell) for total cash consideration of $15.4 million. We expensed the related acquisition costs of $0.1 million in general and administrative expense.

The following table summarizes the cash consideration paid for tCell and the preliminary allocation of purchase price to the estimated fair value of the assets acquired and liabilities assumed at the acquisition date (in thousands):

Cash consideration	$ 15,414
Recognized amount of identifiable assets acquired and liabilities assumed:	
Cash and cash equivalents	1,089
Other net working capital	(91)
Intangible asset	9,160
Total identifiable net assets assumed	10,158
Goodwill	5,256
Total purchase price allocation	$ 15,414

The fair value of the identifiable intangible asset was based on a valuation using a cost approach. The estimated fair value and useful life of the identifiable intangible asset was as follows:

	Amount	Weighted Average Amortization Life (years)
	(in thousands)	
Developed technology	$ 9,160	5

The excess of the purchase price over the tangible assets acquired, identifiable intangible asset acquired and assumed liabilities was recorded as goodwill. We believe that the amount of goodwill reflects the expected synergistic benefits of being able to leverage the integration of our existing product offerings with the products and technology acquired in connection with our acquisition of tCell and to successfully market and sell these new products to our customer base. The goodwill was allocated to our one reporting unit. The acquired goodwill will not be deductible for tax purposes.

These preliminary amounts are subject to subsequent adjustment as we obtain additional information to finalize certain components of working capital.

Following the acquisition, certain retained employees and non-employee contractors of tCell received an aggregate of 112,924 RSUs which will vest over a maximum of three years. The vesting of the RSUs are subject to the employee's continued service with us. Accordingly, compensation expense associated with the RSUs will be expensed as incurred in our post-acquisition financial statements.

Proforma results of operations have not been included, as the acquisition of tCell was not material to our results of operations for any periods presented.

Komand, Inc.

On July 12, 2017, we acquired 100% of the outstanding equity of Komand, Inc. (Komand) for total cash consideration of $14.7 million, net of cash acquired of $0.1 million. We expensed the related acquisition costs of $0.2 million in general and administrative expense.

The assets acquired and liabilities assumed were recorded at their estimated fair values as of the acquisition date. The excess of the purchase price over the assets acquired and liabilities assumed was recorded as goodwill. The fair value of goodwill and intangible assets were $8.1 million and $9.4 million, respectively.

The goodwill was allocated to our one reporting unit. The acquired goodwill and intangible asset were not deductible for tax purposes. Accordingly, a $2.6 million deferred tax benefit was recorded resulting from a partial release of our valuation allowance to account for the creation of a deferred tax liability for the developed technology intangible asset acquired which was not deductible for tax purposes.

Following the acquisition, certain retained employees of Komand (1) received an aggregate of 295,600 RSUs which will vest over four years and (2) shall be eligible for an aggregate of up to $5.0 million of incentive payments contingent on achievement of certain milestones within four years of the acquisition date. The vesting of the RSUs and eligibility to receive the incentive payments are each subject to the employee's continued service with us. Accordingly, compensation expense associated with the RSUs and incentive payments are expensed as incurred in our post-acquisition financial statements.

(4) Fair Value Measurements and Investments

We measure certain financial assets and liabilities at fair value. Fair value is determined based upon the exit price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants, as determined by either the principal market or the most advantageous market. Inputs used in the valuation techniques to derive fair values are classified based on a three-level hierarchy, as follows:

- Level 1: Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2: Observable inputs other than Level 1 prices such as quoted prices for similar assets or liabilities; quoted prices in markets with insufficient volume or infrequent transactions (less active markets); or model-derived valuations in which all significant inputs are observable or can be derived principally from or corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3: Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the asset or liability.

We consider an active market to be one in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis, and consider an inactive market to be one in which there are infrequent or few transactions for the asset or liability, the prices are not current, or price quotations vary substantially either over time or among market makers.

The following table presents our financial assets measured and recorded at fair value on a recurring basis using the above input categories:

	As of December 31, 2018			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Description:				
Assets:				
Money market funds	$ 55,646	$ —	$ —	$ 55,646
U.S. Government agencies	74,481	—	—	74,481
Commercial paper	—	57,554	—	57,554
Corporate bonds	—	48,495	—	48,495
Agency bonds		19,087		19,087
Asset-backed securities	—	7,483	—	7,483
Total assets	$ 130,127	$ 132,619	$ —	$ 262,746

	As of December 31, 2017			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Description:				
Assets:				
Money market funds	$ 95	$ —	$ —	$ 95
U.S. Government agencies	11,869	—	—	11,869
Commercial paper	—	12,942	—	12,942
Corporate bonds	—	12,964	—	12,964
Asset-backed securities	—	2,505	—	2,505
Total assets	$ 11,964	$ 28,411	$ —	$ 40,375

As of December 31, 2018, the fair value of our 1.25% convertible senior notes due 2023 (Notes), as further described in Note 7, *Convertible Senior Notes and Capped Calls*, was $233.0 million based upon quoted market prices. We consider the fair value of the Notes to be a Level 2 measurement due to limited trading activity of the Notes. We had no financial liabilities measured and recorded at fair value on a recurring basis as of December 31, 2018 and 2017.

Our investments, which are all classified as available-for-sale, consisted of the following:

	As of December 31, 2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
Description:				
U.S. Government agencies	$ 71,480	$ 20	$ (17)	$ 71,483
Commercial paper	57,554	—	—	57,554
Corporate bonds	48,532	15	(52)	48,495
Agency bonds	19,077	16	(6)	19,087
Asset-backed securities	7,490	—	(7)	7,483
Total	$ 204,133	$ 51	$ (82)	$ 204,102

	As of December 31, 2017			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
	(in thousands)			
Description:				
U.S. Government agencies	$ 11,880	$ —	$ (11)	$ 11,869
Commercial paper	12,942	—	—	12,942
Corporate bonds	12,991	—	(27)	12,964
Asset-backed securities	2,506	—	(1)	2,505
Total	$ 40,319	$ —	$ (39)	$ 40,280

As of December 31, 2018 and 2017, our available-for-sale investments had maturities ranging from 3 months to 2 years.

Our available-for-sale investments as of December 31, 2018 included $3.0 million of U.S. Government agencies investments which are classified as cash and cash equivalents as the original maturity was less than three months.

For all of our investments for which the amortized cost basis was greater than the fair value at December 31, 2018 and 2017, we have concluded that there is no plan to sell the security nor is it more likely than not that we would be required to sell the security before its anticipated recovery. In making the determination as to whether the unrealized loss is other-than-temporary, we considered the length of time and extent the investment has been in an unrealized loss position, the financial condition and near-term prospects of the issuers, the issuers' credit rating and the time to maturity.

(5) Property and Equipment

Property and equipment are recorded at cost and consist of the following:

	As of December 31,	
	2018	2017
	(in thousands)	
Computer equipment and software	$ 18,724	$ 16,205
Furniture and fixtures	5,580	4,034
Leasehold improvements[1]	19,437	9,079
Total	43,741	29,318
Less accumulated depreciation	(26,218)	(20,729)
Property and equipment, net	$ 17,523	$ 8,589

(1) As of December 31, 2018, leasehold improvements included $4.0 million of construction-in progress related to our new Boston, Massachusetts corporate headquarters facility.

We recorded depreciation expense of $6.5 million, $4.8 million and $4.3 million in 2018, 2017 and 2016, respectively.

