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

Form 10-K

(Mark One)

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

For the fiscal year ended June 30, 2019

OR

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

For the transition period from to .

Commission file number 000-25711

Extreme Networks, Inc.
(Exact name of Registrant as specified in its charter)

Delaware	**77-0430270**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
6480 Via del Oro San Jose, California	**95119**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (408) 579-2800

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.001 per share	EXTR	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 ☒

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

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

Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§229.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-Accelerated Filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

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

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

The aggregate market value of voting common equity held by non-affiliates of the Registrant was approximately $0.5 billion as of December 31, 2018 the last business day of the Registrant's most recently completed second fiscal quarter, based upon the per share closing price of the Registrant's common stock as reported on The Nasdaq Global Market reported on such date. For purposes of this disclosure, shares of common stock held or controlled by executive officers and directors of the registrant and by persons who hold more than 5% of the outstanding shares of common stock have been treated as shares held by affiliates. This calculation does not reflect a determination that certain persons are affiliates of the Registrant for any other purpose.

Indicate the number of shares outstanding of each of the registrant's classes of stock, as of the latest practicable date.

120,775,356 shares of the Registrant's Common stock, $.001 par value, were outstanding as of August 23, 2019.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for the year ended June 30, 2019 Annual Meeting of Stockholders to be filed with the 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 herein by reference in Part III of this Annual Report on Form 10-K.

EXTREME NETWORKS, INC.

FORM 10-K

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FORWARD LOOKING STATEMENTS

Except for historical information contained herein, certain matters included in this annual report on Form 10-K are, or may be deemed to be, forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934 and Section 27A of the Securities Act of 1933. The words "will," "may," "designed to," "believe," "should," "anticipate," "plan," "expect," "intend," "estimate" and similar expressions identify forward-looking statements, which speak only as of the date of this annual report. These forward-looking statements are contained principally under Item 1, "Business," and under Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," but may also be in other sections of this annual report on Form 10-K. Because these forward-looking statements are subject to risks and uncertainties, actual results could differ materially from the expectations expressed in the forward-looking statements. Important factors that could cause actual results to differ materially from the expectations reflected in the forward-looking statements include those described in Item 1A, "Risk Factors" and Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations." In addition, new risks emerge from time to time and it is not possible for management to predict all such risk factors or to assess the impact of such risk factors on our business. Given these risks and uncertainties, you should not place undue reliance on these forward-looking statements. We undertake no obligation to update or revise these forward-looking statements to reflect subsequent events or circumstances.

PART I

Item1. Business

Overview

Extreme Networks, Inc., together with its subsidiaries (collectively referred to as "Extreme" and as "we", "us" and "our") is a leader in providing software-driven networking solutions for enterprise, data center, and service provider customers. Providing a combined end-to-end solution from the enterprise edge to the cloud, Extreme designs, develops, and manufactures wired and wireless network infrastructure equipment and develops the software for network management, policy, analytics, security, and access controls. We recognize that every customer environment is unique with its own requirements, which may be industry-specific or site driven. We address these distinctions with our Extreme Elements architecture. Elements gives customers and partners the power to mix and match a broad array of software, hardware, and services (including third-party applications) to create a custom network that can be managed and automated from end-to-end, from the enterprise edge to the cloud. With this strategic asset in place, organizations have the foundation needed to drive both digital transformation and the outcomes impacting each one of us.

As we increase the breadth of our portfolio and scale of our organization, we continue to value the attributes of a small company by remaining nimble and responsive to ensure customer success. We are relentless in our commitment to our 30,000 customers around the world, including over half of the Fortune 50, building networks that drive competitive advantage, accelerate innovation, and improve the human experience. This is Customer-Driven Networking™.

We continued execution toward our strategic objectives with the acquisition in 2018 of the fabric-based secure networking solutions and network security solutions business (the "Campus Fabric Business") from Avaya Inc. ("Avaya") and the data center business (the "Data Center Business") of Brocade Communication Systems, Inc. ("Brocade"). In August 2019, we acquired Aerohive Networks, Inc ("Aerohive") to enhance our cloud offering by adding a 3rd generation cloud with Machine Learning/Artificial Intelligence insights and analytics that we intend to expand to all the Extreme Elements™.

Enterprise network administrators from the data center to the access layer need to respond to the rapid digital transformational trends of cloud, mobility, big data, social business, and the ever-present need for network security. Accelerators such as Internet of Things ("IoT"), artificial intelligence ("AI"), bring your own device ("BYOD"), machine learning ("ML"), cognitive computing, and robotics add complexity to challenge the capabilities of traditional networks. Technology advances have a profound effect across the entire enterprise network by placing unprecedented demands on network administrators to enhance management capabilities, scalability, programmability, agility, security, and analytics of the enterprise networks they manage.

Improving the network experience for enterprises that increasingly require greater simplification at the edge or the access layer of the network to ensure business success and provide a secure, unified, wired / wireless infrastructure augmented and managed through a single plane of glass remains a key focus for Extreme. We enhanced our Smart OmniEdge product portfolio in fiscal year 2019 with the launches of our suite of Wi-Fi 6 access points, ExtremeAI software solutions, and Defender for IoT to simplify IoT security. Enterprises have also migrated increasing numbers of applications and services to either private clouds or public clouds offered by third parties and are adopting new IT delivery models and applications that require fundamental network alterations and enhancements spanning from device access point to the network core. In either case, the network infrastructure must adapt to this new dynamic environment. Intelligence and automation are key if enterprises are to derive maximum benefit from their cloud deployments.

A trend affecting the enterprise network equipment market is the continued adoption of the cloud-managed enterprise WLAN in the enterprise market. Hybrid cloud is a cloud computing environment which uses a mix of on-premise private cloud and third-party public cloud services with orchestration between the two platforms. Extreme's cloud solution is the only offering in the market that seamlessly integrates the Cloud with on premises infrastructures, and the acquisition of Aerohive furthers our commitment to broadening our Cloud solution and accelerating adoption of hybrid cloud solutions for enterprise customers.

To facilitate the readers understanding, the following is a list of common terms in our industry used in the discussion of our business:

- **Access:** Network access is the closest point of entry to a network whether it is a wireless access point, Ethernet connection, or Wi-Fi device.
- **Access Point:** A wireless access point, or more generally just access point ("AP"), is a networking hardware device that allows a Wi-Fi device to connect to a wired network.
- **Aggregation:** In computer networking, the term aggregation applies to various methods of combining (aggregating) multiple network connections in parallel in order to increase throughput beyond what a single connection could sustain, and to provide redundancy in case one of the links should fail.
- **Artificial Intelligence**: Artificial Intelligence ("AI") is a set of technologies that enable computers to simulate the cognitive knowledge-processing capabilities of humans. Because it is artificial, the objective of most work in AI is to *augment* the capabilities of humans, not to replace them. Just as computers in general are applied to tedious and repetitive tasks, AI-based solutions can deal with often large ("Big Data") volumes of digitally-encoded information dispassionately, unemotionally, rapidly, and, depending upon the parameters of a specific application and implementation, accurately. In network administration, AI can be applied to dealing with the "more-variables-than-equations nature" of radio frequency settings in even very- large-scale Wi-Fi installations. The goal is to achieve optimal network-wide performance more accurately and at lower cost than would be possible with humans alone.
- **Bluetooth Low Energy:** A variant of Bluetooth that creates a local area network technology that enables easy, low power connectivity to smartphones and other devices.
- **Campus (Network)**: A campus network, or campus area network, or corporate area network ("CAN") is a computer network made up of an interconnection of local area networks ("LANs") within a limited geographical area, such as a college campus, company campus, hospital, hotel, convention center or sports venue.
- **Cloud Management:** A Cloud management platform is a suite of integrated software and visibility tools that an enterprise can use to monitor and control on-premises networking equipment, such as Access Points, Switches, and Routers.
- **CloudStack:** CloudStack is an open source cloud computing software for creating, managing, and deploying infrastructure cloud services. It uses existing hypervisors such as KVM, VMware ESXi and XenServer/XCP for virtualization.
- **Core:** A core network, or network core, is the central part of a telecommunications network that provides various services to customers who are connected by the access network.
- **Data Center:** A data center is a facility used to house computer systems and associated components, such as telecommunications and storage systems. It generally includes redundant or backup power supplies, redundant data communications connections, environmental controls (e.g. air conditioning, fire suppression) and various security devices.
- **Data Center Fabric technologies**: Also known as networking switch fabric, is the basic topology of how a network is laid out and connected to switch traffic on a data or circuit-switched network.
- **Edge**: An edge device is a device which provides an entry point into enterprise or service provider core networks. Examples include routers, routing switches, integrated access devices ("IADs"), multiplexers, and a variety of metropolitan area network ("MAN") and wide area network ("WAN") access devices.
- **Fabric Attach**: Avaya's Fabric Attach ("FA") fundamentally introduces autonomic/automatic attachment to network services for end users IoT devices to a network infrastructure. Fabric Attach and Fabric Connect are key building blocks of the Avaya SDN Fx™ architecture.
- **Fabric Connect**: Fabric Connect is an extended implementation of the IEEE/IEFT standards for Shortest Path Bridging ("SPB"). It offers a full-service network virtualization technology that combines the best of Ethernet and the best of IP.
- **Flipped Classroom:** Flipped classroom is an instructional strategy and a type of blended learning that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom.

- **Internet of Things (IoT):** the extension of IP networking into physical devices and everyday objects, such as temperature sensors and appliances. IoT devices are technically a superset of all connected devices, but the term is generally used to refer to devices not directly associated to a user (i.e., not often used for Laptops or Smart Phones).
- **Internet Protocol:** Internet Protocol ("IP") is the principal set (or communications protocol) of digital message formats and rules for exchanging messages between computers across a single network or a series of interconnected networks, using the Internet Protocol Suite (often referred to as TCP/IP)
- **Layer 3 Data Center Interconnect;** A Data Center Interconnect ("DCI") refers to the networking of two or more different data centers to achieve business or IT objectives. This interconnectivity between separate data centers enables them to work together, share resources and/or pass workloads between one another. A Layer 3 DCI refers to interconnection made through layer 3 of the commonly-referenced multilayered communication model, Open Systems Interconnection ("OSI").
- **Machine Learning**: Machine Learning ("ML") is a set of technologies, and itself a branch of AI, that enables computers to simulate human learning, with learning defined here as the ability to change behavior and/or essential capabilities (again, simulated as a digital process on a computer) in response to new information suitably encoded for consumption by the algorithms implementing ML. In other words, ML enables AI-based processes to "learn" from past behaviors and consequently to improve future results, in much the same way as experiential education benefits humans.
- **Network Automation**: Network Automation ("NA") is a methodology in which software automatically configures, provisions, manages and tests network devices. It is used by enterprises and service providers to improve efficiency and reduce human error and operating expenses.
- **OpenFlow:** OpenFlow ("OF") is considered one of the first software-defined networking ("SDN") standards. It originally defined the communication protocol in SDN environments that enables the SDN Controller to directly interact with the forwarding plane of network devices such as switches and routers, both physical and virtual (hypervisor-based), so it can better adapt to changing business requirements. (Source: SDx Central)
- **OpenStack:** OpenStack software controls large pools of compute, storage, and networking resources throughout a datacenter, managed through a dashboard or via the OpenStack Application Programming Interface ("API"). OpenStack works with popular enterprise and open source technologies making it ideal for heterogeneous infrastructure. (Source: OpenStack.org)
- **Private Pre-Shared Key**: Private Pre-Shared Keys are unique pre-shared keys created for individuals or groups of users on the same SSID, which mimics the security and control of Enterprise 802.1X authentication without requiring authentication servers or certificates.
- **RESTful APIs:** A RESTful API is an application program interface (API) that uses HTTP requests to GET, PUT, POST and DELETE data
- **Single Pane of Glass:** Single pane of glass is a term used to describe a management display console that integrates all parts of a computer infrastructure.
- **Stackstorm**: A platform for integration and automation across services and tools. It ties existing infrastructure and application environment to automate that environment. It has a particular focus on taking actions in response to events.
- **Wi-Fi**: Wireless Access points using Radio Frequency and protocols to allow computers, smartphones, or other devices to connect to the Internet or communicate with one another wirelessly within an area.

Industry Background

Enterprises are adopting new IT delivery models and applications that require fundamental network alterations and enhancements spanning from device access point to the network core. AI and ML technologies have the potential to vastly improve the network experience. When AI and ML are used in conjunction with an NA technology, administrators can make significant advances in productivity, availability, accessibility, manageability, security and speed of their network infrastructure. These emerging technologies are driving administrators to a mindset of change toward agile processes that allow a versatile workforce to improve the rate of innovation of the enterprise safely, securely and with confidence.

AI, ML and NA have increased the relevance and importance of the network in the enterprise. Traditional network offerings are not well-suited to fulfill enterprise expectations for rapid delivery of new services, more flexible business models, real-time response, and massive scalability.

We estimate the total addressable market for our solutions consisting of Wireless Local Area Networks (WLAN), Data Center networking, Ethernet switching, and campus LAN products is approximately $33 billion and growing at approximately five percent per year over the next three years. We believe Extreme's products, solutions, and services along with our geographic focus allow us to address $21 billion of this market, also growing at approximately five percent per year over the next three years.

The networking industry appears to be invigorated by this wave of technological change:

- **Ethernet (wired and wireless) has solidified its role in both public and private networks through its scalability, adaptability, and cost-effectiveness.** At the same time, the enterprises and service providers expect the technology to follow a price-performance curve that mandates continued innovation by Ethernet vendors, and the introduction of 5G cellular networking provides another medium for wireless connectivity that requires significant upgrades to existing Ethernet infrastructure.
- **The mobile workforce continues to proliferate.** Employees expect high-quality and secure access to corporate resources in a BYOD world across a diversity of endpoints such as laptops, tablets, smart phones and wearables, whether they are within the corporate firewall or on-the-go. With Extreme software, IT departments focus their investment decisions on this mobile workforce, taking a unified view of wireless access, from the edge to the cloud. Extreme offers end-to-end solutions that permit IT managers to meet employee expectations and to maximize IT return on investment.
- **Verticals such as retail, finance, healthcare, education, manufacturing, government and hospitality (which includes sports and entertainment venues) are connecting with their customers and guests beyond the network.** These enterprises are investing in guest and location technologies that connect with their customers via their mobile devices over their WLAN. This allows them to obtain rich analytics for contextual marketing, which in turn, enables them to deliver a personalized brand experience. ExtremeGuest and ExtremeLocation have been built on cloud-based technology for simple implementation and fast release to market to better provide necessary insights into guest demographics and location-based analytics.
- **The Internet of Things.** The Internet of Things is having dramatic effects on network infrastructure in healthcare, education, manufacturing, government and retail as more “smart” devices are entering the networks. These devices pose opportunities as well as threats to the network. Extreme’s Defender for IoT delivers security for end points which have limited or even no embedded security capabilities. It is especially targeted to aging wired devices, that need to roam around a room, a building, or even a campus, and complements a customer’s existing security infrastructure by adding in-line defense directly at the IoT device itself.
- **Growing usage of the cloud.** Enterprises have migrated increasing numbers of applications and services to either private clouds or public clouds offered by third parties. In either case, the network infrastructure must adapt to this new dynamic environment. Intelligence and automation are key if enterprises are to derive maximum benefit from their cloud deployments. Ethernet speeds, scaling from 10 Gigabits per second ("G") to 400G, provide the infrastructure for both private and public clouds. In addition, there is growing interest in SDN approaches that may include technologies such as OpenFlow, OpenStack, and CloudStack for increased network agility.
- **Vendor consolidation is expected to continue.** Consolidation of vendors within the enterprise network equipment market and between adjacent markets (storage, security, wireless & voice software and applications) continues to gain momentum. We identified this trend in 2013 with our acquisition of Enterasys. Further, we believe customers are demanding more end-to-end, integrated networking solutions. To address this demand, we acquired the WLAN Business of Zebra in October 2016, the Campus Fabric Business from Avaya in July 2017, and the Data Center Business from Brocade in October 2017, and acquired the entire Cloud Networking portfolio from Aerohive Networks in August 2019.

Our strategy, product portfolio and research and development are closely aligned with what we have identified as the following trends in our industry:

- **The software segment of the worldwide enterprise network equipment market has continued to evolve and demands for improvements in Network Management will continue.**
  - *We have been shipping ExtremeManagement Center since fiscal year 2017. This innovative software helps IT network administrators to navigate the unprecedented demands caused by the surge of IoT devices and technology. The addition of Aerohive brings us a cloud equivalent option to service all of our customer verticals and requirements.*
- **Enterprise adoption of the cloud and open-source options are disrupting traditional license and maintenance business models.**
  - *We announced cloud offerings in April 2016 and continue to enhance our portfolio for providing cloud infrastructure management and visibility with Extreme Workflow Composer and our Network Packet Brokers, as well as with our acquisition of Aerohive in August 2019. Extreme began participation in the OpenSwitch program in May 2016, and recently announced our intent to move to Stackstorm, an open source project acquired with Brocade in 2017, to the Linux Foundation.*

- **Enterprise adoption of new financing solutions allows for increased flexibility, limited investment and zero long-term commitments. These offerings are changing the traditional CAPEX model to (OPEX) models using financing purchases over time are disrupting traditional sell-in business models.**
  - *We announced Extreme Capital Solutions in April 2018. The offering includes subscription, capital leasing and usage business models that provide flexibility for partners and customers.*
- **Growth of wireless devices continues to outpace hardwire switch growth.**
  - *We began shipping our 802.11ax/Wi-Fi 6 access points in the fiscal year 2019, which are designed to deliver secure, intelligent, and scalable Wi-Fi connectivity in the most dense, crowded environments, such as stadiums, and in any weather condition – giving every customer access to high-efficiency Wi-Fi just like in NFL stadiums. With our acquisition of Aerohive, we expect to have the broadest portfolio of Wi-Fi 6 access points in the industry.*

The Extreme Strategy

We are focused on delivering end-to-end networking and software solutions for today's enterprise environments. From wireless and wired access technologies, through the campus, core and into the datacenter, Extreme is developing solutions to deliver outstanding business outcomes for our customers. Leveraging a unified management approach, both on premises and in the cloud, we continue to accelerate adoption and delivery of new technologies in support of emerging trends in enterprise networking. We continue to execute on our growth objectives by maximizing customer, partner, and shareholder value.

In fiscal 2017, we completed the acquisition of the WLAN Business, in fiscal 2018, we completed the acquisitions of the Campus Fabric Business and the Data Center Business. In August 2019, we acquired the entire Cloud Networking portfolio from Aerohive. These acquisitions support our growth strategy to lead the enterprise network equipment market with end-to-end software-driven cloud and on-premises solutions for enterprise customers from the data center to the wireless edge. After the closing of the acquisitions of the Campus Fabric Business and Data Center Business, Extreme immediately became a networking industry leader with more than 30,000 customers, and the addition of Aerohive will bring us another 20,000+ customers and solidify our position as the #3 networking vendor in the United States and the #2 cloud networking provider globally. As a network switching leader in enterprise, datacenter and cloud, we combine and extend our world-class products and technologies to provide customers with some of the most advanced, high performance and open solutions in the market as well as a superb overall customer experience. The combination of all the Extreme Elements™ is significant in that it brings together distinct strengths addressing the key areas of the network, from unified wired and wireless edge, to the enterprise core, to the data center and to the cloud to offer a complete, unified portfolio of software-driven network access solutions.

Provider of high quality, software-driven, secure networking solutions and the industry's #1 customer support organization

- Only multi-vendor network management with "single pane of glass".
- Delivering new releases of next generation portfolio organically and through acquisition.

Key elements of our strategy include:

- **Focus on being nimble and responsive to customers and partners, we call this "Customer-Driven Networking™."** We work with our customers to deliver software-driven solutions from the enterprise edge to the cloud that are agile, adaptive, and secure to enable digital transformation for our customers. We help our customers move beyond just "keeping the lights on", so they can think strategically and innovate. By allowing customers to access critical decision-making intelligence, we are able to reduce their daily tactical work, so they can spend their time on learning and understanding how to innovate their business with IT.
- **Enable a common fabric to simplify and automate the network.** Fabric technologies virtualize the network infrastructure (decoupling network services from physical connectivity) which enables network services to be turned up faster, with lower likelihood of error. They make the underlying network much easier to design, implement, manage and troubleshoot.
- **Software-driven networking services-led solutions.** Our software-driven solutions provide visibility, control and strategic intelligence from the Edge to the Cloud, across networks and applications. Our solutions include wired switching, wireless switching, wireless access points, WLAN controllers, routers, and an extensive portfolio of software applications that deliver AI-enhanced access control, network and application analytics, as well as network management. All can be managed, assessed and controlled from one single pane of glass on premises or from the cloud.
- **Offer customers choice – cloud or on premises.** We leverage cloud where it makes sense for our customers and provide on premises solutions where customers need it. Our hybrid approach gives our customers options to adapt the technology to their business. At the same time, all of our solutions have visibility, control and strategic information built in, all tightly integrated with a single view across all of the installed products. Our customers can understand what's going on across the network and applications in real time – who, when, and what is connected to the network, which is critical for BYOD and IoT.

- **Enable IoT without additional IT resources.** In a recent IoT IT infrastructure survey, enterprise IT decision makers across industry verticals indicated their preference to opt for their existing wireless connectivity infrastructure to support IoT devices. These preferences will place unprecedented demand on network administrators to enhance management capabilities, scalability and programmability of the enterprise networks they manage without additional IT resources.
- **Provide a strong value proposition for our customers.** Our cloud-managed wired and wireless networking solutions provide additional choice and flexibility with cloud or on-premises options for device and application management coupled with our award-winning services and support. This delivers a strong value proposition to the following customers and applications:
  - Enterprises and private cloud data centers use our products to deploy automated next-generation virtualized and high-density infrastructure solutions.
  - Enterprises and organizations in education, healthcare, retail, manufacturing, hospitality, transportation and logistics, and government agencies use our solutions for their mobile campus and backbone networks.
  - Enterprises, universities, stadiums, healthcare, and hospitality organizations use our solutions to enable better visibility and control of their data processing and analytics requirements.
- **Provide high-quality customer service and support.** We seek to enhance customer satisfaction and build customer loyalty through high-quality service and support. This includes a wide range of standard support programs that provide the level of service our customers require, from standard business hours to global 24-hour-a-day, 365-days-a-year real-time response support.
- **Extend access and routing technology leadership.** Our technological leadership is based on innovative switching, routing and wireless products, the depth and focus of our market experience and our operating systems - the software that runs on all of our networking products. Our products reduce operating expenses for our customers and enable a more flexible and dynamic network environment that will help them meet the upcoming demands of IoT, mobile, and cloud, etc. Furthermore, our network operating systems, our primary merchant silicon vendor, and select manufacturing partners permit us to leverage our engineering investment. We have invested in engineering resources to create leading-edge technologies to increase the performance and functionality of our products, and as a direct result, the value of our solution to our current and future customers. We look for maximum synergies from our engineering investment in our targeted verticals.
- **Expand Wi-Fi technology leadership.** Wireless is today's network access method of choice and every business must deal with scale, density, and BYOD challenges. The increase in demand, fueled by more users with multiple devices, increases the expectation that everything will just work. The network edge landscape is changing as the explosion of mobile devices increases the demand for mobile, transparent, and always-on wired to wireless edge services. This new "unified access layer" requires distributed intelligent components to ensure that access control and resiliency of business services are available across the entire infrastructure and manageable from a single console. Our unified access layer portfolio provides intelligence for the wired/wireless edge and our acquisition of Aerohive further solidifies our leadership position in this critical technology pillar.
- **Continue to deliver unified management and a common fabric across the wired/wireless environment from the Data Center to the mobile Edge.** Our rich set of integrated management capabilities provides centralized visibility and highly efficient anytime, anywhere control of enterprise wired and wireless network resources, on-premises or from the Cloud.
- **Offer a superior quality of experience.** Our network-powered application analytics provide actionable business insight by capturing and analyzing context-based data about the network and applications to deliver meaningful intelligence about applications, users, locations and devices. With an easy-to-comprehend dashboard, our applications help businesses to turn their network into a strategic business asset that helps executives make faster and more effective decisions.

  Data can be mined to show how applications are being used enabling a better understanding of user behavior on the network, identifying the level of user engagement and assuring business application delivery to optimize the user experience. Application adoption can be tracked to determine the return on investment associated with new application deployment.

  Visibility into network and application performance enables our customers to pinpoint and resolve performance bottlenecks in the infrastructure whether they are caused by the network, application, or server. This saves both time and money for the business and ensures critical applications are running at the best possible performance.
- **Software-driven networking solutions for the enterprise.** We are a software-driven networking solution company focused on the enterprise. We focus our R&D team and our sales teams to execute against a refined set of requirements for optimized return on investment, faster innovation, and clearer focus on mega trends and changes in the industry. As a software-driven networking company, we offer solutions for the entire enterprise network, the data center, the campus, the core and the WLAN.

- **Expand market penetration by targeting high-growth market segments.** Within the Campus, we focus on the mobile user, leveraging our automation capabilities and tracking WLAN growth. Our Data Center approach leverages our product portfolio to address the needs of public and private Cloud Data Center providers. Within the Campus we also target the high-growth physical security market, converging technologies such as Internet Protocol ("IP") video across a common Ethernet infrastructure in conjunction with technology partners. Cloud Networking is the fastest growing segment of WLAN growth, with a 15% projected compound annual growth rate year over year (compared to low single digits for the WLAN industry as a whole), and our focus is on expanding our technology foothold in this key segment with the acquisition of Aerohive to accelerate not only cloud management adoption, but also subscription-based licensing (SaaS) consumption.
- **Leverage and expand multiple distribution channels.** We distribute our products through select distributors, a large number of resellers and system-integrators worldwide, and several large strategic partners. We maintain a field sales force to support our channel partners and to sell directly to certain strategic accounts. As an independent networking vendor, we seek to provide products that, when combined with the offerings of our channel partners, create compelling solutions for end-user customers.
- **Maintain and extend our strategic relationships.** We have established strategic relationships with a number of industry-leading vendors to both provide increased and enhanced routes to market, but also to collaboratively develop unique solutions.

We seek to differentiate ourselves in the market by delivering a value proposition based on a software-driven approach to network management, control and analytics.

Our key points of differentiation include:

- **Extreme Elements™.** Extreme Elements are the building blocks that enable the creation of an Autonomous Network to deliver the positive outcomes important to customer organizations, including those in education, healthcare, retail, manufacturing, transportation and logistics, and government. Combining architecture, automation, and artificial intelligence, Extreme Elements enable customers to get what they need, when and where they need it.
- **Data center to access edge wired and wireless solutions**. Extreme offers a complete, unified portfolio of software-driven network access solutions from the edge to the cloud. We have the latest in wireless access points for both outdoor and indoor use plus a complete line of networking options for the Campus, Core, and Data Center, all of which are enhanced with our extensive portfolio of intelligent applications.
- **Multi-vendor management from a "single pane-of-glass".** Extreme's Management Center ("XMC") is a single unified management system that is designed to provide visibility, security, and control across the entire network. This can make the network easier to manage and troubleshoot, often with lower operating expenses. Extreme's software can manage third-party vendors' network devices, allowing our customers to potentially maximize device lifespan and protect investments.
- **Software-driven vertical solutions.** Extreme's software-driven solutions are designed to be easily adaptable to vertical solutions in industries such as healthcare, education, manufacturing, retail, transportation and logistics, government and hospitality. Extreme solutions are also designed to be well-suited for vertical-specific partners in these industries.
- **Extreme Validated Design.** Helping customers consider, select, and deploy data center network solutions for current and planned needs is our mission. Extreme Validated Designs offer a fast track to success by accelerating that process. Validated designs are repeatable reference network architectures that have been engineered and tested to address specific use cases and deployment scenarios.
- **Application-aware Quality of Service ("QoS") and analytics**. Extreme has innovative analytic software that enables our customers to see application usage across the network and apply policies that maximize network capabilities. This allows our customers to improve the user experience.
- **Built-in identity and access control.** Our network access control and identity management solutions are delivered with our network infrastructure to reduce the need to add expensive software or hardware that may require complex compatibility testing.
- **Easier policy assignment and SDN.** Our software applications allow our customers to assign policy across the entire network, and Extreme Workflow Composer improves IT agility by automating the entire network lifecycle—including initial provisioning, configuration, validation, and troubleshooting/auto-remediation—with event-driven automation. The SDN component adds versatility for implementing policies that increase network utilization.
- **100% in-sourced tech support.** ExtremeWorks delivers best in class customer support in the industry with 92% first call resolution through a 100% in-sourced support model.
- **Strengthens the Channel.** Extreme sells products primarily through an ecosystem of channel partners which combine our portfolio elements together to create customized IT solutions for end user customers.

Products

Our software-driven networking products offer resilient high-performance networking, granular visibility and control and strategic intelligence for business innovation and operational simplicity. Fabric technologies enable “network-wide automation” that provides simple “plug-and-play” operation and much faster time-to-service. We build our products into vertical market solutions for converged campus networks that provide user and device mobility. Data Center and Cloud administrators are able to virtualize their servers and storage over our high-performance Ethernet infrastructure. Extreme’s access control and analytics software provides visibility, control, strategic intelligence and security from the Data Center to the Edge - all through a single pane-of-glass.

Our product categories include:

- **Smart OmniEdge wireless and edge switching:** Our ExtremeSwitching Edge/Access Switch portfolio delivers Ethernet connectivity for the Edge of the network along with our Smart OmniEdge portfolio consists of our ExtremeMobility and its family of Wireless Access Points enables the deployment of high speed performance at scale for campus high-density or distributed environments.