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(6) Goodwill and Intangible Assets

Goodwill was $88.4 million and $83.2 million as of December 31, 2018 and 2017, respectively. There were no goodwill impairment charges in 2018, 2017 or 2016. The following table displays the changes in the gross carrying amount of goodwill:

	Amount
	(in thousands)
Balance at December 31, 2016	$ 75,110
Komand acquisition	8,054
Balance at December 31, 2017	$ 83,164
tCell acquisition	5,256
Balance at December 31, 2018	$ 88,420

The following table presents details of our intangible assets which include acquired identifiable intangible assets and capitalized internal-use software costs:

		As of December 31, 2018			As of December 31, 2017		
	Weighted-Average Estimated Useful Life (years)	Gross Carrying Amount	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Amortization	Net Book Value
		(in thousands)					
Intangible assets subject to amortization:							
Developed technology	5.5	$ 29,771	$ (9,741)	$ 20,030	$ 20,611	$ (5,756)	$ 14,855
Customer relationships	6.7	1,000	(504)	496	1,000	(351)	649
Trade names	6.1	519	(516)	3	519	(510)	9
Non-compete agreements	2.0	40	(40)	—	40	(40)	—
Total acquired intangible assets		31,330	(10,801)	20,529	22,170	(6,657)	15,513
Internal-use software		3,786	(360)	3,426	1,162	(35)	1,127
Total intangible assets		$ 35,116	$ (11,161)	$ 23,955	$ 23,332	$ (6,692)	$ 16,640

Intangible assets are expensed on a straight-line basis over the useful life of the asset. We recorded amortization expense of $4.6 million, $2.8 million and $2.4 million in 2018, 2017 and 2016, respectively.

Estimated future amortization expense of the acquired identifiable intangible assets and completed capitalized internal-use software costs as of December 31, 2018 is as follows (in thousands):

2019	$ 6,251
2020	6,193
2021	5,398
2022	2,927
2023	1,451
2024 and thereafter	—
Total	$ 22,220

The table above excludes the impact of $1.7 million of capitalized internal-use software costs for projects that have not been completed as of December 31, 2018, and therefore, we have not determined the useful life of the software, nor have all the costs associated with these projects been incurred.

(7) Convertible Senior Notes and Capped Calls

In August 2018, we issued $200.0 million aggregate principal amount of convertible senior notes due August 1, 2023 and an additional $30.0 million aggregate principal amount of such notes pursuant to the exercise in full of the over-allotment options of the initial purchasers (collectively, the Notes). The Notes are our senior unsecured obligations and bear interest at a fixed rate of 1.25% per annum, payable semi-annually in arrears on February 1 and August 1 of each year, commencing on February 1, 2019.

The Notes will mature and are payable in full on August 1, 2023, unless earlier converted, redeemed or repurchased. The Notes do not contain any financial covenants. The total net proceeds from the Notes offering, after deducting initial purchase discounts and estimated debt issuance costs was $223.1 million. The Notes are governed by an indenture between the Company, as an issuer, and U.S. National Association, as trustee (the Indenture).

Each $1,000 principal amount of the Notes is initially convertible into 24.0460 shares of our common stock, the Conversion Option, which is equivalent to an initial conversion price of approximately $41.59 per share, subject to adjustment upon the occurrence of specified events. The holders of the Notes may convert their notes at their option at any time prior to the close of business on the business day immediately preceding February 1, 2023, only under the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on December 31, 2018 (and only during such calendar quarter), if the last reported sale price of our common stock for at least 20 trading days (whether or not consecutive) during a period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price of the Notes on each applicable trading day; (2) during the five business day period after any five consecutive trading day period (measurement period) in which the trading price (as defined in the Indenture) per $1,000 principal amount of the Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of our common stock and the conversion rate of the Notes on each such trading day; (3) if we call any or all of the Notes for redemption, at any time prior to the close of business on the scheduled trading day immediately preceding the redemption date; or (4) upon the occurrence of specified corporate events (as set forth in the Indenture). On or after February 1, 2023 until the close of business on the second scheduled trading day immediately preceding the maturity date, holders may convert their Notes at any time, regardless of the foregoing circumstances. Upon conversion, we will pay or deliver, as the case may be, cash, shares of our common stock or a combination of cash and shares of our common stock, at our election, in the manner and subject to the terms and conditions provided in the Indenture. We may not redeem the Notes prior to August 6, 2021. On or after August 6, 2021, we may redeem for cash all or any portion of the Notes, at our option, if the last reported sale price of our common stock has been at least 130% of the conversion price then in effect for at least 20 trading days (whether or not consecutive) during any 30 consecutive trading day period (including the last trading day of such period) ending on, and including the trading day immediately preceding, the date on which we provide the redemption notice at a redemption price equal to 100% principal amount of the Notes to be redeemed, plus accrued and unpaid interest to, but excluding, the redemption date. If we undergo a fundamental change (as set forth in the Indenture) at any time prior to the maturity date, holders of the Notes, will have the right, at their option, to require us to repurchase for cash all or any portion of their Notes at a repurchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest to, but excluding, the fundamental change repurchase date. In addition, following certain corporate events that occur prior to the maturity date or following our issuance of a notice of redemption, in each case as described in the Indenture, we will increase the conversion rate for a holder of the Notes who elects to convert its Notes in connection with such a corporate event or during the related redemption period in certain circumstances. During the year ended December 31, 2018, none of the conditions allowing holders of the Notes to convert their Notes had been met. The Notes are therefore not convertible as of December 31, 2018 and are classified as long-term debt.

The foregoing description is qualified in its entirety by reference to the text of the Indenture and the Form of the Notes, which are incorporated by reference as Exhibits 4.4 and 4.5 to this Annual Report on Form 10-K.

In accounting for the transaction, the Notes have been separated into liability and equity components. The initial carrying amount of the liability component was calculated by measuring the fair value of a similar debt instrument that does not have an associated convertible feature. The initial carrying amount of the equity component representing the Conversion Option was $53.8 million and was determined by deducting the fair value of the liability component from the par value of the Notes. The equity component was recorded as an increase to additional paid-in capital and is not remeasured as long as it continues to meet the conditions for equity classification. The excess of the principal amount of the Notes over the initial carrying amount of the liability component, the debt discount, is amortized to interest expense over the contractual term of the Notes at an effective interest rate of 7.36%.

In accounting for the debt issuance costs of $6.9 million related to the Notes, we allocated the total amount incurred to the liability and equity components of the Notes based on their relative fair values. Issuance costs attributable to the liability component of $5.3 million are netted against the principal balance of the Notes and will be amortized to interest expense using the effective interest method over the contractual term of the Notes. Issuance costs attributable to the equity component of $1.6 million were netted with the equity component in additional paid-in capital.

The net carrying amount of the liability component of the Notes was as follows:

	As of December 31, 2018
	(in thousands)
Principal	$ 230,000
Unamortized debt discount	(50,334)
Unamortized issuance costs	(4,978)
Net carrying amount	$ 174,688

The net carrying amount of the equity component was as follows:

	As of December 31, 2018
	(in thousands)
Debt discount for conversion option	$ 53,820
Issuance costs	(1,626)
Net carrying amount	$ 52,194

Interest expense related to the Notes was as follows:

	Year Ended December 31, 2018
	(in thousands)
Contractual interest expense	$ 1,103
Amortization of debt discount	3,486
Amortization of issuance costs	345
Total interest expense	$ 4,934

The future payments of the principal and contractual interest related to the Notes as of December 31, 2018 are as follows (in thousands):

	Principal	Interest	Total
2019	$ —	$ 2,779	$ 2,779
2020	—	2,875	2,875
2021	—	2,875	2,875
2022	—	2,875	2,875
2023	230,000	2,875	232,875
Total	$ 230,000	$ 14,279	$ 244,279

In connection with the offering of the Notes, we entered into privately negotiated capped call transactions with certain counterparties (Capped Calls). The Capped Calls each have an initial strike price of $41.59 per share, subject to certain adjustments, which correspond to the initial conversion price of the Notes. The Capped Calls have initial cap prices of $63.98 per share, subject to certain adjustments. The Capped Calls are expected to offset potential dilution to our common stock upon conversion of the Notes, with such offset subject to a cap based on the cap price. The Capped Calls cover, subject to anti-dilution adjustments, approximately 5.5 million shares of our common stock. For accounting purposes, the Capped Calls are separate transactions, and not part of the terms of the Notes. The Capped Calls are recorded in stockholders' equity and are not accounted for as derivatives. Accordingly, the cost of $26.9 million incurred in connection with the Capped Calls was recorded as a reduction to additional paid-in capital.