  Within the ExtremeSwitching portfolio are products offering Access connection speeds ranging from 100M to 25G – including new multi-rate 2.5G and 5G capabilities. These Switches provide various physical presentations (copper and fiber) along with options to deliver traditional Ethernet or convergence-friendly Power-over-Ethernet (“POE”), including high-power universal POE consisting of 90W power to support new classes of Ethernet-powered devices. These Switching products, combined with our unique Fabric capability, deliver automation and hypersegmentation, as well as features, performance, and reliability required by our customers to deploy, operate and manage converged infrastructure, along with the ability to harden the perimeter of the network infrastructure.

  Our Wireless Access Point portfolio includes both indoor and outdoor 802.11a/b/g/n/ac/ax Access Points. Proven in the most demanding environments, ExtremeMobility delivers an exceptional experience for BYOD and mobile users wherever they may roam. During fiscal year 2019, we continued our growth in high-density venue deployments with the upgrade of existing infrastructure to our new Wi-Fi 6 (802.11ax) offering and our acquisition of Aerohive Networks that will further enhance our portfolio of Wi-Fi 6 Aps.

  Our ExtremeMobility Access Points also support a flexible and distributed wireless option that serves many top retailers, hospitality brands, and transportation and logistics companies globally. In fiscal year 2019, we introduced our converged operating system, WiNG 7, which enables our customers to purchase a single hardware platform, starting with our Wi-Fi 6 (802.11ax) access point portfolio, and then choose between the campus or distributed mode option for the optimal deployment architecture in their environment. In addition, we introduced updates to AirDefense; a premier wireless security solution, delivering intrusion detection and prevention capabilities across the wireless portfolio as well as ExtremeAI RF, which leverages artificial intelligence and machine learning to deliver a better wireless experience for both IT and the end-user.

  Our Smart OmniEdge solution delivers a single architecture from the Campus Core to the unified wired/wireless Edge by extending the Fabric Attach capability to ExtremeMobility APs, in both Campus and Distributed mode. This enables ExtremeMobility integration into existing and new Fabric Connect deployments and also enables rapid, zero-touch deployment of ExtremeWireless APs.

- **Automated Campus**. Our Automated Campus consists of ExtremeSwitching Aggregation/Core Switches designed to address the demanding needs of Aggregation, Top-of-Rack and Campus Core environments. Delivering 10G, 25G, 40G, 50G and now also 100G connectivity with maximum throughput and reliability, these switches provide flexible Ethernet connectivity over a range of interface types and speeds and are available in both fixed and modular configurations. These Switching platforms, in conjunction with our advanced operating systems and centralized management software, provide the density, performance, and reliability required to serve in a diverse range of environments, especially where application demands and uptime expectations are mission-critical.

  Our switch portfolio also includes next-generation, low-profile, high-density Ethernet switches for the Campus. These switches complement the Extreme Automated Campus products that are currently in the market, and together these products empower the creation of versatile always-on campus solutions that are Fabric-enabled and 25 to 100 Gigabit-ready. The technologies supported by these innovative platforms can also leverage automated network attachment to proactively reduce operational burden and time-to-service.

- **Agile Data Center**: Our VDX, MLX, and SLX Data Center family of switches and routers provide the highest levels of reliability and throughput - specifically designed to address the exacting demands of high-performance enterprise and Cloud Data Centers. These products are available in both fixed and modular chassis configurations and include a set of advanced features such as redundant management and fabric modules, hot-swappable line cards on our chassis-based platforms, as well as multi-speed stacking of up to 100G and flexible 10/25/40/50/100G port options on our fixed-form platforms, which makes these switches well-suited for a majority of enterprise Data Center environments. Both platform types also provide redundant power supplies and fan trays to ensure high hardware availability.

  These switches also provide key feature extensions for Data Centers through technologies that include Virtual Extensible LAN ("VXLAN"), MPLS/VPLS, and Shortest Path Bridging capabilities. In addition to these capabilities, our Data Center Switches offer innovative traffic optimization enabling Virtual Machine ("VM") mobility via Layer 3 Data Center Interconnect. Our CoreFlow2 architecture delivers tens of millions of flows for deep visibility and control over users, services, and applications to meet the analytic and policy demands of today's business applications.

- **Unified Applications.** Our application portfolio consists of an integrated management platform offering a consistent experience across the network. Extreme Management Center empowers our customers to turn their network into a strategic business asset that drives crucial business objectives. It provides visibility, control and meaningful information across the wired and wireless network, from the edge to the private cloud, across multi-vendor environments. Our Extreme Management Center gives IT departments visibility and automated control over users, devices, and applications. It enables them to manage, automate and report on the entire network and applications. With Extreme Management Center, IT can correlate network and application performance with user and device activities to troubleshoot issues fast. Strategic information from the network allows enterprises to make real-time decisions on policies, devices, applications, and people. This way, the implementation of new technologies such as BYOD and IoT can be automated and securely executed. Customers can deploy, configure, monitor and support the complete range of wired, wireless and switching infrastructure and set network-wide policy to enable enterprises to reduce the overall cost of network administration and operations, protect corporate resources and provide a consistently high-quality user experience that is managed through a single pane of glass, no need to switch screens or applications.

  - **Network access control for secure BYOD and IoT management.** ExtremeControl is part of our Extreme Management Center and lets enterprises unify the security of their wired and wireless networks with in-depth visibility and control over users, devices, and applications. Granular policy controls enable enterprises to comply with policies and compliance obligations. They can use ExtremeControl to locate, authenticate and apply targeted policies to users and devices as users connect to the network for secure BYOD, guest access, and IoT. ExtremeControl is integrated with major enterprise platforms, including solutions for network security, enterprise mobility management, analytics, Cloud, and Data Center. In addition, it offers an open northbound API for customized integrations to key enterprise platforms.

  Key product features include:

    - Enables secure guest access and BYOD via a self-service portal with social media logins,
    - Reduces security vulnerabilities with end-system posture assessment,
    - Expands security integration with next-generation firewalls,
    - Offers visibility across your network with advanced reporting and alerting,
    - Offers an open API for customized integrations.

  - **Application analytics for strategic intelligence.**

    ExtremeAnalytics, also a part of our Extreme Management Center, is a network-powered application analytics and optimization solution that captures network data, then aggregates, analyzes, correlates and reports on it to enable better decision making and improved business performance. Granular visibility into network and application performance, users, locations and devices empower our customers to make data-driven business decisions. Customers can save operational costs, solve issues faster and deliver a superior end user experience with real-time data in one easy-to-read dashboard. Our solution speeds up troubleshooting by separating the network from application performance, so IT can quickly identify root-causes. ExtremeAnalytics makes our customers' networks safer as it monitors shadow IT, identifies and reports malicious or unwanted applications, and monitors security compliance. Because of the value ExtremeAnalytics provides, Extreme was selected as the Official Wi-Fi & Analytics Provider for the NFL.

Key product features include:

- Enables troubleshooting and visualization of all wireless clients with our intuitive event analyzer,
- Allows customers to manage quality of experience by understanding network and application performance in one simple view,
- Provides contextual data about applications on the network without performance degradation,
- Includes transport layer independent application fingerprinting (a network security term to describe a collection of attributes from a network device),
- Allows customers to identify problems proactively.

ExtremeGuest is complemented with ExtremeLocation which is a cloud service that enables enterprises to incorporate location-based services, which when combined with guest analytics, can power contextual marketing campaigns for retailers and hotel chains.

- **Cloud-based network management: simple, flexible, and powerful.** ExtremeCloud is an elastic, API driven wired and wireless cloud network management solution that offers advanced visibility and control over users and applications. Application analytics allow managed service providers (“MSPs”) to deliver insights about how customer networks are being used and which policies they need to implement to optimize user experience. ExtremeCloud empowers MSPs to explore new revenue streams without additional investment in Cloud infrastructure. ExtremeCloud keeps operational cost low, adjusts to customer demand and protects their brand with white labeling. Elasticity and API foundation combined with zero-touch provisioning, multi-tenancy and delegation allows MSPs to optimize their operations and address the needs of geographically distributed customers from a single location. Extensive Representational State Transfer (“REST”) APIs enable end-to-end automation and empower MSPs to be more agile and responsive to customer needs. We expect to further enhance ExtremeCloud with our acquisition of Aerohive, which will add over 20,000 cloud customers to our install base and expand the Cloud footprint to nine global data centers.

Sales, Marketing and Distribution

We conduct our sales and marketing activities on a worldwide basis through a channel that utilizes distributors, resellers and our field sales organization. As of June 30, 2019, our worldwide sales and marketing organization consisted of 900 employees, including vice presidents, directors, managers, sales representatives, and technical and administrative support personnel. We have domestic sales offices located in seven states and international sales offices located in 33 countries.

We sell our products primarily through an ecosystem of channel partners who combine our Extreme Elements™ consisting of Ethernet, wireless, management and analytics software products with their vertical specific offerings to create compelling information technology solutions for end-user customers. We utilize our field sales organization to support our channel partners and to sell directly to certain end-user customers, including some large global accounts.

The details of our sales and distribution channels are as follows:

- **Alliance, Original Equipment Manufacturers ("OEM") and Strategic Relationships.** We have active alliance, OEM & strategic relationships with Barco NV, Ericsson Enterprise AB, Silicon Graphics International, Inc. (acquired by HPE), PC HK Ltd., Nokia Siemens Networks and Aviat Networks, Inc. as well as other global industry technology leaders in which our products are qualified to be included into an overall solution or reference architecture. These tested and validated solutions are then marketed and sold by the alliance, OEM or strategic partners into their specific verticals, market segments and customers as turnkey offerings.
- **Distributors.** We have established several key relationships with leading distributors in the electronics and computer networking industries. Each of our distributors primarily resells our products to resellers. The distributors enhance our ability to sell and provide support to resellers who may benefit from the broad service and product fulfillment capabilities offered by these distributors. Extreme maintains distribution agreements with our largest distributors, Westcon Group, Tech Data Corporation and Jenne Corporation on substantially the same material terms as we generally enter into with each of our distributor partners. Distributors are generally given the right to return a portion of inventory to us for the purpose of stock rotation, to claim rebates for competitive discounts and participate in various cooperative marketing programs to promote the sale of our products and services.
- **Resellers.** We rely on many resellers worldwide that sell directly to the end-user customer. Our resellers include regional networking system resellers, resellers who focus on specific vertical markets, value added resellers, network integrators and wholesale resellers. We provide training and support to our resellers and our resellers generally provide the first level of contact to end-users of our products. Our relationships with resellers are on a non-exclusive basis. Our resellers are not given rights to return inventory and do not automatically participate in any cooperative marketing programs.

- **Field Sales**. Our field sales organization is trained to sell solutions, support and develop leads for our resellers and to establish and maintain key accounts and strategic end-user customers. To support these objectives, our field sales force:
  - Assists end-user customers in finding solutions to complex network system and architecture problems,
  - Differentiates the features and capabilities of our products from competitive offerings,
  - Continually monitors and understands the evolving networking needs of enterprise and service provider customers,
  - Promotes our products and ensures direct contact with current and potential customers,
  - Assists our resellers to drive opportunities to closure business.

Although we compete in many vertical markets, in fiscal year 2019, we have focused on the specific verticals of healthcare, education, retail, manufacturing, government and hospitality, which includes sports and entertainment venues. Years of experience and a track record of success in the verticals we serve enables us to address the following industry-specific problems.

Healthcare:

- **Patient services.** In an increasingly competitive healthcare market, ensuring patient and visitor access from a variety of devices to the Internet can be a competitive advantage. We have several medical facilities worldwide that can reference Extreme's expertise in meeting the challenges of patient services which include: online services, guest Wi-Fi, IoT, wearables and sensors.
- **The majority of new medical devices are IP-based**. Not only are most medical devices monitored through the network, they are regulated by various government agencies across the globe. Extreme has success in meeting this challenge with compliance through our complete wireless and wired product suite overseen by innovative management and analytics.
- **Clinical workflow has shifted to real-time mobility inside and outside the hospital.** Medical professionals often access critical patient records through network connections. Extreme's reliable and comprehensive technology, including the latest Wi-Fi 6 capability, is backed by practical experience in addressing the demanding needs of clinical workflow.

Education:

- **New styles of teaching.** Personalized learning flipped classrooms and competency-based education depend on well-managed high-bandwidth digital content delivery. Extreme has extensive knowledge in smart classroom and large campus environments; both of which are experiencing a growing presence of IoT devices. Our easy-to-manage networks provide the bandwidth necessary to deliver digital content, including emerging styles like virtual and mixed reality, to thousands of students with the speed and quality required. Extreme has demonstrated the ability to provide high density, two-way Internet connectivity so that each student has a rich and uninterrupted educational experience.
- **Online and technology-based assessment is growing in importance.** K-12 is implementing high stakes standardized testing and higher education is moving to BYOD for online mid-term and final exams. ExtremeAnalytics helps ensure tests proceed by providing visibility into the network flow from student device to local school server to remote testing server.
- **Protecting student privacy, safety and digital freedom**. Extreme has built-in access and identity control to protect the safety and privacy of students, faculty and administrators. This all in one offering helps ease the burden on education institutions that have limited IT resources.

Manufacturing:

- **Operations to meet the fast-changing customer and market requirements.** Flexible manufacturing and build-to-order processes place high demands on the network for material and shop floor control. Extreme's proven technology strives to meet these demands in some of the world's most demanding manufacturing environments.
- **Speed, adaptability and innovation are the new currencies in the manufacturing realm**. A fast and reliable network can help to accommodate speed. Extreme's full suite of wired and wireless product and management and analytics software enable agile manufacturing.
- **Visibility into plant and back office technology performance**. Extreme's management, control and analytics provide end-to-end network visibility from a single console without the need to swap user interfaces. This unique capability is well-suited for plant and back office environments.

Government:

- **Secure access.** Government agencies are being challenged to provide their employees and the citizens they serve with secure, cost-effective, high-speed access to online information and resources. For today's agencies, high quality video, collaboration, social media, VoIP and multimedia applications have become mission-critical services. These applications have placed unprecedented bandwidth and control demands on existing networks.
- **Management of new technologies.** The increasingly rapid deployment of wireless access, data center virtualization and the adoption of cloud computing have further complicated network management and control. For federal government agencies, the challenge is determining how to deliver secure, seamless, always-on access to these mission-critical services.
- **Controlling costs.** Agencies need to deliver access from laptops, tablets, smartphones and other types of devices, at any time, from any place and from anywhere, while at the same time maximizing efficiencies and cost savings across all areas of the network infrastructure. Extreme provides a rich set of networking solutions that strive to be cost-effective and secure and allow government agencies to meet not only today's needs, but also to be prepared for future demands.