The debt discount and the difference between the calculation of the book and tax allocation of debt issuance costs between the liability and equity components of the Notes, resulted in a difference between the carrying amount and tax basis of the Notes. This taxable temporary difference resulted in the recognition of a $13.0 million deferred tax liability which was recorded as a reduction to additional paid-in capital. The creation of the deferred tax liability represents a source of future taxable income which supports realization of a portion of our deferred tax assets. Therefore, we released $13.0 million of our valuation allowance which was recorded as an offsetting increase to additional paid-in capital. Accordingly, the net impact to additional paid-in capital as a result of the recognition of the deferred tax liability and the release of the valuation allowance was zero.

The net impact to our stockholders' equity, included in additional paid-in capital, of the above components of the Notes was as follows (in thousands):

Conversion option	$	53,820
Purchase of capped calls		(26,910)
Issuance costs		(1,626)
Total	$	25,284

(8) Stockholders' Equity

(a) Common Stock

On January 30, 2018, we completed a public offering of 5,950,000 shares of our common stock, of which 1,500,000 shares of common stock were sold by us and 4,450,000 shares of common stock were sold by certain existing stockholders, at an offering price of $22.00 per share, including 770,000 shares pursuant to the underwriters' option to purchase additional shares from the existing stockholders. Our net proceeds from the offering were $30.9 million, after deducting underwriting discounts and commissions and our offering expenses. We did not receive any of the proceeds from the sale of shares by the existing stockholders.

(b) Treasury Stock

In 2017, we repurchased 22,754 shares of common stock for an aggregate amount of $0.4 million to settle employee withholding taxes upon the vesting of restricted stock awards.

(9) Stock-Based Compensation

(a) General

In connection with our IPO, our board of directors resolved not to make future grants under our 2011 Stock Option and Grant Plan (the 2011 Plan). The 2011 Plan will continue to govern outstanding awards granted thereunder. The 2011 Plan provided for the grant of qualified incentive stock options and nonqualified stock options or other awards such as RSAs to our employees, officers, directors and outside consultants.

In July 2015, our board of directors adopted and our stockholders approved our 2015 Equity Incentive Plan (the 2015 Plan). We initially reserved 800,000 shares of our common stock for the issuance of awards under the 2015 Plan plus the number of shares of common stock reserved for issuance under the 2011 Plan at the time the 2015 Plan became effective. The 2015 Plan also provides that (i) any shares subject to awards granted under the 2011 Plan that would have otherwise returned to the 2011 Plan (such as upon the expiration or termination of a stock award prior to vesting) will be added to, and available for issuance under, the 2015 Plan and (ii) the number of shares reserved and available for issuance under the 2015 Plan automatically increases each January 1, beginning on January 1, 2016, by 4% of the outstanding number of shares of our common stock on the immediately preceding December 31 (known as the "evergreen" provision) or such lesser number of shares as determined by our board of directors. Additionally, on October 8, 2015, our board of directors amended, effective as of the acquisition of Logentries, the 2015 Plan to reserve an additional 1,500,000 shares of our common stock for issuance of inducement awards.

In March 2018, 2017 and 2016, we increased the number of shares authorized to be issued under the 2015 Plan by 1,762,149, 1,702,187 and 1,661,616 shares, respectively, which represents the amount automatically added pursuant to the annual evergreen provision contained therein. As of December 31, 2018, the shares of common stock authorized to be issued under the 2015 Plan totaled 11,888,081 and there were 998,777 shares of common stock available for grant.

We recognize stock-based compensation expense for all awards on a straight-line basis over the applicable vesting period, which is generally four years.

Stock-based compensation expense for restricted stock, restricted stock units, stock options and issuances of common stock pursuant to our employee stock purchase plan was classified in the accompanying consolidated statements of operations as follows:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
Stock-based compensation expense:			
Cost of revenue	$ 1,692	$ 1,085	$ 610
Research and development	10,822	7,205	6,054
Sales and marketing	7,569	5,756	6,607
General and administrative	7,510	5,495	4,045
Total stock-based compensation expense	$ 27,593	$ 19,541	$ 17,316

(b) *Restricted Stock and Restricted Stock Units*

Restricted stock and restricted stock unit activity during 2018, 2017 and 2016 was as follows:

	Restricted Stock		Restricted Stock Units	
	Shares	Weighted-Average Grant Date Fair Value	Shares	Weighted-Average Grant Date Fair Value
Unvested balance as of December 31, 2015	1,149,257	$ 19.34	—	$ —
Granted	—	—	919,397	13.37
Vested	(538,896)	20.67	(91,020)	12.93
Forfeited	(25,357)	20.96	(93,800)	12.97
Unvested balance as of December 31, 2016	585,004	18.05	734,577	13.47
Granted	—	—	1,938,860	14.97
Vested	(358,214)	17.85	(435,573)	13.80
Forfeited	(16,707)	23.01	(249,355)	14.22
Unvested balance as of December 31, 2017	210,083	18.00	1,988,509	14.77
Granted	—	—	2,099,394	25.19
Vested	(187,706)	18.80	(973,443)	17.41
Forfeited	(700)	23.01	(340,687)	18.96
Unvested balance as of December 31, 2018	21,677	$ 10.88	2,773,773	$ 21.21

As of December 31, 2018, the unrecognized compensation cost related to shares of unvested restricted stock and restricted stock units expected to vest was $54.4 million. This unrecognized compensation will be recognized over an estimated weighted-average amortization period of 2.7 years.

(c) Stock Options

The following table summarizes information about stock option activity during the reporting periods:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2015	4,246,525	$ 5.99		
Granted	1,454,626	13.43		
Options assumed from acquisition	—	—		
Exercised	(650,185)	4.43		$ 6,409
Forfeited/cancelled	(470,591)	9.65		
Outstanding as of December 31, 2016	4,580,375	8.20		
Granted	1,304,238	13.52		
Exercised	(887,062)	6.59		$ 9,665
Forfeited/cancelled	(312,597)	12.79		
Outstanding as of December 31, 2017	4,684,954	9.68		
Granted	107,850	24.44		
Exercised	(944,658)	8.05		$ 19,982
Forfeited/cancelled	(134,967)	15.20		
Outstanding as of December 31, 2018	3,713,179	$ 10.32	6.20	$ 77,396
Vested and exercisable as of December 31, 2018	2,685,963	$ 8.76	5.55	$ 60,169

As of December 31, 2018, the unrecognized compensation cost related to our unvested stock options expected to vest was $6.4 million. This unrecognized compensation will be recognized over an estimated weighted-average amortization period of 1.9 years.

The total fair value of stock options vested in 2018, 2017 and 2016 was $5.1 million, $5.9 million and $3.4 million, respectively. The weighted-average grant date fair value per share of stock options granted in 2018, 2017 and 2016 was $11.86, $6.72 and $6.38 per share, respectively.

(d) Determining the Fair Value of Options

We use the Black-Scholes option pricing model to estimate the fair value of stock option awards. The Black-Scholes option pricing model requires management to make a number of assumptions, including the expected life of the option, the volatility of the underlying stock, the risk-free interest rate and expected dividends. The assumptions used in our Black-Scholes option-pricing model represent management's best estimates at the time of grant. These estimates involve a number of variables, uncertainties and assumptions and the application of management's judgment, as they are inherently subjective. If any assumptions change, our stock-based compensation expense could be materially different in the future.

Expected Term

The expected term represents the period that our stock options are expected to be outstanding. We calculated the expected term using the simplified method based on the average of each option's vesting term and the contractual period during which the option can be exercised, which is typically 10 years following the date of grant.

Expected Volatility

We determine the price volatility factor based on the historical volatilities of our publicly traded peer group as we do not have a significant trading history for our common stock. Industry peers consist of several public companies in the technology industry that are similar to us in size, stage of life cycle, and financial leverage. We used the same set of peer group companies in all the relevant valuation estimates. We intend to continue to consistently apply this process using the same or similar public companies until a sufficient amount of historical information regarding the volatility of our own common stock share price becomes available, or unless circumstances change such that the identified companies are no longer similar to us, in which case, more suitable companies whose share prices are publicly available would be utilized in the calculation.

Risk-Free Interest Rate

The risk-free interest rate was based on U.S. Treasury zero-coupon securities with maturities consistent with the estimated expected term.

Expected Dividend Yield

We have not paid dividends on our common stock nor do we expect to pay dividends in the foreseeable future.

The following table reflects the range of assumptions for options granted during 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
Expected term (in years)	6.1	5.5 - 6.1	5.5 – 6.3
Expected volatility	46 – 48%	48 – 52%	48 – 50%
Risk-free interest rate	2.4 – 2.8%	1.8 – 2.2%	1.2 – 1.9%
Expected dividend yield	—	—	—
Grant date fair value per share	$ 10.55 – 13.11	$ 6.09 – 9.38	$ 5.53 – 8.35

(e) Employee Stock Purchase Plan

On July 17, 2015, we filed a registration statement on Form S-8 with the Securities and Exchange Commission registering 800,000 shares of our common stock reserved under our 2015 Employee Stock Purchase Plan (ESPP). Under the ESPP, employees may set aside after-tax withholdings to purchase our common shares at a discounted price. In March 2018, 2017 and 2016, we increased the number of shares to be authorized under the ESPP by 440,537, 425,547 and 415,404 shares, respectively, which represents the amount automatically added pursuant to the annual evergreen provision of the ESPP. As of December 31, 2018, the shares of common stock authorized to be issued under the ESPP totaled 2,081,488 and there were 1,268,266 shares of common stock available for grant.

Under the ESPP, employees may set aside up to 15% of their gross earnings, on an after-tax basis, to purchase our common shares at a discounted price, which is calculated at 85% of the lesser of: (i) the market value of our common stock at the beginning of each offering period and (ii) the market value of our common stock on the applicable purchase date.

The following table reflects the assumptions used in the Black-Scholes option pricing model to calculate the expense related to the ESPP:

	Year Ended December 31,		
	2018	2017	2016
Expected term (in years)	0.5 - 1.0	0.5 - 1.0	0.5 - 1.0
Expected volatility	37%	37 – 40%	42 – 49%
Risk-free interest rate	2.0 – 2.6%	0.9 – 1.3%	0.5 – 0.7%
Expected dividend yield	—	—	—
Grant date fair value per share	$ 6.62 – 10.95	$ 4.01 – 5.35	$ 3.58 – 5.49

On March 15, 2016, we issued 192,676 shares of common stock to employees for aggregate proceeds of $2.1 million. The purchase price of the shares of common stock was $10.88 per share, which was discounted in accordance with the terms of the ESPP from the closing price of our common stock on March 15, 2016 of $12.80.

On September 15, 2016, we issued 153,602 shares of common stock to employees for aggregate proceeds of $1.6 million. The purchase price of the shares of common stock was $10.60 per share, which was discounted in accordance with the terms of the ESPP from the closing price of our common stock on March 16, 2016 of $12.47.

On March 15, 2017, we issued 138,085 shares of common stock to employees for aggregate proceeds of $1.5 million. The purchase prices of the shares of common stock were $10.60 and $12.79 per share, which were discounted in accordance with the terms of the ESPP from the closing prices of our common stock on March 16, 2016 of $12.47 and on March 15, 2017 of $15.05, respectively.

On September 15, 2017, we issued 109,144 shares of common stock to employees for aggregate proceeds of $1.4 million. The purchase price of the shares of common stock was $12.96 per share, which was discounted in accordance with the terms of the ESPP from the closing price of our common stock on March 16, 2017 of $15.25.

On March 15, 2018, we issued 123,607 shares of common stock to employees for aggregate proceeds of $1.6 million. The purchase prices of the shares were $12.96 and $14.78 per share, which were discounted in accordance with the terms of the ESPP from the closing prices of our common stock on March 16, 2017 of $15.25 and on September 18, 2017 of $17.39, respectively.

On September 14, 2018, we issued 96,108 shares of common stock to employees for aggregate proceeds of $2.0 million. The purchase prices of the shares were $21.96 and $14.78 per share, which were discounted in accordance with the terms of the ESPP from the closing prices of our common stock on March 16, 2018 of $25.84 and on September 18, 2017 of $17.39, respectively.

(10) Income Taxes

Loss before income taxes included in the consolidated statements of operations was as follows:

	Year Ended December 31,		
	2018	2017	2016
		(in thousands)	
United States	$ (39,754)	$ (22,757)	$ (41,466)
Foreign	(15,325)	(24,949)	(7,561)
Loss before income taxes	$ (55,079)	$ (47,706)	$ (49,027)

Income tax expense (benefit) included in the consolidated statements of operations was as follows:

	Year Ended December 31,		
	2018	2017	2016
		(in thousands)	
Current:			
Federal	$ 124	$ 333	$ 493
State and local	126	128	61
Foreign	228	163	(656)
Total current (benefit) expense	478	624	(102)
Deferred:			
Federal	(285)	(2,885)	98
State and local	16	8	13
Foreign	257	17	(36)
Total deferred expense	(12)	(2,860)	75
Income tax expense (benefit)	$ 466	$ (2,236)	$ (27)

The reconciliation of income tax expense (benefit) to the amount computed at the federal statutory rate of 21% for the year ended December 31, 2018 and 34% for the years ended December 31, 2017 and 2016 was as follows:

	Year Ended December 31,		
	2018	2017	2016
Expected income tax	21.0 %	34.0 %	34.0 %
State taxes, net of federal benefit	(0.2)	(0.2)	(0.1)
Permanent differences	0.2	(0.4)	(0.4)
Stock compensation	9.3	4.6	(1.0)
Federal research and development credit	1.2	1.0	2.4
Foreign rate differential	(1.1)	(8.7)	(3.0)
Change in valuation allowance	(32.8)	(26.1)	(31.9)
Other	1.5	0.5	0.1
Total income tax expense (benefit)	(0.9)%	4.7 %	0.1 %

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (Tax Act) was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a federal corporate tax rate decrease from 34% to 21% for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a territorial system and a one-time transition tax on the mandatory deemed repatriation of foreign earnings (transition tax). We recorded a one-time income tax benefit of $0.4 million in the fourth quarter of 2017 as a result of the Tax Act. The one-time income tax benefit included $0.2 million related to the remeasurement of certain deferred tax assets and liabilities based on the lower tax rates at which they are expected to reverse in the future. The one-time income tax benefit also included a provisional amount of $0.2 million related to the release of valuation allowance against alternative minimum tax (AMT) credits that we will receive a benefit for in the form an AMT tax refund. We have not recorded any transition tax on foreign earnings as our foreign subsidiaries have an accumulated deficit.