Hospitality:

- **Developing a cohesive and enhanced mobile experience.** Through real world experience in sports stadiums, where over 70,000 fans actively access the Internet, Extreme has developed the expertise to handle the most demanding venue challenges. Our hospitality experience spans hotels, casinos, theaters, convention centers, vacation destinations and outdoor venues.
- **Emphasizing the user experience and mobile engagement.** Extreme has the ability to monitor applications so that policy to maximize user experience can be implemented in fixed and mobile environments with the same set of management tools from a single pane of glass.
- **Generating revenue opportunities for the business**. Knowing the behaviors of customers and clients is a key to success and Extreme Analytics provides visibility to the usage patterns and traits of network users.

Retail:

- **Transforming the brick and mortar retail experience**. Extreme's strength in the retail vertical is built upon years of experience delivering Wi-Fi across distribution centers, driving efficiencies in logistics workflow, and enabling in-store Wi-Fi to maximize associate resource planning and customer engagement. ExtremeAnalytics, Extreme's location and mobile usage analytics tool, also provides brands with unique insights into in-store behaviors of their customers. This is fast becoming one of Extreme's competitive differentiators in the retail vertical. ExtremeLocation, Extreme's real-time location and analytics application, delivers scalable, multi-tier indoor location services, especially in retail environments and across thousands of locations. ExtremeLocation offers a range of granular location accuracy resolution from geo-fencing to micro- locationing, to address various application scenarios with extensive real- time and historical location analytics, such as new and repeat visitors, engagement times, location of associates or assets, and specifics of site or zone performance. Bluetooth BLE beacons, an added feature of the ExtremeLocation solution, can be employed to provide another layer of location-based analytics and be utilized to engage guests in a targeted, contextual way.

Customer Profiles:

Furthermore, in fiscal 2019, we decided to focus on the following customer profiles where we believe we can add the most value:

- **Customer size:** Those customers with annual revenue of $100 million to $2.5 billion.
- **Target deployment:** Campus deployments with 250 to 5,000 employees or education campuses with 1,000 to 15,000 students.
- **Target data centers:** Data centers with 1,000 servers or less.
- **Vertical markets:** Healthcare, education, government, manufacturing retail, and hospitality, which includes sports and entertainment venues.
- **Customer characteristics:** Our customers tend to operate in transient environments, such as college campuses, hospitals and sports venues, where BYOD and secure network access and identity control are critical. Their networks must be highly available with the ability to continue operations in the event of a service interruption. Secure access is essential to ensuring the protection of mission-critical systems and confidential information. Often tasked to manage the network with a limited IT staff, our customers appreciate the excellent service and support we strive to provide.

Customers with 10% of net revenue or greater

See Note 3 of our Notes to Consolidated Financial Statements in this Annual Report on Form 10-K for more information regarding our customers with 10% of net revenue or greater.

International sales

International sales are an important portion of our business. In fiscal 2019, sales to customers outside of the United States accounted for 50% of our consolidated net revenues, compared to 50% in fiscal 2018 and 49% in fiscal 2017. These sales are conducted primarily through foreign-based distributors and resellers managed by our worldwide sales organization. In addition, we have direct sales to end-user customers, including large global accounts. The primary markets for sales outside of the United States are countries in Europe and Asia, as well as Canada, Mexico, Central America and South America.

We operate in one segment, the development and marketing of network infrastructure equipment. Information concerning revenue, results of operations and revenue by geographic area is set forth under Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations,". Information on risks attendant to our foreign operations is set forth below in Item 1A. "Risk Factors."

Marketing

We continue to develop and execute a number of marketing programs to support the sale and distribution of our products by communicating the value of our solutions to our existing and potential customers, our distribution channels, our resellers and our technology alliance partners. Our marketing efforts include participation in industry tradeshows, conferences and seminars, publication of technical and educational articles in industry journals, communication across social media channels, frequent updates to our publicly available website, promotions, web-based training courses, advertising, analyst relations and public relations. We also submit our products for independent product testing and evaluation. Extreme participates in numerous industry analyst ratings including Gartner Magic Quadrants, Gartner Critical Capabilities, Gartner Peer Insights, Forrester Waves, IDC MarketScapes and InfoTech Vendor Landscapes.

Backlog

Our products are often sold on the basis of standard purchase orders that are cancelable prior to shipment without significant penalties. In addition, purchase orders are subject to changes in quantities of products and delivery schedules in order to reflect changes in customer requirements and manufacturing capacity. Our business is characterized by seasonal variability in demand and short lead-time orders and delivery schedules. Actual shipments depend on the then-current capacity of our contract manufacturers and the availability of materials and components from our vendors. Although we believe the orders included in the backlog are firm, all orders are subject to possible rescheduling by customers, cancellations by customers which we may elect to allow without penalty to customer, and further pricing adjustments on orders from distributors. Therefore, we do not believe our backlog, as of any particular date is necessarily indicative of actual revenue for any future period.

Our product backlog at June 30, 2019, net of anticipated back end rebates for distributor sales, was $20.7 million, compared to $42.5 million at June 30, 2018.

Seasonality

Like many of our competitors, we historically have experienced seasonal fluctuations in customer spending patterns, which generally adversely affect our first and third fiscal quarters. This pattern should not be relied upon or be considered indicative of our future performance, however, as it has varied in the past.

Customer Service and Support

Our customers seek high reliability and maximum uptime for their networks. To that extent, we provide the following service offerings:

- *Support services for end-users, resellers and distributors.* We meet the service requirements of our customers and channel partners through our Technical Assistance Centers ("TACs"), located in Morrisville, North Carolina; Salem, New Hampshire; Holtsville, New York; San Jose, California; Reading, United Kingdom; Penang, Malaysia; Brno, Czech Republic; Utrecht, Netherlands; Bangalore and Chennai, India. Our TAC engineers and technicians assist in diagnosing and troubleshooting technical issues regarding customer networks. Development engineers work with the TACs to resolve product functionality issues specific to each customer.

- *Professional services.* We provide consultative services to improve customer productivity in all phases of the network lifecycle – planning, design, implementation, operations and optimization management. Our network architects develop and execute customized software and service-led networking solutions for deployment plans to meet individualized network strategies. These activities may include the management and coordination of the design and network configuration, resource planning, staging, logistics, migration and deployment. We also provide customized training and operational best practices manuals to assist customers in the transition and sustenance of their networks.
- *Education.* We offer classes covering a wide range of topics such as installation, configuration, operation, management and optimization – providing customers with the necessary knowledge and experience to successfully deploy and manage our products in various networking environments. Classes may be scheduled and available at numerous locations worldwide. We deliver training using our staff, on-line training classes and authorized training partners. In addition, we make much of our training materials accessible free-of-charge on our internet site for customers and partners to use in self-education. We believe this approach enhances the market's ability to learn and understand the broad array of advantages of our products.

Long-Lived Assets

See Note 6 of our Notes to Consolidated Financial Statements in this Annual Report on Form 10-K for more information regarding our long-lived assets.

Manufacturing

We utilize a global sourcing strategy that emphasizes procurement of materials and product manufacturing in competitive geographies. We rely upon third-party contract manufactures and (ODM) original design manufacturers (Alpha Networks, Delta Networks Inc, Foxconn, Senao Networks and Wistron NeWeb Corporation) to manufacture, support and ship our products, and therefore are exposed to risks associated with their businesses, financial condition, geographies and geopolitical conflict in which they operate. Our arrangements with these Tier 1 manufacturers generally provide for quality, cost, and delivery requirements, as well as manufacturing process terms, such as continuity of supply; inventory management; flexible capacity, quality, and cost management; oversight of manufacturing; and conditions for use of our intellectual property that allows us to adjust more quickly to changing end-customer demand. We also leverage and depend on the strong Corporate and Social Responsibility policies and standards of our Tier 1 manufacturers. The ODM manufacturing process uses automated testing equipment and burn-in procedures, as well as comprehensive inspection, testing, and statistical process controls, which are designed to help ensure the quality and reliability of our products. The manufacturing processes and procedures are generally certified to International Organization for Standardization ("ISO") 9001 standards. The manufacturing process and material supply chains are flexible enough to be moved to steer away from geopolitical conflicts that impact cost.

We use a collaborative sales and operations planning ("S&OP") forecast of expected demand based upon historical trends and analyses from our sales and product management functions as adjusted for overall market conditions. We update these forecasts monthly to determine our material requirements. Our manufacturing partners procure the majority of the components needed to build our products based on our demand forecasts. This allows us to leverage the purchasing power of our manufacturing partners. Our products rely on key components, including merchant silicon, integrated circuit components and power supplies purchased from a limited number of suppliers, including certain sole source providers. Lead times for materials and components vary significantly, and depend on factors such as the specific supplier, complexity, contract terms and demand for a component at a given time. From time to time, we may experience price volatility or supply constraints for certain components that are not available from multiple qualified sources or where our suppliers are geographically concentrated. When necessary, we are often able to obtain scarce components for somewhat higher prices on the open market, which may have an impact on our gross margin, but does not generally disrupt production. We may also acquire component inventory in anticipation of supply constraints or enter into longer-term pricing commitments with vendors to improve the priority, price and availability of supply. Our product development efforts also depend upon continued collaboration with our key suppliers, including our merchant silicon vendors such as Broadcom. As we develop our product roadmap and continue to expand our relationships with these and other merchant silicon vendors, it is critical that we work in tandem with our key vendors to ensure that their silicon includes improved features and that our products take advantage of such improved features.

We believe our sourcing and manufacturing strategy allows us to conserve capital, lower costs of product revenues, adjust quickly to changes in market demand, and operate without dedicating significant resources to manufacturing-related plant and equipment. As part of our effort to optimize our operations, we continue to focus on driving cost reductions through sourcing, rationalizing our supply chain, outsourcing or virtualizing certain activities, and consolidating distribution sites and service logistics partners. These efforts also include process optimization initiatives, such as vendor managed inventory, and other operational models and strategies designed to drive improved efficiencies in our sourcing, production, logistics and fulfillment.

Research and Development

The success of our products to date is due in large part to our focus on research and development. We believe that continued success in the marketplace will depend on our ability to develop new and enhanced products employing leading-edge technology. Accordingly, we plan to undertake development efforts with an emphasis on increasing the reliability, performance and features of our family of products, and designing innovative products to reduce the overall network operating costs of customers.

Our product development activities focus on solving the needs of customers in the enterprise campus by providing an end-to-end, wired and wireless network solution from the access edge to the private clouds in targeted verticals. Current activities include the continuing development of our innovative switching technology aimed at extending the capabilities of our products. Our ongoing research activities cover a broad range of areas, including, 1G, 2.5G, 5G, 10G, 25G, 40G, 50G and 100G Ethernet, routing, and resiliency protocols, open standards interfaces, software defined networks, network security, identity management, data center fabrics, and wireless networking. In addition, we continue to ramp up our investments in Machine Learning/Artificial Intelligence technology targeting Cloud Wi-Fi, IoT anomaly detection, and autonomous networking.

We plan to continue to enhance the functionality of our network operating systems which have been designed to provide high reliability and availability. This allows us to leverage a common operating system across different hardware and network chipsets.

As of June 30, 2019, our research and development organization consisted of 982 employees. Research and development efforts are conducted in several of our locations, including San Jose, California, Morrisville, North Carolina; Salem, New Hampshire; Toronto, Canada, and Bangalore and Chennai, India. Our research and development expenses in fiscal years 2019, 2018 and 2017 were $210.1 million, $183.9 million and $93.7 million, respectively.

Intellectual Property

We rely on a combination of patent, copyright, trademark and trade secret laws and restrictions on disclosure to protect our intellectual property rights. As of June 30, 2019, we had 604 issued patents in the United States and 373 patents outside of the United States. The expiration dates of our issued patents in the United States range from 2019 to 2037. Although we have patent applications pending, there can be no assurance that patents will be issued from pending applications or that claims allowed on any future patents will be sufficiently broad to protect our technology. As of June 30, 2019, we had 26 registered trademarks in the United States and 245 registered trademarks outside of the United States.

We enter into confidentiality, inventions assignment or license agreements with our employees, consultants and other third parties with whom we do business, and control access to, and distribution of, our software, documentation and other proprietary information. In addition, we provide our software products to end-user customers primarily under “shrink-wrap” or "click-through" license agreements. These agreements are not negotiated with or signed by the licensee, and thus these agreements may not be enforceable in some jurisdictions. Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy or otherwise obtain and use our products or technology, particularly in foreign countries where the laws may not protect our proprietary rights as fully as in the United States.

Competition

The market for network switches, routers and software (including analytics) which is part of the broader market for networking equipment is extremely competitive and characterized by rapid technological progress, frequent new product introductions, changes in customer requirements and evolving industry standards. We believe the principal competitive factors in this market are:

- expertise and familiarity with network protocols, network switching/routing/wireless and network management;
- expertise and familiarity with application analytics software;
- expertise with network operations and management software;
- expertise in machine learning and artificial intelligence;
- product performance, features, functionality and reliability;
- price/performance characteristics;
- timeliness of new product introductions;
- adoption of emerging industry standards;
- customer service and support;
- size and scope of distribution network;

- brand name;
- breadth of product offering;
- access to customers; and
- size of installed customer base.

We believe we compete with our competitors with respect to many of the foregoing factors. However, the market for network switching solutions is dominated by a few large companies, particularly Cisco Systems, Inc., Dell, Hewlett-Packard Enterprise Co., Huawei Technologies Co. Ltd., Arista Networks Inc., CommScope, and Juniper Networks Inc. Most of these competitors have longer operating histories, greater name recognition, larger customer bases, broader product lines and substantially greater financial, technical, sales, marketing and other resources.

We expect to face increased competition from both traditional networking solutions companies and Cloud platform companies offering Infrastructure-as-a-Service (“IaaS”) and Platform-as-a-Service (“PaaS”) products to enterprise customers. In that regard, we expect to face increased competition from certain Cloud Computing companies such as Amazon Web Services (“AWS”), Microsoft (“Microsoft Azure”), and Google Inc. (“Google Cloud Platform”) providing a cloud-based platform of data center compute and networking services for enterprise customers.

With the acquisitions of assets from Zebra, Avaya, Brocade, and Aerohive we believe Extreme is uniquely positioned to address the most pressing market needs from the campus to the data center. Although we believe that our solutions and strategy will improve our ability to meet the needs of our current and potential customers, we cannot guarantee future success.

Restructuring

Fiscal year 2017

During fiscal 2017, we realigned our operations by continuing to review our excess facilities, expected sublease income, and implemented a reduction-in-force. We subleased our previous headquarters location at Rio Robles Drive in San Jose, California (“Rio Robles”) and moved into a larger location at 6480 Via del Oro in San Jose, California (“Via del Oro”) acquired as part of the WLAN Business acquisition. Additionally, due to the acquisitions of the Campus Fabric Business and the Data Center Business, there was a need to accommodate the increase in headcount. To address this need, the Company reoccupied a majority of the previously exited space in its Salem, New Hampshire location. In addition, we announced a reduction-in-force during the fiscal year affecting 90 employees.