The Tax Act requires a U.S. corporation to record taxes on global intangible low-tax income (GILTI) and elect an accounting policy to either 1) recognize GILTI as a current period expense when incurred or 2) to record deferred taxes for the temporary basis differences expected to reverse in the future as GILTI. We did not generate any GILTI during 2018. We have elected to recognize GILTI tax as a period cost when incurred.

Additionally, Staff Accounting Bulletin No. 118 (SAB 118) was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Act. December 22, 2018, marked the end of the measurement period for purposes of SAB 118. As such, we have completed the analysis based on legislative updates relating to the Tax Act currently available which resulted in immaterial SAB 118 tax adjustments in the fourth quarter of 2018.

Net deferred tax assets and liabilities, as set forth in the table below, reflect the impact of temporary differences between the amounts of assets and liabilities recorded for financial statement purposes and such amounts measured in accordance with tax laws:

	As of December 31,	
	2018	2017
	(in thousands)	
Deferred tax assets:		
Accruals and reserves	$ 397	$ 636
Net operating loss carryforwards	55,457	36,778
Deferred revenue	15,421	11,985
Depreciation	1,542	926
Research and development credits	3,440	2,441
Stock-based compensation	4,851	3,702
Tax credits	932	657
Other	953	557
Total deferred tax assets	82,993	57,682
Deferred tax liabilities:		
Intangible assets	(1,104)	(616)
Convertible senior notes	(12,537)	—
Deferred contract acquisition and fulfillment costs	(9,796)	—
Other	(79)	—
Total deferred tax liabilities	(23,516)	(616)
Less: Valuation allowance	(60,130)	(57,359)
Net deferred tax liabilities	$ (653)	$ (293)

As of December 31, 2018, we have evaluated the need for a valuation allowance on deferred tax assets. In assessing whether the deferred tax assets are realized, management considered whether it is more likely than not that some portion or all of the deferred tax assets will not be realized. Due to our history of generating losses in the United States, the United Kingdom and Ireland, we continue to record a full valuation allowance against our deferred tax assets in these jurisdictions. If we achieve future profitability, a significant portion of these deferred tax assets could be available to offset future income taxes.

The valuation allowance increased by $2.8 million for the year ended December 31, 2018, primarily due to additional operating losses generated during the year partially offset by an increase in deferred tax liabilities associated with our convertible senior notes and deferred contract acquisition and fulfillment costs as a result of the adoption of ASC 606.

We plan to permanently reinvest the undistributed earnings of our foreign subsidiaries. If we repatriate these earnings, we may be required to pay U.S. state and local taxes, as well as foreign withholding taxes.

As of December 31, 2018, we had federal and state net operating loss carryforwards of $171.2 million and $118.7 million, respectively. As part of the Tax Act, federal net operating losses generated after December 31, 2017, which total $50.3 million, have no expiration date and will be carried forward indefinitely. The remaining federal and state net operating loss carryforwards expire at various dates beginning in 2021. As of December 31, 2018, we had foreign net operating loss carryforwards of $93.1 million that can be carried forward indefinitely. We also had federal, state and international research and development credit carryforwards of $2.2 million, $1.1 million and $0.1 million as of December 31, 2018, respectively. These credit carryforwards expire at various dates beginning in 2023.

We believe that a change of ownership within the meaning of Section 382 and 383 of the Internal Revenue Code of 1986, as amended, occurred in 2011 and 2018. Under Section 382 and 383 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation’s ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes, such as research and development credits, to offset its post-change income may be limited. The analysis indicates that although an ownership change occurred, Rapid7, Inc.'s U.S. federal net operating losses and research and development credits would not expire before utilization as a result of the ownership change. In the event we have subsequent changes in ownership, net operating losses and research and development credit carryforwards could be limited.

We file income tax returns in all jurisdictions in which we operate. We have established reserves to provide for additional income taxes that management believes will more likely or not be due in future years. The reserves have been established based upon our assessment as to the potential exposure. Changes in our reserves for unrecognized income tax benefits are as follows:

	Amount (in thousands)
Balance at December 31, 2016	$ 388
Decreases based on settlements with taxing authorities	(343)
Reductions based on lapse in statute of limitations	(16)
Balance at December 31, 2017	29
Reductions based on lapse in statute of limitations	(17)
Balance at December 31, 2018	$ 12

In the normal course of business, we are subject to examination by federal, state, and foreign jurisdictions, where applicable. The statute of limitations for these jurisdictions is generally three to six years. However, to the extent we utilize net operating losses or other similar carryforward attributes such as credits, the statute remains open to the extent of the net operating losses or credits that are utilized. We have no tax returns under examination as of December 31, 2018. We record interest and penalties on any income tax liability as income tax expense. We recorded nominal interest and penalties in 2018, 2017 and 2016. During the next 12 months, we do not expect any material changes to our uncertain tax positions other than the accrual of interest in the normal course of business.

(11) Net Loss Per Share

The following table summarizes the computation of basic and diluted net loss per share of our common stock for 2018, 2017 and 2016:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands, except share and per share data)		
Numerator:			
Net loss	$ (55,545)	$ (45,470)	$ (49,000)
Denominator:			
Weighted-average common shares outstanding, basic and diluted	46,456,825	42,952,950	41,248,473
Net loss per share, basic and diluted	$ (1.20)	$ (1.06)	$ (1.19)

The following potentially dilutive securities outstanding, prior to the use of the treasury stock method or if-converted method, have been excluded from the computation of diluted weighted-average shares outstanding for the respective periods below because they would have been anti-dilutive:

	Year Ended December 31,		
	2018	2017	2016
Options to purchase common stock	3,713,179	4,684,954	4,580,375
Unvested restricted stock	21,677	210,083	585,004
Unvested restricted stock units	2,773,773	1,988,509	734,577
Shares to be issued under ESPP	74,634	79,551	91,815
Total	6,583,263	6,963,097	5,991,771

Additionally, the 5.5 million shares underlying the conversion option of the Notes are not considered in the calculation of diluted net loss per share as the effect would be anti-dilutive. The Notes are not convertible as of December 31, 2018. We expect to settle the principal amount of the Notes in cash and therefore use the treasury stock method for calculating any potential dilutive effect of the conversion spread on diluted net income per share, if applicable. The conversion spread will have a dilutive impact on diluted net income per share when the average market price of our common stock for a given period of time exceeds the initial conversion price of $41.59 per share for the Notes.

(12) Commitments and Contingencies

(a) Leases

We have operating lease commitments for our facilities that expire at various dates through 2029. For operating leases that contain rent escalation or rent concession provisions, we record the total rent expense on a straight-line basis over the term of the lease. We record the difference between the rent paid and the straight-line rent as a deferred rent liability on the accompanying consolidated balance sheets. Further, landlord incentives, such as tenant improvement allowances, are deferred and amortized on a straight-line basis over the lease term as a reduction of rent expense. In addition to rental payments, certain leases require additional payments for real estate taxes, common area maintenance and insurance, which are expensed when incurred and not included in the future minimum payments table noted below.

Rent expense was $7.5 million, $5.7 million and $5.0 million for 2018, 2017 and 2016, respectively.

The future minimum payments under non-cancellable operating leases as of December 31, 2018 are as follows:

2019	$	9,899
2020		11,616
2021		10,933
2022		11,054
2023		11,136
Thereafter		53,648
Total	$	108,286

(b) Purchase Obligations

As of December 31, 2018, we have non-cancellable firm purchase commitments relating to cloud infrastructure services, including with Amazon Web Services, software subscriptions and the build-out of our new corporate headquarters that will be payable in the amounts of $42.5 million, $23.6 million, $25.8 million, $0.2 million, $0.1 million and $0.1 million for 2019, 2020, 2021, 2022, 2023 and thereafter.

(c) Letters of Credit

As of December 31, 2018, we had a total of $8.2 million in letters of credit outstanding as collateral for certain office space leases and a corporate credit card program. These irrevocable letters of credit, which are not included in the table of contractual obligations above, are unsecured and are expected to remain in effect, in some cases, until 2029.

(d) Warranty

We provide limited product warranties. Historically, any payments made under these provisions have been immaterial.

(e) Litigation and Claims

In November 2016, our wholly-owned subsidiary, Rapid7 LLC, and two of our then executive officers were named as defendants in a class action lawsuit which alleged violations of certain Massachusetts wage and hour laws. In the fourth quarter of 2018, we agreed to a settlement in the amount of $0.6 million.

In October 2018, Finjan, Inc. (Finjan) filed a complaint against us and our wholly-owned subsidiary, Rapid7 LLC, in the United States District Court, District of Delaware, alleging patent infringement of seven patents held by them. In the complaint, Finjan sought unspecified damages, attorneys' fees and injunctive relief. We intend to vigorously contest Finjan's claims. This litigation is still in its early stages and the final outcome, including our liability, if any, with respect to Finjan's claims, is uncertain. 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.

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

(f) Indemnification Obligations

We agree to standard indemnification provisions in the ordinary course of business. Pursuant to these provisions, we agree to indemnify, hold harmless and reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally our customers, in connection with any United States patent, copyright or other intellectual property infringement claim by any third party arising from the use of our products or services in accordance with the agreement or arising from our gross negligence, willful misconduct or violation of the law (provided that there is not gross or willful misconduct on the part of the other party) with respect to our products or services. The term of these indemnification provisions is generally perpetual from the time of execution of the agreement. We carry insurance that covers certain third-party claims relating to our services and limits our exposure. We have never incurred costs to defend lawsuits or settle claims related to these indemnification provisions.

As permitted under Delaware law, we have entered into indemnification agreements with our officers and directors, indemnifying them for certain events or occurrences while they serve as officers or directors of the company.

(13) Employee Benefit Plan

In December 2008, we established a discretionary 401(k) plan in which all full-time U.S. employees above the age 18 are eligible to participate after they have been employed for us for 90 days following the applicable date of hire. Matching contributions to the 401(k) plan can be made at our discretion. In 2018 and 2017, we made discretionary contributions of $2.0 million and $1.4 million, respectively, to the plan. We did not make any contributions to the 401(k) plan in 2016.

(14) Segment Information and Information about Geographic Areas

We operate in one segment. Our chief operating decision maker is our Chief Executive Officer, who makes operating decisions, assesses performance and allocates resources on a consolidated basis.

Net revenues by geographic area presented based upon the location of the customer are as follows:

	Year Ended December 31,		
	2018	2017	2016
	(in thousands)		
North America	$ 207,727	$ 170,667	$ 134,988
Other	36,364	30,273	22,449
Total	$ 244,091	$ 200,940	$ 157,437

Of the total net revenues generated in North America, 96%, 93% and 95% was generated in the United States in 2018, 2017 and 2016, respectively.

Property and equipment, net by geographic area as of December 31, 2018 and 2017 is presented in the table below:

	As of December 31,	
	2018	2017
	(in thousands)	
United States	$ 16,311	$ 7,182
Other	1,212	1,407
Total	$ 17,523	$ 8,589

(15) Related Party Transactions

In October 2015, Intel Security announced the end-of-sale for the McAfee Vulnerability Manager to customers and partners, effective January 11, 2016, with end-of-life to follow, and announced that we were named their exclusive vulnerability management partner. Under the terms of the commercial agreement, we incur partner referral fees as customers transition from McAfee Vulnerability Manager to Nexpose. On February 6, 2017, Michael Berry, a member of our board of directors, became the chief financial officer of Intel Security (McAfee). For the years ended December 31, 2018, 2017 and 2016, we made payments for partner referral fees of $1.6 million, $1.9 million and $1.7 million to Intel Security.

Supplementary Data

The following table sets forth our unaudited quarterly consolidated statements of operations data for each of the eight quarters. We have prepared the quarterly financial data on the same basis as the audited consolidated financial statements included in this Annual Report on Form 10-K. In our opinion, the quarterly financial data reflects all adjustments, consisting only of normal recurring adjustment that we consider necessary for a fair presentation of this data. This quarterly financial data should be read in conjunction with our consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results to be expected in the future.

	Three Months Ended							
	December 31, 2018	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017	June 30, 2017	March 31, 2017
	(in thousands) (unaudited)							
Consolidated Statements of Operations Data:								
Revenue:								
Products	$ 50,420	$ 43,829	$ 39,043	$ 35,279	$ 34,012	$ 29,626	$ 27,168	$ 25,942
Maintenance and support	10,246	10,614	10,610	10,753	12,474	11,654	11,338	10,802
Professional services	8,104	7,922	8,788	8,483	11,245	9,241	8,937	8,501
Total revenue	68,770	62,365	58,441	54,515	57,731	50,521	47,443	45,245
Cost of revenue:								
Products	11,430	10,294	9,650	8,436	8,428	6,888	5,557	4,710
Maintenance and support	1,921	1,901	2,007	1,849	2,024	1,739	1,850	1,878
Professional services	5,935	5,615	5,736	6,309	6,748	5,740	5,672	5,676
Total cost of revenue	19,286	17,810	17,393	16,594	17,200	14,367	13,079	12,264
Operating expenses:								
Research and development	17,828	17,111	16,082	16,722	14,102	13,570	11,873	11,393
Sales and marketing	32,531	30,570	31,157	29,052	31,427	28,224	27,132	24,810
General and administrative	9,937	8,175	8,149	8,732	8,387	7,402	7,256	7,248
Total operating expense	60,296	55,856	55,388	54,506	53,916	49,196	46,261	43,451
Loss from operations	(10,812)	(11,301)	(14,340)	(16,585)	(13,385)	(13,042)	(11,897)	(10,470)
Interest income	1,709	813	464	243	196	209	240	217
Interest expense	(3,253)	(1,679)	—	(2)	(6)	(11)	(22)	(48)
Other income (expense), net	(269)	181	(326)	78	(36)	235	229	(115)
Loss before income taxes	(12,625)	(11,986)	(14,202)	(16,266)	(13,231)	(12,609)	(11,450)	(10,416)
Provision for (benefit from) income taxes	395	(155)	131	95	(227)	(2,325)	187	129
Net loss	$ (13,020)	$ (11,831)	$ (14,333)	$ (16,361)	$ (13,004)	$ (10,284)	$ (11,637)	$ (10,545)

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2018. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act of 1934, as amended, means controls and other procedures of a company 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 the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2018, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2018 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control – Integrated Framework (2013). Based on this assessment, management concluded that as of December 31, 2018, our internal control over financial reporting was effective.

This Annual Report on Form 10-K includes an attestation report of our independent registered public accounting firm regarding internal control over financial reporting, which appears in Part II, Item 8 of this Annual Report on Form 10-K.

Inherent Limitations of Internal Controls

Our management, including our chief executive officer and chief financial officer, does not expect that our disclosure controls and procedures or our internal controls will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Changes in Internal Control over Financial Reporting

Except for the implementation of certain internal controls related to the adoption of ASU 2014-09, *Revenue from Contracts with Customers* (Topic 606), there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Annual Report on Form 10-K that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information.