Fiscal year 2018

During fiscal 2018, we executed a plan to re-align our resources to take advantage of new growth opportunities as a result of the acquisitions of the Campus Fabric Business and the Data Center Business. The costs associated with this restructuring plan primarily included employee severance and benefits expenses and affected 180 employees.

Fiscal year 2019

On June 25, 2019, we began executing a reduction-in-force plan (the 2019 Plan) to better align our work force and operating expenses. We estimate we will incur charges beginning in the fourth quarter of fiscal year 2019 through the second quarter of fiscal 2020, inclusive. Costs associated with the 2019 Plan will be primarily comprised of employee severance and benefits expenses and affected 140 employees, relocation of personnel and equipment and exit of excess facilities.

Environmental Matters

We are subject to various environmental and other regulations governing product safety, materials usage, packaging and other environmental impacts in the United States and in various countries where our products are manufactured and sold. We are also subject to regulatory developments, including recent SEC disclosure regulations relating to so-called "conflict minerals," relating to ethically responsible sourcing of the components and materials used in our products. To date, compliance with federal, state, local, and foreign laws enacted for the protection of the environment has had no material effect on our capital expenditures, earnings, or competitive position.

We are committed to energy efficiency in our product lines. Accordingly, we believe this is an area that affords us a competitive advantage for our products in the marketplace. We maintain compliance with various regulations related to the environment, including the Waste Electrical and Electronic Equipment and the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment regulations adopted by the European Union. To date, our compliance efforts with various United States and foreign regulations related to the environment has not had a material effect on our operating results.

Employees

As of June 30, 2019, we employed 2,713 people, including 900 in sales and marketing, 982 in research and development, 293 in operations, 391 in customer support and services and 147 in finance and administration. We have never had a work stoppage and no employees in the United States are represented under a collective bargaining agreement. We consider our employee relations to be good.

We believe our future success depends on our continued ability to attract, integrate, retain, train and motivate highly qualified employees, and upon the continued service of our senior management and key employees. None of our executive officers or key employees is bound by an employment agreement which mandates that the employee render services for any specific term. The market for qualified personnel is highly competitive.

Organization

We were incorporated in California in May 1996 and reincorporated in Delaware in March 1999. Our corporate headquarters are located at 6480 Via del Oro, San Jose, CA 95119 and our telephone number is (408) 579-2800. We electronically file our Securities Exchange Commission ("SEC") disclosure reports with the SEC and they are available free of charge at both www.sec.gov and www.extremenetworks.com.

Our corporate governance guidelines, the charters of our audit committee, our compensation committee, our nominating and corporate governance committee and our code of business conduct and ethics policy (including code of ethics provisions that apply to our principal executive officer, principal financial officer, controller and senior financial officers) are available on the Investors section of our website at investor.extremenetworks.com under "Corporate Governance." These items are also available to any stockholder who requests them by calling (408) 579-2800.

Item 1A. Risk Factors

The following is a list of risks and uncertainties which may have a material and adverse effect on our business, operations, industry, financial condition, results of operations or future financial performance. While we believe we have identified and discussed below the key risk factors affecting our business, there may be additional risks and uncertainties that are not presently known or that are not currently believed to be significant that may adversely affect our business, results of operations, industry, financial position and financial performance in the future

We cannot assure future profitability, and our financial results may fluctuate significantly from period to period.

We have reported losses in each of our five most recent fiscal years. In addition, in years when we reported profits, we were not profitable in each quarter during those years. We anticipate continuing to incur significant sales and marketing, product development and general and administrative expenses. Any delay in generating or recognizing revenue could result in a loss for a quarter or full year. Even if we are profitable, our operating results may fall below our expectations and those of our investors, which could cause the price of our stock to fall.

We may experience challenges or delays in generating or recognizing revenue for a number of reasons and our revenue and operating results have varied significantly in the past and may vary significantly in the future due to a number of factors, including, but not limited to, the following:

- our dependence on obtaining orders during a quarter and shipping those orders in the same quarter to achieve our revenue objectives;
- decreases in the prices of the products we sell;
- the mix of products sold and the mix of distribution channels through which products are sold;
- acceptance provisions in customer contracts;
- our ability to deliver installation or inspection services by the end of the quarter;
- changes in general and/or specific macro-economic conditions in the networking industry seasonal fluctuations in demand for our products and services;
- a disproportionate percentage of our sales occurring in the last month of a quarter;
- our ability to ship products by the end of a quarter;
- reduced visibility into the implementation cycles for our products and our customers' spending plans;
- our ability to forecast demand for our products, which in the case of lower-than-expected sales, may result in excess or obsolete inventory in addition to non-cancelable purchase commitments for component parts;
- our sales to the telecommunications service provider market, which represents a significant source of large product orders, being especially volatile and difficult to forecast;

- product returns or the cancellation or rescheduling of orders;
- announcements and new product introductions by our competitors;
- our ability to develop and support relationships with enterprise customers, service providers and other potential large customers;
- our ability to achieve and maintain targeted cost reductions;
- fluctuations in warranty or other service expenses actually incurred;
- our ability to obtain sufficient supplies of sole- or limited-source components for our products on a timely basis;
- increases in the price of the components we purchase; and
- changes in funding for customer technology purchases in our markets.

Due to the foregoing and other factors, many of which are described herein, period-to-period comparisons of our operating results should not be relied upon as an indicator of our future performance.

We may not realize anticipated benefits of past or future acquisitions, divestitures and strategic investments, and the integration of acquired companies or technologies may negatively impact our business and financial results or dilute the ownership interests of our stockholders.

As part of our business strategy, we review acquisition and strategic investment prospects that we believe would complement our current product offerings, augment our market coverage or enhance our technical capabilities, or otherwise offer growth opportunities. In the event of any future acquisitions, we could:

- issue equity securities which would dilute current stockholders' percentage ownership;
- incur substantial debt;
- assume contingent liabilities; or
- expend significant cash.

These actions could have a material adverse effect on our operating results or the price of our common stock. For example, on August 9, 2019, we completed our acquisition of Aerohive, a publicly held networking company, for approximately $264 million in cash consideration and assumption of certain employee equity awards.

There can be no assurance we will achieve the revenues, growth prospects and synergies expected from any acquisition or that we will achieve such revenue, growth prospects and synergies in the anticipated time period and our failure to do so could have a material adverse effect on our business, operating results and financial condition. Moreover, even if we do obtain benefits in the form of increased sales and earnings, these benefits may be recognized much later than the time when the expenses associated with an acquisition are incurred. This is particularly relevant in cases where it would be necessary to integrate new types of technology into our existing portfolio and new types of products may be targeted for potential customers with which we do not have pre-existing relationships.

Our ability to realize the anticipated benefits of any current and future acquisitions, divestitures and investment activities, including the acquisition of Aerohive, also entail numerous risks, including, but not limited to:

- difficulties in the assimilation and successful integration of acquired operations, sales functions, technologies and/or products;
- unanticipated costs, litigation or other contingent liabilities associated with the acquisition or investment transaction;
- incurrence of acquisition- and integration-related costs, goodwill or in-process research and development impairment charges, or amortization costs for acquired intangible assets, that could negatively impact our operating results and financial condition;
- the diversion of management's attention from other business concerns;
- adverse effects on existing business relationships with suppliers and customers;
- risks associated with entering markets in which we have no or limited prior experience;
- the potential loss of key employees of acquired organizations and inability to attract or retain other key employees; and
- substantial charges for the amortization of certain purchased intangible assets, deferred stock compensation or similar items.

In addition, we may not be able to successfully integrate any businesses, products, technologies, or personnel that we might acquire in the future, and our failure to do so could have a material adverse effect on our business, operating results and financial condition.

The global economic environment has and may continue to negatively impact our business and operating results.

The challenges and uncertainty currently affecting global economic conditions may negatively impact our business and operating results in the following ways:

- customers may delay or cancel plans to purchase our products and services;
- customers may not be able to pay, or may delay payment of, the amounts they owe us, which may adversely affect our cash flow, the timing of our revenue recognition and the amount of our revenue;
- increased pricing pressure may result from our competitors aggressively discounting their products;
- accurate budgeting and planning will be difficult due to low visibility into future sales;
- forecasting customer demand will be more difficult, increasing the risk of either excess and obsolete inventory if our forecast is too high or insufficient inventory to meet customer demand if our forecast is too low; and
- our component suppliers and contract manufacturers have been negatively affected by the economy, which may result in product delays and changes in pricing and service levels

If global economic conditions do not show continued improvement, we believe we could experience material adverse impacts to our business and operating results.

Our dependence on a few manufacturers and third parties for our manufacturing, warehousing, and delivery requirements could harm our operating results.

We primarily rely on our manufacturing partners: Alpha Networks; Senao Networks; Foxconn; Delta Networks, Wistron NeWeb Corporation and select other partners to manufacture our products. We have experienced delays in product shipments from some of our partners in the past, which in turn delayed product shipments to our customers. These or similar problems may arise in the future, such as delivery of products of inferior quality, delivery of insufficient quantity of products, or the interruption or discontinuance of operations of a manufacturer or other partner, any of which could have a material adverse effect on our business and operating results. In addition, any natural disaster or business interruption to our manufacturing partners could significantly disrupt our business. While we maintain strong relationships with our manufacturing and other partners, our agreements with these manufacturers are generally of limited duration and pricing, quality and volume commitments are negotiated on a recurring basis. The failure to maintain continuing agreements with our manufacturing partners or find replacements for them in a timely manner could adversely affect our business. We intend to introduce new products and product enhancements, which will require that we rapidly achieve volume production by coordinating our efforts with those of our suppliers and contract manufacturers.

As part of our cost-reduction efforts, we will need to realize lower per unit product costs from our manufacturing partners by means of volume efficiencies and the utilization of manufacturing sites in lower-cost geographies. However, we cannot be certain when or if such price reductions will occur. The failure to obtain such price reductions would adversely affect our operating results.

In addition, a portion of our manufacturing is performed in China and is therefore subject to risks associated with doing business outside of the United States, including the possibility of additional import tariffs. The United States government has recently announced import tariffs on goods manufactured in China. These tariffs, depending upon their ultimate scope, duration and how they are implemented, could negatively impact our business by continuing to increase our costs and by making our products less competitive. We may not be able to pass such increased costs on to our customers. In addition, any relocation of contract manufacturing facilities to locations outside of China may increase our costs and could impact the global competitiveness of our products.

We depend upon international sales for a significant portion of our revenue which imposes a number of risks on our business.

International sales constitute a significant portion of our net revenue. Our ability to grow will depend in part on the expansion of international sales. Our international sales primarily depend on the success of our resellers and distributors. The failure of these resellers and distributors to sell our products internationally would limit our ability to sustain and grow our revenue. There are a number of risks arising from our international business, including:

- longer accounts receivable collection cycles;
- difficulties in managing operations across disparate geographic areas;
- potential import tariffs imposed by the United States and the possibility of reciprocal tariffs by foreign countries;
- difficulties associated with enforcing agreements through foreign legal systems;
- reduced or limited protection of intellectual property rights, particularly in jurisdictions that have less developed intellectual property regimes, such as China and India;

- higher credit risks requiring cash in advance or letters of credit;
- potential adverse tax consequences;
- compliance with regulatory requirements of foreign countries, including compliance with rapidly evolving environmental regulations;
- compliance with U.S. laws and regulations pertaining to the sale and distribution of products to customers in foreign countries, including export controls and the Foreign Corrupt Practices Act;
- the payment of operating expenses in local currencies, which exposes us to risks of currency fluctuations:
- political and economic turbulence or uncertainty, such as the United Kingdom's 2016 referendum, commonly referred to as "Brexit" that has created economic and political uncertainty in the European Union;
- terrorism, war or other armed conflict;
- compliance with U.S. and other applicable government regulations prohibiting certain end-uses and restrictions on trade with embargoed or sanctioned countries with denied parties;
- difficulty in conducting due diligence with respect to business partners in certain international markets;
- increased complexity of accounting rules and financial reporting requirements;
- fluctuations in local economies; and
- natural disasters and epidemics.

Any or all of these factors could have a material adverse impact on our business, financial condition, and results of operations.

Substantially all of our international sales are United States dollar-denominated. The continued strength and future increases in the value of the United States dollar relative to foreign currencies could make our products less competitive in international markets. In the future, we may elect to invoice some of our international customers in local currency, which would expose us to fluctuations in exchange rates between the United States dollar and the particular local currency. If we do so, we may decide to engage in hedging transactions to minimize the risk of such fluctuations.

We have entered into foreign exchange forward contracts to offset the impact of payment of operating expenses in local currencies to some of our operating foreign subsidiaries. However, if we are not successful in managing these foreign currency transactions, we could incur losses from these activities.

Local laws and customs in many countries differ significantly from, or conflict with, those in the United States or in other countries in which we operate. 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, procedures and training designed to ensure compliance with these U.S. and foreign laws and policies, there can be no complete assurance that any individual employee, contractor, channel partner, or agents will not violate our policies and procedures. Violations of laws or key control policies by our employees, contractors, channel partners, or agents could result in termination of our relationship, financial reporting problems, fines, and/or penalties for us, or prohibition on the importation or exportation of our products, and could have a material adverse effect on our business, financial condition and results of operations.

Although we recently increased prices, over time we expect the average selling price of our products to decrease, which is likely to reduce gross margin and/or revenue.

The network equipment industry has traditionally experienced an erosion of average selling prices due to a number of factors, including competitive pricing pressures, promotional pricing and technological progress. Although we have recently increased prices, over time we anticipate the average selling prices of our products will decrease in the future in response to competitive pricing pressures, excess inventories, increased sales discounts and new product introductions by us or our competitors. We may experience decreases in future operating results due to the erosion of our average selling prices. To maintain our gross margin, we must develop and introduce on a timely basis new products and product enhancements and continually reduce our product costs. Our failure to do so would likely cause our revenue and gross margin to decline.

We may not fully realize the anticipated positive impacts to future financial results from our restructuring efforts.

We have undertaken restructuring efforts in the past to streamline operations and reduce operating expenses. Our ability to achieve the anticipated cost savings and other benefits from our restructuring efforts within expected time frames is subject to many estimates and assumptions and may vary materially based on factors such as market conditions and the effect of our restructuring efforts on our work force. These estimates and assumptions are subject to significant economic, competitive and other uncertainties, some of which are beyond our control. We cannot assure that we will fully realize the anticipated positive impacts to future financial results from our current or future restructuring efforts. If our estimates and assumptions are incorrect or if other unforeseen events occur, we may not achieve the cost savings expected from such restructurings, and our business and results of operations could be adversely affected.

We purchase several key components for products from single or limited sources and could lose sales if these suppliers fail to meet our needs.