On February 24, 2019, based on the recommendation of the nominating and corporate governance committee, our board of directors appointed Corey Thomas, our Chief Executive Officer, as chairman of our board and Benjamin Nye as our lead independent director.

In addition, in connection with these appointments, our board of directors promoted our Chief Operating Officer, Andrew Burton, age 47, to the position of Chief Operating Officer and President. The other terms of Mr. Burton's employment with the Company remain unchanged from his existing offer letter agreement, which was filed as Exhibit 10.1 to our Current Report on Form 8-K, filed with the SEC on October 4, 2016, as amended by that certain Severance and Equity Award Vesting Acceleration Letter, which was filed as Exhibit 10.3 to our Quarterly Report on Form 10-Q, filed with the SEC on May 10, 2017. A description of Mr. Burton's background and experience has been previously reported in, and is incorporated by reference from, our proxy statement filed with the SEC on April 30, 2018.

There is no arrangement or understanding between Mr. Burton and any other person pursuant to which he was selected for his new role. Mr. Burton has no family relationships with any of the Company's directors or executive officers, and he has no direct or indirect material interest in any transaction required to be disclosed pursuant to Item 404(a) of Regulation S-K promulgated under the Securities Exchange Act of 1934, as amended.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item is incorporated by reference to our Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2018.

As part of our system of corporate governance, our board of directors has adopted a code of business conduct and ethics. The code applies to all of our employees, officers (including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions), agents and representatives, including our independent directors and consultants, who are not employees of ours, with regard to their Company-related activities. Our code of business conduct and ethics is available on our website at www.rapid7.com. We intend to post on this section of our website any amendment to our code of business conduct and ethics, as well as any waivers of our code of business conduct and ethics, that are required to be disclosed by the rules of the SEC or the Nasdaq Stock Market.

Item 11. Executive Compensation.

The information required by this item is incorporated by reference to our Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2018.

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

The information required by this item is incorporated by reference to our Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2018.

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

The information required by this item is incorporated by reference to our Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2018.

Item 14. Principal Accounting Fees and Services.

The information required by this item is incorporated by reference to our Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2018.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a)(1) Financial Statements

See Index to Consolidated Financial Statements on page 62 of this Annual Report on Form 10-K, which is incorporated into this item by reference.

(a)(2) Financial Statement Schedules

All financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

(b) Exhibits

The following list of exhibits includes exhibits submitted with this Annual Report on Form 10-K as filed with the SEC and others incorporated by reference to other filings.

Exhibit Number	Description
3.1(1)	Amended and Restated Certificate of Incorporation of Rapid7, Inc.
3.2(2)	Amended and Restated Bylaws of Rapid7, Inc.
4.1(3)	Form of common stock certificate of Rapid7, Inc.
4.2(4)	Amended and Restated Investors' Rights Agreement by and among Rapid7, Inc. and certain of its stockholders, dated December 9, 2014.
4.3(5)	Amendment No. 1 to Investors' Rights Agreement, dated October 13, 2015.
4.4(6)	Indenture, dated as of August 13, 2018, between Rapid7 Inc. and U.S. Bank National Association, as trustee.
4.5	Form of 1.25% Convertible Senior Notes due 2023 (included in Exhibit 4.4).
10.1(7)	Form of Confirmation for Capped Call Transactions.
10.1+(8)	2011 Stock Option and Grant Plan and Forms of Stock Option Agreement, Stock Option Exercise Notice and Restricted Stock Agreement thereunder.
10.2+(9)	Rapid7, Inc. 2015 Equity Incentive Plan, as amended.
10.3+(10)	Forms of Stock Option Agreement, Notice of Exercise, Stock Option Grant Notice and Restricted Stock Unit Agreement under the Rapid7, Inc. 2015 Equity Incentive Plan, as amended.
10.4+(11)	Rapid7, Inc. 2015 Employee Stock Purchase Plan.
10.5+(12)	Form of Indemnification Agreement by and between Rapid7, Inc. and each of its directors and executive officers.
10.6(13)	Office Lease Agreement, dated as of November 11, 2013, by and between Rapid7, Inc. and MA-100 Summer Street Owner, L.L.C.
10.7(14)	First Amendment to Office Lease Agreement, dated as of April 10, 2015 by and between Rapid7, Inc. and MA-100 Summer Street Owner, L.L.C.
10.8(15)	Second Amendment to Office Lease Agreement, dated as of August 17, 2015, by and between Rapid7, Inc. and MA-100 Summer Street Owner, L.L.C.
10.9(16)	Third Amendment to Office Lease Agreement, dated as of March 23, 2016, by and between Rapid7, Inc. and MA-100 Summer Street Owner, L.L.C.
10.10(17)	Fourth Amendment to Office Lease Agreement, dated as of February 14, 2017, by and between Rapid7, Inc. and MA-100 Summer Street Owner, L.L.C.
10.11(18)	Lease dated November 16, 2017 between Podium Developer LLC and Rapid7, Inc.
10.12+(19)	Rapid7, Inc. Executive Incentive Bonus Plan.
10.13+(20)	Employment Agreement, dated as of January 3, 2013, by and between Rapid7, Inc. and Corey Thomas.
10.14+(21)	Amendment to Employment Agreement, dated as of April 4, 2016, by and between Rapid7, Inc. and Corey Thomas.
10.15+(22)	Second Amendment to Employment Agreement, dated as of March 24, 2017, by and between Rapid7, Inc. and Corey Thomas.
10.16+(23)	Employment Agreement, dated as of November 28, 2016, by and between Rapid7, Inc. and Jeffrey Kalowski.
10.17+(24)	Offer Letter Agreement, dated as of October 3, 2016, by and between Rapid7, Inc. and Andrew Burton.
10.18+(25)	Severance and Equity Award Vesting Acceleration Letter, dated as of March 28, 2017, by and between Rapid7, Inc. and Andrew Burton.
10.19+(26)	Form of Severance and Equity Award Vesting Acceleration Letter.

Exhibit Number	Description
21.1*	List of subsidiaries of Rapid7, Inc.
23.1*	Consent of KPMG, LLP.
24.1	Power of Attorney (incorporated by reference to the signature pages of this Annual Report on Form 10-K).
31.1*	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification of Principal Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2**	Certification of Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.

(1) Previously filed as Exhibit 3.1 to the Registrant’s Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on July 22, 2015, and incorporated herein by reference.
(2) Previously filed as Exhibit 3.2 to the Registrant’s Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on July 22, 2015, and incorporated herein by reference.
(3) Previously filed as Exhibit 4.1 to the Registrant’s Registration Statement on Form S-1/A (File No. 333-204874), filed with the Securities and Exchange Commission on July 6, 2015, and incorporated herein by reference.
(4) Previously filed as Exhibit 4.2 to the Registrant’s Registration Statement on Form S-1 (File No. 333-204874), filed with the Securities and Exchange Commission on June 11, 2015, and incorporated herein by reference.
(5) Previously filed as Exhibit 4.1 to the Registrant’s Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on October 13, 2015, and incorporated herein by reference.
(6) Previously filed as Exhibit 4.1 to the Registrant's Current Report on form 8-K (file No. 001-37496), filed with the Securities and Exchange Commission on August 13, 2018, and incorporated herein by reference.
(7) Previously filed as Exhibit 4.1 to the Registrant's Current Report on form 8-K (file No. 001-37496), filed with the Securities and Exchange Commission on August 13, 2018, and incorporated herein by reference.
(8) Previously filed as Exhibit 10.2 to the Registrant’s Registration Statement on Form S-1 (File No. 333-204874), filed with the Securities and Exchange Commission on June 11, 2015, and incorporated herein by reference.
(9) Previously filed as Exhibit 10.1 to the Registrant’s Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on October 13, 2015, and incorporated herein by reference.
(10) Previously filed as Exhibit 10.3 to the Registrant’s Registration Statement on Form S-1/A (File No. 333-204874), filed with the Securities and Exchange Commission on July 6, 2015, and incorporated herein by reference.
(11) Previously filed as Exhibit 10.4 to the Registrant’s Registration Statement on Form S-1/A (File No. 333-204874), filed with the Securities and Exchange Commission on July 6, 2015, and incorporated herein by reference.
(12) Previously filed as Exhibit 10.5 to the Registrant’s Annual Report on Form 10-K (File No. 001-37496), filed with the Securities and Exchange Commission on March 10, 2016, and incorporated herein by reference.
(13) Previously filed as Exhibit 10.1 to the Registrant’s Registration Statement on Form S-1 (File No. 333-204874), filed with the Securities and Exchange Commission on June 11, 2015, and incorporated herein by reference.
(14) Previously filed as Exhibit 10.1 to the Registrant’s Registration Statement on Form S-1 (File No. 333-204874), filed with the Securities and Exchange Commission on June 11, 2015, and incorporated herein by reference.
(15) Previously filed as Exhibit 10.3 to the Registrant’s Quarterly Report on Form 10-Q (File No. 001-37496), filed with the Securities and Exchange Commission on August 19, 2015.
(16) Previously filed as Exhibit 10.1 to the Registrant’s Quarterly Report on Form 10-Q (File No. 001-37496), filed with the Securities and Exchange Commission on May 12, 2016, and incorporated herein by reference.
(17) Previously filed as Exhibit 10.23 to the Registrant’s Annual Report on Form 10-K (File No. 001-37496), filed with the Securities and Exchange Commission on March 9, 2017, and incorporated herein by reference.

(18) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on November 16, 2017, and incorporated herein by reference.
(19) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on February 2, 2017, and incorporated herein by reference.
(20) Previously filed as Exhibit 10.9 to the Registrant's Registration Statement on Form S-1(File No. 333-204874), filed with the Securities and Exchange Commission on June 11, 2015, and incorporated herein by reference.
(21) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on April 5, 2016, and incorporated herein by reference.
(22) Previously filed as Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37496), filed with the Securities and Exchange Commission on May 10, 2017, and incorporated herein by reference.
(23) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on November 28, 2016, and incorporated herein by reference.
(24) Previously filed as Exhibit 10.1 to the Registrant's Current Report on Form 8-K (File No. 001-37496), filed with the Securities and Exchange Commission on October 4, 2016, and incorporated herein by reference.
(25) Previously filed as Exhibit 10.3 to the Registrant's Quarterly Report on Form 10-Q (File No. 001-37496), filed with the Securities and Exchange Commission on May 10, 2017, and incorporated herein by reference.
(26) Previously filed as Exhibit 10.19 to the Registrant's Annual Report on Form 10-K (File No. 001-37496), filed with the Securities and Exchange Commission on March 8, 2018, and incorporated herein by reference.

*   Filed herewith.

**   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.

Item 16. Form 10-K Summary.

Not applicable.

SIGNATURES

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

RAPID7, INC.

Date: February 28, 2019	By:	/s/ Corey E. Thomas
		Name: Corey E. Thomas
		Title: President and Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Corey E. Thomas and Jeff Kalowski, and each of them, as his true and lawful attorneys-in-fact and agents, each with the full power of substitution, for him and in his name, place or stead, in any and all capacities, to sign any and all amendments to this report, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or their, his 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, as amended, this report has been signed below by the following persons on behalf of the registrant in the capacities and on the dates indicated.

Name	Title	Date
/s/ Corey E. Thomas **Corey E. Thomas**	President, Chief Executive Officer and Director (*Principal Executive Officer*)	February 28, 2019
/s/ Jeff Kalowski **Jeff Kalowski**	Chief Financial Officer (*Principal Financial Officer and Principal Accounting Officer*)	February 28, 2019
/s/ Michael Berry **Michael Berry**	Director	February 28, 2019
/s/ Marc Brown **Mark Brown**	Director	February 28, 2019
/s/ Judy Bruner **Judy Bruner**	Director	February 28, 2019
/s/ Benjamin Holzman **Benjamin Holzman**	Director	February 28, 2019
/s/ Timothy McAdam **Timothy McAdam**	Director	February 28, 2019
/s/ J. Benjamin Nye **J. Benjamin Nye**	Director	February 28, 2019
/s/ Thomas Schodorf **Thomas Schodorf**	Director	February 28, 2019

Exhibit 21.1

List of Subsidiaries of Rapid7, Inc.

Company Name	Jurisdiction
Rapid7 Australia Pty Ltd.	Australia
Rapid7 Canada, Inc.	Canada
Rapid7 Germany GmbH	Germany
Rapid7 International Group Limited	United Kingdom
Rapid7 International Holdings Limited	United Kingdom
Rapid7 International Limited	United Kingdom
Rapid7 Ireland Limited	Ireland
Rapid7 Japan KK	Japan
Rapid7 LLC	Delaware
Rapid7 Netherlands B.V.	Netherlands
Rapid7 Singapore Pte. Ltd.	Singapore
tCell.IO, Inc.	Delaware

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
Rapid7, Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-205716, 333-207395, 333-210082, 333-216566 and 333-223525) on Form S-8 and the registration statement (No. 333-218189) on Form S-3 of Rapid7, Inc. (the Company) of our report dated February 28, 2019, with respect to the consolidated balance sheets of Rapid7, Inc. as of December 31, 2018 and 2017, the related consolidated statements of operations, comprehensive loss, changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes, and the effectiveness of internal control over financial reporting as of December 31, 2018, which report appears in the December 31, 2018 annual report on Form 10-K of Rapid7, Inc.

Our report refers to the Company's adoption of Accounting Standards Update 2014-09, *Revenue from Contracts with Customers (Topic 606)* in 2018.

/s/ KPMG LLP

Boston, Massachusetts
February 28, 2019

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Corey E. Thomas, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rapid7, 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   (c) 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

   (d) 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, 2019	By:	/s/ Corey E. Thomas
		Name: Corey E. Thomas
		Title: President and Chief Executive Officer (*Principal Executive Officer*)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Jeff Kalowski, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rapid7, 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)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) 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) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, 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;

   (c) 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

   (d) 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, 2019	By:	/s/ Jeff Kalowski
		Name: Jeff Kalowski
		Title: Chief Financial Officer (*Principal Financial Officer and Principal Accounting Officer*)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Corey E. Thomas, Chief Executive Officer of Rapid7, Inc., do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge, the Annual Report on Form 10-K of Rapid7, Inc. for the year ended December 31, 2018 (the "Report"):

(1) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Rapid7, Inc.

Date: February 28, 2019	By:	/s/ Corey E. Thomas
		Name: Corey E. Thomas
		Title: President and Chief Executive Officer (*Principal Executive Officer*)

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Jeff Kalowski, Chief Financial Officer of Rapid7, Inc., do hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to the best of my knowledge, the Annual Report on Form 10-K of Rapid7, Inc. for the year ended December 31, 2018 (the “Report”):

(1) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of Rapid7, Inc.

Date: February 28, 2019	By:	/s/ Jeff Kalowski
		Name: Jeff Kalowski
		Title: Chief Financial Officer (*Principal Financial Officer and Principal Accounting Officer*)