We currently purchase several key components used in the manufacturing of our products from single or limited sources and are dependent upon supply from these sources to meet our needs. Certain components such as tantalum capacitors, SRAM, DRAM, and printed circuit boards, have been in the past, and may in the future be, in short supply. We have encountered, and are likely in the future to encounter, shortages and delays in obtaining these or other components, and this could have a material adverse effect on our ability to meet customer orders. Our principal sole-source components include:

- ASICs - merchant silicon, Ethernet switching, custom and physical interface;
- microprocessors;
- programmable integrated circuits;
- selected other integrated circuits;
- custom power supplies; and
- custom-tooled sheet metal.

Our principal limited-source components include:

- flash memory;
- DRAMs and SRAMs;
- printed circuit boards;
- CAMs;
- connectors; and
- timing circuits (crystals & clocks).

We use our forecast of expected demand to determine our material requirements. Lead times for materials and components we order vary significantly, and depend on factors such as the specific supplier, contract terms and demand for a component at a given time. If forecasts exceed orders, we may have excess and/or obsolete inventory, which could have a material adverse effect on our operating results and financial condition. If orders exceed forecasts, we may have inadequate supplies of certain materials and components, which could have a material adverse effect on our ability to meet customer delivery requirements and to recognize revenue.

Our top ten suppliers accounted for a significant portion of our purchases during the quarter. Given the significant concentration of our supply chain, particularly with certain sole or limited source providers, any significant interruption by any of the key suppliers or a termination of a relationship could temporarily disrupt our operations. Additionally, our operations are materially dependent upon the continued market acceptance and quality of these manufacturers' products and their ability to continue to manufacture products that are competitive and that comply with laws relating to environmental and efficiency standards. Our inability to obtain products from one or more of these suppliers or a decline in market acceptance of these suppliers' products could have a material adverse effect on our business, results of operations and financial condition. Other than pursuant to an agreement with a key component supplier which includes pricing based on a minimum volume commitment, generally we do not have agreements fixing long-term prices or minimum volume requirements from suppliers. From time to time we have experienced shortages and allocations of certain components, resulting in delays in filling orders. Qualifying new suppliers to compensate for such shortages may be time-consuming and costly and may increase the likelihood of errors in design or production. In addition, during the development of our products, we have experienced delays in the prototyping of our chipsets, which in turn has led to delays in product introductions. Similar delays may occur in the future. Furthermore, the performance of the components from our suppliers as incorporated in our products may not meet the quality requirements of our customers.

To successfully manage our business or achieve our goals, we must attract, retain, train, motivate, develop and promote key employees, and failure to do so can harm us.

Our success depends to a significant degree upon the continued contributions of our key management, engineering, sales and marketing, service and operations personnel, many of whom would be difficult to replace. We have experienced and may in the future experience significant turnover in our executive personnel. Changes in our management and key employees could affect our financial results, and a recent reduction in force, may impede our ability to attract and retain highly skilled personnel. We believe our future success will also depend in large part upon our ability to attract and retain highly skilled managerial, engineering, sales and marketing, service, finance and operations personnel. The market for such personnel is competitive in certain regions for certain types of technical skills.

A number of our employees are foreign nationals who rely on visas and entry permits in order to legally work in the United States and other countries. In recent years, the United States has increased the level of scrutiny in granting H-1(B), L-1 and other business visas. In addition, the current U.S. administration has indicated that immigration reform is a priority. Compliance with United States immigration and labor laws could require us to incur additional unexpected labor costs and expenses or could restrain our ability to retain skilled professionals. Any of these restrictions could have a material adverse effect on our business, results of operations and financial conditions.

Our stock price has been volatile in the past and may significantly fluctuate in the future.

In the past, our common stock price has fluctuated significantly. This could continue as we or our competitors announce new products, our results or those of our customers or competition fluctuate, conditions in the networking or semiconductor industry change, or when investors, change their sentiment toward stocks in the networking technology sector.

In addition, fluctuations in our stock price and our price-to-earnings multiple may make our stock attractive to momentum, hedge or day-trading investors who often shift funds into and out of stock rapidly, exacerbating price fluctuations in either direction, particularly when viewed on a quarterly basis. These fluctuations may adversely affect the trading price or liquidity of our common stock. Some companies, including us, that have had volatile market prices for their securities have had securities class action lawsuits filed against them. If a suit were filed against us, regardless of its merits or outcome, it could result in substantial costs and divert management's attention and resources.

Intense competition in the market for networking equipment and Cloud platform companies could prevent us from increasing revenue and attaining profitability.

The market for network switching solutions is intensely competitive and dominated primarily by Cisco Systems Inc., Dell, Inc. Hewlett-Packard Enterprise Company, Huawei Technologies Co. Ltd., Arista Networks, Inc., CommScope and Juniper Networks, Inc. Most of our competitors have longer operating histories, greater name recognition, larger customer bases, broader product lines and substantially greater financial, technical, sales, marketing and other resources. As a result, these competitors are able to devote greater resources to the development, promotion, sale and support of their products. In addition, they have larger distribution channels, stronger brand names, access to more customers, a larger installed customer base and a greater ability to make attractive offers to channel partners and customers than we do. Further, many of our competitors have made substantial investments in hardware networking capabilities and offerings. These competitors may be able to gain market share by leveraging their investments in hardware networking capabilities to attract customers at lower prices or with greater synergies. Some of our customers may question whether we have the financial resources to complete their projects and future service commitments.

We may also face increased competition from both traditional networking solutions companies and Cloud platform companies offering IaaS and PaaS products to enterprise customers. In particular, AWS, Microsoft Azure and the Google Cloud Platform may provide enterprise customers with a cloud-based platform of data center compute and networking services.

For example, we have encountered, and expect to continue to encounter in the future, many potential customers who are confident in and committed to the product offerings of our principal competitors. Accordingly, these potential customers may not consider or evaluate our products. When such potential customers have considered or evaluated our products, we have in the past lost, and expect in the future to lose, sales to some of these customers as large competitors have offered significant price discounts to secure these sales.

The pricing policies of our competitors impact the overall demand for our products and services. Some of our competitors are capable of operating at significant losses for extended periods of time, increasing pricing pressure on our products and services. If we do not maintain competitive pricing, the demand for our products and services, as well as our market share, may decline. From time to time, we may lower the prices of our products and services in response to competitive pressure. When this happens, if we are unable to reduce our component costs or improve operating efficiencies, our revenue and gross margins will be adversely affected.

Industry consolidation may lead to stronger competition and may harm our operating results.

There has been a trend toward industry consolidation in our markets for several years. We expect this trend to continue as companies attempt to strengthen or hold their market positions in an evolving industry and as companies are acquired or are unable to continue operations. For example, some of our current and potential competitors for enterprise data center business have made acquisitions or announced new strategic alliances, designed to position them with the ability to provide end-to-end technology solutions for the enterprise data center. Companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us. We believe industry consolidation may result in stronger competitors that are better able to compete as sole-source vendors for customers. This could lead to more variability in our operating results and could have a material adverse effect on our business, operating results, and financial condition. Furthermore, particularly in the service provider market, rapid consolidation will lead to fewer customers, with the effect that loss of a major customer could have a material impact on results not anticipated in a customer marketplace composed of more numerous participants.

We intend to invest in engineering, sales, services, marketing and manufacturing on a long-term basis, and delays or inability to attain the expected benefits may result in unfavorable operating results.

While we intend to focus on managing our costs and expenses, over the long term, we also intend to invest in personnel and other resources related to our engineering, sales, services, marketing and manufacturing functions as we focus on our foundational priorities, such as leadership in our core products and solutions and architectures for business transformation. We are likely to recognize the costs associated with these 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. If we do not achieve the benefits anticipated from these investments, or if the achievement of these benefits is delayed, our operating results may be adversely affected.

Our success is dependent on our ability to continually introduce new products and features that achieve broad market acceptance.

The network equipment market is characterized by rapid technological progress, frequent new product introductions, changes in customer requirements and evolving industry standards. If we do not regularly introduce new products in this dynamic environment, our product lines will become obsolete. These new products must be compatible and inter-operate with products and architectures offered by other vendors. We have and may in the future experience delays in product development and releases, and such delays have and could in the future adversely affect our ability to compete and our operating results.

When we announce new products or product enhancements that have the potential to replace or shorten the life cycle of our existing products, customers may defer or cancel orders for our existing products; in addition, ending sales of existing products may cause customers to cancel or defer orders for our existing products. These actions could have a material adverse effect on our operating results by unexpectedly decreasing sales, increasing inventory levels of older products and exposing us to greater risk of product obsolescence.

Even if we introduce new switching products, alternative technologies could achieve widespread market acceptance and displace the Ethernet technology on which we have based our product architecture. For example, developments in routers and routing software could significantly reduce demand for our products. As a result, we may not be able to achieve widespread market acceptance of our current or future products.

If we do not successfully anticipate technological shifts, market needs and opportunities, and develop products, product enhancements and business strategies that meet those technological shifts, needs and opportunities, or if those products are not made available or strategies are not executed in a timely manner or do not gain market acceptance, we may not be able to compete effectively and our ability to generate revenues will suffer.

The markets for our products are constantly evolving and characterized by rapid technological change, frequent product introductions, changes in customer requirements, and continuous pricing pressures. We cannot guarantee that we will be able to anticipate future technological shifts, market needs and opportunities or be able to develop new products, product enhancements and business strategies to meet such technological shifts, needs or opportunities in a timely manner or at all. For example, the move from Wi-Fi 5 to Wi-Fi 6 infrastructures has been receiving considerable attention. In our view, it will take several years to see the majority of customers fully embrace Wi-Fi 6 technology, and we believe the successful Wi-Fi 6 products and solutions will combine hardware, software, cloud, machine learning, and artificial intelligence elements together to provide value in addition to the chipset evolution itself. If we fail to anticipate market requirements or opportunities or fail to develop and introduce new products, product enhancements or business strategies to meet those requirements or opportunities in a timely manner, it could cause us to lose customers, and such failure could substantially decrease or delay market acceptance and sales of our present and future products and services, which would significantly harm our business, financial condition, and results of operations. Even if we are able to anticipate, develop and commercially introduce new products and enhancements, we cannot assure that new products or enhancements will achieve widespread market acceptance.

Our employees may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements, which could have a material adverse effect on our business.

We are exposed to the risk of employee fraud or other misconduct. Misconduct by employees could include intentional failures to:

- comply with securities laws and regulations or similar regulations of comparable foreign regulatory authorities;
- comply with export controls and sanctions laws and regulations or similar regulations of comparable foreign regulatory authorities;
- comply with anti-corruption laws and regulations or similar regulations of comparable foreign regulatory authorities;
- comply with internal controls that we have established;
- report financial information or data accurately; or
- disclose unauthorized activities to us.

The precautions we take to detect and prevent misconduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business and results of operations, including the imposition of significant fines or other sanctions.

The cloud networking market is still in its early stages and is rapidly evolving. If this market does not evolve as we anticipate, or our target end customers do not adopt our cloud networking solutions, we may not be able to compete effectively, and our ability to generate revenue will suffer.

The cloud networking market is the fastest growing segment of the networking industry, with an expected compound annual growth rate of 15% year over year compared to low single digits elsewhere, and this projected data led us to acquire Aerohive Networks in August 2019. The market demand for cloud networking solutions has increased in recent years as end customers have deployed larger networks and have increased the use of virtualization and cloud computing. Our success may be impacted by our ability to provide successful cloud networking solutions that address the needs of our channel partners and end customers more effectively and economically than those of other competitors or existing technologies. If the cloud networking solutions market does not develop in the way we anticipate, if our solutions do not offer significant benefits compared to competing legacy network switching products or if end customers do not recognize the benefits that our solutions provide, then our potential for growth in this cloud market could be adversely affected.

Claims of infringement by others may increase and the resolution of such claims may adversely affect our operating results.

Our industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patents, copyrights (including rights to "open source" software) and other intellectual property rights. As we have grown it has, and may continue to, experience greater revenues and increased public visibility, which may cause competitors, customers, and governmental authorities to be more likely to initiate litigation against us. Because of the existence of a large number of patents in the networking field, the secrecy of some pending patents and the issuance of new patents at a rapid pace, it is not possible to determine in advance if a product or component might infringe the patent rights of others. Because of the potential for courts awarding substantial damages, the lack of predictability of such awards and the high legal costs associated with the defense of such patent infringement matters that would be expended to prove lack of infringement, it is not uncommon for companies in our industry to settle even potentially unmeritorious claims for very substantial amounts. Furthermore, the entities with whom we have or could have disputes or discussions include entities with extensive patent portfolios and substantial financial assets. These entities are actively engaged in programs to generate substantial revenue from their patent portfolios and are seeking or may seek significant payments or royalties from us and others in our industry.

Litigation resulting from claims that we are infringing the proprietary rights of others has resulted and could in the future result in substantial costs and a diversion of resources and could have a material adverse effect on our business, financial condition and results of operations. We previously received notices from entities alleging that we were infringing their patents and have been party to patent litigation in the past.

Without regard to the merits of these or any other claims, an adverse court order or a settlement could require us, among other actions, to:

- stop selling our products that incorporate the challenged intellectual property;
- obtain a royalty bearing license to sell or use the relevant technology, and that license may not be available on reasonable terms or available at all;
- pay damages;
- redesign those products that use the disputed technology; or
- face a ban on importation of our products into the United States.

In addition, our products include so-called “open source” software. Open source software is typically licensed for use at no initial charge, but imposes on the user of the open source software certain requirements to license to others both the open source software as well as modifications to the open source software under certain circumstances. Our use of open source software subjects us to certain additional risks for the following reasons:

- open source license terms may be ambiguous and may result in unanticipated obligations regarding the licensing of our products and intellectual property;
- open source software cannot be protected under trade secret law;
- suppliers of open-source software do not provide the warranty, support and liability protections typically provided by vendors who offer proprietary software; and
- it may be difficult for us to accurately determine the developers of the open source code and whether the acquired software infringes third-party intellectual property rights.

We believe even if we do not infringe the rights of others, we will incur significant expenses in the future due to defense of legal claims, disputes or licensing negotiations, though the amounts cannot be determined. These expenses may be material or otherwise adversely affect our operating results.

Our credit facilities impose financial and operating restrictions on us.

Our debt instruments, including our Credit Agreement, impose, and the terms of any future debt may impose, operating and other restrictions on us. These restrictions could affect, and in many respects limit or prohibit, among other items, our ability to:

- incur additional indebtedness;
- create liens;
- make investments;
- enter into transactions with affiliates;
- sell assets;
- guarantee indebtedness;
- declare or pay dividends or other distributions to stockholders;
- repurchase equity interests;
- change the nature of our business;
- enter into swap agreements;
- issue or sell capital stock of certain of our subsidiaries; and
- consolidate, merge, or transfer all or substantially all of our assets and the assets of our subsidiaries on a consolidated basis.

The agreements governing our Credit Agreement also require us to achieve and maintain compliance with specified financial ratios. A breach of any of these restrictive covenants or the inability to comply with the required financial ratios could result in a default under our debt instruments. If any such default occurs, the lenders under our Credit Agreement may elect to declare all outstanding borrowings, together with accrued interest and other fees, to be immediately due and payable. The lenders under our credit agreement also have the right in these circumstances to terminate any commitments they have to provide further borrowings.

If we fail to meet our payment or other obligations under our Credit Agreement the lenders under such Credit Agreement, as amended, could foreclose on, and acquire control of, substantially all of our assets.

Our Credit Agreement is jointly and severally guaranteed by us and certain of our subsidiaries. Borrowings under our Credit Agreement are secured by liens on substantially all of our assets, including the capital stock of certain of our subsidiaries, and the assets of our subsidiaries that are loan party guarantors. If we are unable to repay outstanding borrowings when due, the lenders under our Credit Agreement will have the right to proceed against this pledged capital stock and take control of substantially all of our assets.

Our operating results may be negatively affected by legal proceedings.

We have in the past, currently are and will likely in the future pursue or be subject to claims or lawsuits in the normal course of our business. In addition to the risks related to the intellectual property lawsuits described above, we are currently parties to other litigation as described in Note 8 to our Notes to Consolidated Financial Statements included elsewhere in this Annual Report. Regardless of the result, litigation can be expensive, lengthy and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict. An unfavorable resolution of a lawsuit in which we are a defendant could result in a court order against us or payments to other parties that would have an adverse effect on our business, results of operations or financial condition. Even if we are successful in prosecuting claims and lawsuits, we may not recover damages sufficient to cover our expenses incurred to manage, investigate and pursue the litigation. In addition, subject to certain limitations, we may be obligated to indemnify our current and former customers, suppliers, directors, officers and employees in certain lawsuits. We may not have adequate insurance coverage to cover all of our litigation costs and liabilities.

Failure to protect our intellectual property could affect our business.

We rely on a combination of patent, copyright, trademark and trade secret laws and restrictions on disclosure to protect our intellectual property rights. However, we cannot ensure that the actions we have taken will adequately protect our intellectual property rights or that other parties will not independently develop similar or competing products that do not infringe on our patents. We generally enter into confidentiality, invention assignment or license agreements with our employees, consultants and other third parties with whom we do business, and control access to and distribution of our intellectual property and other proprietary information. Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy or otherwise misappropriate or use our products or technology, which would adversely affect our business.

When our products contain undetected errors, we may incur significant unexpected expenses and could lose sales.

Network products frequently contain undetected errors when new products or new versions or updates of existing products are released to the marketplace. In the past, we have experienced such errors in connection with new products and product updates. We have experienced component problems in prior years that caused us to incur higher than expected warranty, service costs and expenses, and other related operating expenses. In the future, we expect that, from time to time, such errors or component failures will be found in new or existing products after the commencement of commercial shipments. These problems may have a material adverse effect on our business by causing us to incur significant warranty, repair and replacement costs, diverting the attention of our engineering personnel from new product development efforts, delaying the recognition of revenue and causing significant customer relations problems. Further, if products are not accepted by customers due to such defects, and such returns exceed the amount we accrued for defective returns based on our historical experience, our operating results would be adversely affected.

Our products must successfully inter-operate with products from other vendors. As a result, when problems occur in a network, it may be difficult to identify the sources of these problems. The occurrence of system errors, whether or not caused by our products, could result in the delay or loss of market acceptance of our products and any necessary revisions may cause us to incur significant expenses. The occurrence of any such problems would likely have a material adverse effect on our business, operating results and financial condition.

We must continue to develop and increase the productivity of our indirect distribution channels to increase net revenue and improve our operating results.

Our distribution strategy focuses primarily on developing and increasing the productivity of our indirect distribution channels. If we fail to develop and cultivate relationships with significant channel partners, or if these channel partners are not successful in their sales efforts, sales of our products may decrease and our operating results could suffer. Many of our channel partners also sell products from other vendors that compete with our products. Our channel partners may not continue to market or sell our products effectively or to devote the resources necessary to provide us with effective sales, marketing and technical support. We may not be able to successfully manage our sales channels or enter into additional reseller and/or distribution agreements. Our failure to do any of these could limit our ability to grow or sustain revenue.

Our operating results for any given period have and will continue to depend to a significant extent on large orders from a relatively small number of channel partners and other customers. However, we do not have binding purchase commitments from any of them. A substantial reduction or delay in sales of our products to a significant reseller, distributor or other customer could harm our business, operating results and financial condition because our expense levels are based on our expectations as to future revenue and to a large extent are fixed in the short term. Under specified conditions, some third-party distributors are allowed to return products to us and unexpected returns could adversely affect our results.

The sales cycle for our products is long and we may incur substantial non-recoverable expenses or devote significant resources to sales that do not occur when anticipated.

The purchase of our products represents a significant strategic decision by a customer regarding its communications infrastructure. The decision by customers to purchase our products is often based on the results of a variety of internal procedures associated with the evaluation, testing, implementation and acceptance of new technologies. Accordingly, the product evaluation process frequently results in a lengthy sales cycle, typically ranging from three months to longer than a year, and as a result, our ability to sell products is subject to a number of significant risks, including risks that:

- budgetary constraints and internal acceptance reviews by customers will result in the loss of potential sales;
- there may be substantial variation in the length of the sales cycle from customer to customer, making decisions on the expenditure of resources difficult to assess;
- we may incur substantial sales and marketing expenses and expend significant management time in an attempt to initiate or increase the sale of products to customers, but not succeed;
- if a sales forecast from a specific customer for a particular quarter is not achieved in that quarter, we may be unable to compensate for the shortfall, which could harm our operating results; and
- downward pricing pressures could occur during the lengthy sales cycle for our products.

Failure to successfully expand our sales and support teams or educate them in regard to technologies and our product families may harm our operating results.

The sale of our products and services requires a concerted effort that is frequently targeted at several levels within a prospective customer's organization. We may not be able to increase net revenue unless we expand our sales and support teams in order to address all of the customer requirements necessary to sell our products.

We cannot assure that we will be able to successfully integrate employees into our Company or to educate and train current and future employees in regard to rapidly evolving technologies and our product families. A failure to do so may hurt our revenue growth and operating results.

Failure of our products to comply with evolving industry standards and complex government regulations may adversely impact our business.

If we do not comply with existing or evolving industry standards and government regulations, we may not be able to sell our products where these standards or regulations apply. The network equipment industry in which we compete is characterized by rapid changes in technology and customers' requirements and evolving industry standards. As a result, our success depends on:

- the timely adoption and market acceptance of industry standards, and timely resolution of conflicting U.S. and international industry standards; and
- our ability to influence the development of emerging industry standards and to introduce new and enhanced products that are compatible with such standards.

In the past, we have introduced new products that were not compatible with certain technological standards, and in the future, we may not be able to effectively address the compatibility and interoperability issues that arise as a result of technological changes and evolving industry standards.

Our products must also comply with various U.S. federal government regulations and standards defined by agencies such as the Federal Communications Commission, standards established by governmental authorities in various foreign countries and recommendations of the International Telecommunication Union. In some circumstances, we must obtain regulatory approvals or certificates of compliance before we can offer or distribute our products in certain jurisdictions or to certain customers. Complying with new regulations or obtaining certifications can be costly and disruptive to our business.

If we do not comply with existing or evolving industry standards or government regulations, we will not be able to sell our products where these standards or regulations apply, which may prevent us from sustaining our net revenue or achieving profitability.

If we do not adequately manage and evolve our financial reporting and managerial systems and processes, our ability to manage and grow our business may be harmed.

Our ability to successfully implement our business plan and comply with regulations requires an effective planning and management process. We need to ensure that any businesses acquired, including Aerohive, are appropriately integrated in our financial systems. We need to continue improving our existing, and implement new, operational and financial systems, procedures and controls. . Any delay in the implementation of, or disruption in the integration of acquired businesses, or delay and disruption in the transition to, new or enhanced systems, procedures or controls, could harm our ability to record and report financial and management information on a timely and accurate basis, or to forecast future results.

Recent U.S. tax legislation may materially adversely affect our financial condition, results of operations and cash flows.

U.S. tax legislation has significantly changed the U.S. federal income taxation of U.S. corporations, including by reducing the U.S. corporate income tax rate, limiting interest deductions, permitting immediate expensing of certain capital expenditures, adopting elements of a territorial tax system, imposing a one-time transition tax (or "repatriation tax") on all undistributed earnings and profits of certain U.S.-owned foreign corporations, revising the rules governing net operating losses and the rules governing foreign tax credits, and introducing new anti-base erosion provisions. Many of these changes are effective immediately, without any transition periods or grandfathering for existing transactions. The legislation is unclear in many respects and could be subject to potential amendments and technical corrections, as well as interpretations and implementing regulations by the Treasury and Internal Revenue Service ("IRS"), any of which could lessen or increase certain adverse impacts of the legislation. In addition, it is unclear how these U.S. federal income tax changes will affect state and local taxation, which often uses federal taxable income as a starting point for computing state and local tax liabilities.

Our analysis and interpretation of this legislation is complete and based on our determination, the reduction of the U.S. corporate income tax rate did not have a materially adverse impact to our earnings given our U.S. valuation allowance. We determined the one-time transition tax did not have a materially adverse impact given our ability to utilize existing tax attributes. An estimate of the impact was recorded in the second quarter of the fiscal year ended June 30, 2018, and a final adjustment to the estimate was recorded in the second quarter of fiscal year ended June 30, 2019 as allowed under the relevant accounting guidance issued by the SEC. We believe the limitation on interest deductions, the expanded limitation on executive compensation deductions and the anti-base erosion provisions in the legislation may negatively impact our cash flows going forward. There may be other material adverse effects resulting from the legislation that we have not yet identified.

Changes in the effective tax rate including from the release of the valuation allowance recorded against our net U.S. deferred tax assets, or adverse outcomes resulting from examination of our income or other tax returns or change in ownership, could adversely affect our results.

Our future effective tax rates may be volatile or adversely affected by changes in our business or U.S. or foreign tax laws, including: the partial or full release of the valuation allowance recorded against our net U.S. deferred tax assets; expiration of or lapses in the research and development tax credit laws; transfer pricing adjustments; tax effects of stock-based compensation; or costs related to restructuring. In addition, we are subject to the examination of our income tax returns by the Internal Revenue Service and other tax authorities. Although we regularly assess the likelihood of adverse outcomes resulting from these examinations to determine the adequacy of our provision for income taxes, there is no assurance that such determinations by us are in fact adequate. Changes in our effective tax rates or amounts assessed upon examination of our tax returns may have a material, adverse impact on our cash flows and our financial condition.

Our future effective tax rate in particular could be adversely affected by a change in ownership pursuant to U.S. Internal Revenue Code Section 382. If a change in ownership occurs, it may limit our ability to utilize our net operating losses to offset our U.S. taxable income. If U.S. taxable income is greater than the change in ownership limitation, we will pay a higher rate of tax with respect to the amount of taxable income that exceeds the limitation. This could have a material adverse impact on our results of operations. On April 26, 2012, we adopted an Amended and Restated Rights Agreement to help protect our assets (the "Rights Agreement"). In general, this does not allow a stockholder to acquire more than 4.95% of our outstanding common stock without a waiver from our board of directors, who must take into account the relevant tax analysis relating to potential limitation of our net operating losses. Our Rights Agreement is effective through May 31, 2019. Our Board of Directors approved renewal through May 31, 2020, subject to ratification by a majority of our stockholders at the next annual shareholders meeting.

Provisions in our charter documents and Delaware law and our adoption of a stockholder rights plan may delay or prevent an acquisition of Extreme, which could decrease the value of our Common Stock.

Our certificate of incorporation and bylaws and Delaware law contain provisions that could make it more difficult for a third party to acquire us without the consent of our Board of Directors. Delaware law also imposes some restrictions on mergers and other business combinations between us and any holder of 15% or more of our outstanding common stock. In addition, our Board of Directors has the right to issue preferred stock without stockholder approval, which could be used to dilute the stock ownership of a potential hostile acquirer. Although we believe these provisions of our certificate of incorporation and bylaws and Delaware law will provide for an opportunity to receive a higher bid by requiring potential acquirers to negotiate with our Board of Directors, these provisions apply even if the offer may be considered beneficial by some of our stockholders.

Our Rights Agreement provides that if a single stockholder (or group) acquires more than 4.95% of our outstanding common stock without a waiver from our Board of Directors, each holder of one share of our common stock (other than the stockholder or group who acquired in excess of 4.95% of our common stock) may purchase a fractional share of our preferred stock that would result in substantial dilution to the triggering stockholder or group. Accordingly, although this plan is designed to prevent any limitation on the utilization of our net operating losses by avoiding issues raised under Section 382 of the U.S. Internal Revenue Code, the Rights Agreement could also serve as a deterrent to stockholders wishing to effect a change of control.

Compliance with laws, rules and regulations relating to corporate governance and public disclosure may result in additional expenses.

Federal securities laws, rules and regulations, as well as Nasdaq Stock Market rules and regulations, require companies to maintain extensive corporate governance measures, impose comprehensive reporting and disclosure requirements, set strict independence and financial expertise standards for audit and other committee members and impose civil and criminal penalties for companies and their Chief Executive Officers, Chief Financial Officers and directors for securities law violations. These laws, rules and regulations and the interpretation of these requirements are evolving, and we are making investments to evaluate current practices and to continue to achieve compliance, which investments may have a material impact on our financial condition.

We are required to evaluate the effectiveness of our internal control over financial reporting on an annual basis and publicly disclose any material weaknesses in our controls. Any adverse results from such evaluation could result in a loss of investor confidence in our financial reports and significant expense to remediate, and ultimately could have an adverse effect on our stock price.

Section 404 of the Sarbanes-Oxley Act of 2002 requires our management to assess the effectiveness of our internal control over financial reporting and to disclose if such controls were unable to provide assurance that a material error would be prevented or detected in a timely manner. We have an ongoing program to review the design of our internal controls framework in keeping with changes in business needs, implement necessary changes to our controls design and test the system and process controls necessary to comply with these requirements. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within our Company will have been detected. If we or our independent registered public accounting firm identifies material weaknesses in our internal controls, the disclosure of that fact, even if quickly remedied, may cause investors to lose confidence in our financial statements and its stock price may decline.

For example, during our third fiscal quarter ended March 31, 2019, management identified control deficiencies related to the ineffective design of certain process level controls addressing the accuracy of sales orders entered by us. These control design deficiencies arose following an enhancement, implemented during our second fiscal quarter ended December 31, 2018, to our Order Entry system. These deficiencies resulted from inadequate risk assessment associated with the system changes and inadequate communication of those changes to Order Entry personnel. These control deficiencies created a reasonable possibility that a material misstatement to our consolidated financial statements would not be prevented or detected on a timely basis, and accordingly management assessed these control deficiencies as a material weakness.

These control deficiencies resulted in immaterial misstatements to our condensed consolidated financial statements as of and for the three-month period ended December 31, 2018, that were corrected in our condensed consolidated financial statements as of and for the three-month period ended March 31, 2019. As at June 30, 2019, we have remediated this material weakness. Specifically, our remediation plans included (1) redesigning controls to validate all sales orders are processed accurately, and (ii) augmenting user training with respect to the enhancements to the Order Entry system.

We rely on the availability of third-party licenses.

Some of our products are designed to include software or other intellectual property, including open source software, licensed from third parties. It may be necessary in the future to seek or renew licenses relating to various aspects of these products. There can be no assurance that the necessary licenses would be available on acceptable terms, if at all. The inability to obtain certain licenses or other rights or to obtain such licenses or rights on favorable terms, could have a material adverse effect on our business, operating results, and financial condition. Moreover, the inclusion in our products of software or other intellectual property licensed from third parties on a nonexclusive basis could limit our ability to protect our proprietary rights in our products. Further, the failure to comply with the terms of any license, including free open source software, may result in our inability to continue to use such license. Our inability to maintain or re-license any third-party licenses required in our products or our inability to obtain third-party licenses necessary to develop new products and product enhancements, could require us, if possible, to develop substitute technology or obtain substitute technology of lower quality or performance standards or at a greater cost, any of which could delay or prevent product shipment and harm our business, financial condition, and results of operations.

System security risks, data protection breaches, and cyber-attacks could compromise our proprietary information, disrupt our internal operations and harm public perception of our products, which could adversely affect our business.

In the ordinary course of business, we store sensitive data, including intellectual property, our proprietary business information and that of our customers, suppliers and business partners on our networks. In addition, we store sensitive or classified information through cloud-based services that may be hosted by third parties and in data center infrastructure maintained by third parties. The secure maintenance of this information is critical to our operations and business strategy. Increasingly, companies, including us, are subject to a wide variety of attacks on their networks on an ongoing basis. Despite our security measures, our information technology and infrastructure may be vulnerable to penetration or attacks by computer programmers and hackers, or breached due to employee error, malfeasance or other disruptions. In addition, as a provider of products and services to the government, our products and services may be the targets of cyber-attacks that attempted to sabotage or otherwise disable them, or our cybersecurity and other products and services ultimately may not be able to effectively detect, prevent, or protect against or otherwise mitigate losses from all cyber-attacks. Any such breach could compromise our networks, creating system disruptions or slowdowns and exploiting security vulnerabilities of our products, and the information stored on our networks could be accessed, publicly disclosed, lost or stolen, which could subject us to liability to our customers, suppliers, business partners and others, could require significant management attention and resources, could result in the loss of business, regulatory actions and potential liability, and could cause us reputational and financial harm. In addition, sophisticated hardware and operating system software and applications that we produce or procure from third parties may contain defects in design or manufacture, including "bugs" and other problems that could unexpectedly interfere with the operation of our networks. This can be true even for “legacy” products that have been determined to have reached an end of life engineering status but will continue to operate for a limited amount of time.

If an actual or perceived breach of network security occurs in our network or in the network of a customer of our networking products, regardless of whether the breach is attributable to our products, the market perception of the effectiveness of our products could be harmed. In addition, the economic costs to us to eliminate or alleviate cyber or other security problems, bugs, viruses, worms, malicious software systems and security vulnerabilities could be significant and may be difficult to anticipate or measure. Because the techniques used by computer programmers and hackers, many of whom are highly sophisticated and well-funded, to access or sabotage networks change frequently and generally are not recognized until after they are used, we may be unable to anticipate or immediately detect these techniques. This could impede our sales, manufacturing, distribution or other critical functions, which could adversely affect our business.

Market conditions and changes in the industry could lead to discontinuation of our products or businesses resulting in asset impairments.

In response to changes in industry and market conditions, we may be required to strategically realign our resources and consider restructuring, disposing of, or otherwise exiting businesses. Any decision to limit investment in or dispose of or otherwise exit businesses may result in the recording of special charges, such as inventory and technology-related write-offs, workforce reduction costs, charges relating to consolidation of excess facilities, or claims from third parties who were resellers or users of discontinued products. Our estimates with respect to the useful life or ultimate recoverability of our carrying basis of assets, including purchased intangible assets, could change as a result of such assessments and decisions. Although in certain instances, our supply agreements allow us the option to cancel, reschedule, and adjust our requirements based on our business needs prior to firm orders being placed, our loss contingencies may include liabilities for contracts that we cannot cancel with contract manufacturers and suppliers. Further, our estimates relating to the liabilities for excess facilities are affected by changes in real estate market conditions.

If our products do not effectively inter-operate with our customers' networks and result in cancellations and delays of installations, our business could be harmed.

Our products are designed to interface with our customers' existing networks, each of which have different specifications and utilize multiple protocol standards and products from other vendors. Many of our customers' networks contain multiple generations of products that have been added over time as these networks have grown and evolved. Our products must inter-operate with many or all of the products within these networks as well as future products in order to meet our customers' requirements. If we find errors in the existing software or defects in the hardware used in our customers' networks, we may need to modify our software networking solutions to fix or overcome these errors so that our products will inter-operate and scale with the existing software and hardware, which could be costly and could negatively affect our business, financial condition, and results of operations. In addition, if our products do not inter-operate with those of our customers' networks, demand for our products could be adversely affected or orders for our products could be canceled. This could hurt our operating results, damage our reputation, and seriously harm our business and prospects. Our revenues may decline as a result of changes in public funding of educational institutions.

A portion of our revenues comes from sales to both public and private K-12 educational institutions. Public schools receive funding from local tax revenue, and from state and federal governments through a variety of programs, many of which seek to assist schools located in underprivileged or rural areas. The funding for a portion of our sales to educational institutions comes from a federal funding program known as the E-Rate program. E-Rate is a program of the Federal Communications Commission that subsidizes the purchase of approved telecommunications, Internet access, and internal connection costs for eligible public educational institutions. The E-Rate program, its eligibility criteria, the timing and specific amount of federal funding actually available and which Wi-Fi infrastructure and product sectors will benefit, are uncertain and subject to final federal program approval and funding appropriation continues to be under review by the Federal Communications Commission, and we cannot assure that this program or its equivalent will continue, and as a result, our business may be harmed. Furthermore, if state or local funding of public education is significantly reduced because of legislative or policy changes or by reductions in tax revenues due to changing economic conditions, our sales to educational institutions may be negatively impacted by these changed conditions. Any reduction in spending on information technology systems by educational institutions would likely materially and adversely affect our business and results of operations. This is a specific example of the many factors which add additional uncertainty to our future revenue from our end-customers in the education sector.

Our headquarters and some significant supporting businesses are located in Northern California and other areas subject to natural disasters that could disrupt our operations and harm our business.

Our corporate headquarters are located in Silicon Valley in Northern California. Historically, this region as well as our R&D centers in North Carolina and New Hampshire have been vulnerable to natural disasters and other risks, such as earthquakes, fires, floods and tropical storms, which at times have disrupted the local economy and posed physical risks to our property. We have contract manufacturers located in Taiwan and Mexico where similar natural disasters and other risks may disrupt the local economy and pose physical risks to our property and the property of our contract manufacturer.

In addition, the continued threat of terrorism and heightened security and military action in response to this threat, or any future acts of terrorism, may cause further disruptions to the economies of the United States and other countries. If such disruptions result in delays or cancellations of customer orders for our products, our business and operating results will suffer.

Item 1B. *Unresolved Staff Comments*

None.

Item 2. *Properties*

Our corporate headquarters is located in San Jose, California where we currently lease approximately 185,000 square feet of space under a lease agreement that expires in fiscal year 2027.

In addition to our headquarters in San Jose, we lease additional sites in the United States, including facilities in Salem, New Hampshire and Morrisville/Raleigh, North Carolina for research and development, sales and marketing and administrative offices. Outside the United States, we also lease office space in various other international geographic locations for research and development, sales and service personnel and administration in other Americas, EMEA and APAC, including Ottawa, Canada, Bangalore, India, Chennai, India, Markham, Canada, Reading, United Kingdom and Shannon, Ireland.

As of June 30, 2019, we have leased approximately 1.0 million square feet of space with various expiration dates between fiscal year 2020 and fiscal 2028. We believe that our current facilities are sustainable and adequate to meet our current needs and the productive capacity of such facilities is substantially being utilized or we have plans to utilize such capacity.

Item 3. *Legal Proceedings*

The information set forth under the heading "Legal Proceedings" in Note 8. *Commitments and Contingencies*, in Notes to Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K, is incorporated herein by reference.

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***

Common Stock Market and Dividends

Our common stock trades on the Nasdaq Global Market and commenced trading on Nasdaq on April 9, 1999 under the symbol "EXTR".

As of August 23, 2019, there were 182 stockholders of record of our common stock. Because many of our shares of common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders. We have never declared or paid cash dividends on our capital stock and do not anticipate paying any cash dividends in the foreseeable future.

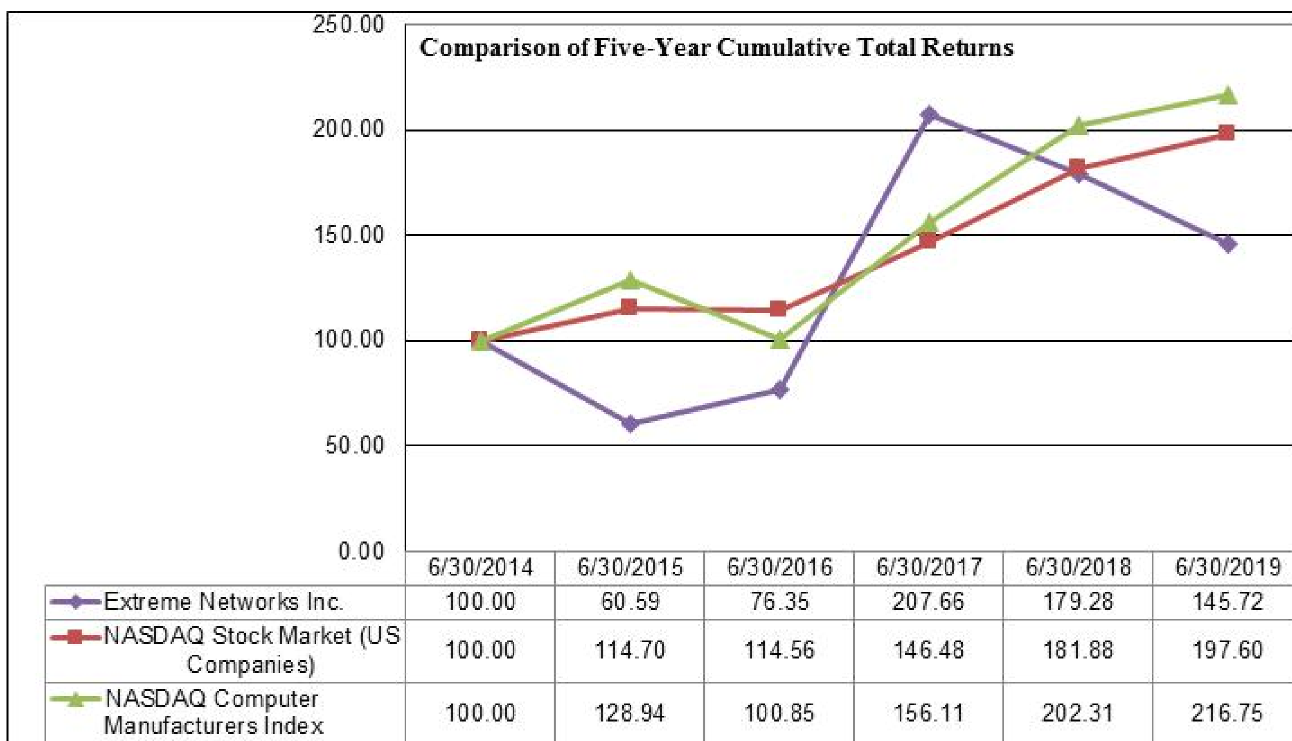
Certain information regarding our equity compensation plan(s) as required by Part II is incorporated by reference from our definitive Proxy Statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for our year ended June 30, 2019 Annual Meeting of Stockholders not later than 120 days after the end of the fiscal year covered by this report.

STOCK PRICE PERFORMANCE GRAPH

Set forth below is a stock price performance graph comparing the annual percentage change in the cumulative total return on our common stock with the cumulative total returns of the CRSP Total Return Index for The Nasdaq Stock Market (U.S. companies) and the Nasdaq Computer Manufacturers Securities for the period commencing July 1, 2014 and ending on June 30, 2019. The comparisons in the graph below are based on historical data and are not intended to forecast the possible future performance of our common stock.

Comparison of Five-Year Cumulative Total Returns

Performance Graph for Extreme Networks, Inc.



	6/30/2014	6/30/2015	6/30/2016	6/30/2017	6/30/2018	6/30/2019
Extreme Networks Inc.	100.00	60.59	76.35	207.66	179.28	145.72
NASDAQ Stock Market (US Companies)	100.00	114.70	114.56	146.48	181.88	197.60
NASDAQ Computer Manufacturers Index	100.00	128.94	100.85	156.11	202.31	216.75

Data and graph are calculated from CRSP Total Return Index for the Nasdaq Stock Market (US Companies) and Nasdaq Computer Manufacturers Securities, Center for Research in Security Prices (CRSP), Booth School of Business, and The University of Chicago. Used with permission. All rights reserved.

Item 6. ***Selected Financial Data***

The following table sets forth selected consolidated financial data for each of the fiscal years ended June 30, 2019, 2018, 2017, 2016 and 2015 derived from the Company's audited financial statements (in thousands, except per share amounts). The consolidated financial data as of and for the years ended June 30, 2015 are derived from the audited financial statements which have not been adjusted for the adoption of Accounting Standards update 2014-09, *Revenue from Contracts with Customers (Topic 606).* These tables should be reviewed in conjunction with the Consolidated Financial Statements in Item 8 and related Notes, as well as Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations." Historical results may not be indicative of future results.

	Year Ended June 30,				
	2019	2018	2017	2016	2015
Consolidated Statements of Operations Data:					
Net revenues	$ 995,789	$ 983,142 (2)	$ 607,084	$ 519,834	$ 552,940
Operating income (loss) (1)	$ (14,726)	$ (38,210)	$ 6,040	$ (30,029)	$ (62,994)
Net loss	$ (25,853)	$ (46,792)	$ (1,744)	$ (36,363)	$ (71,643)
Net loss per share – basic	$ (0.22)	$ (0.41)	$ (0.02)	$ (0.35)	$ (0.72)
Net loss per share – diluted	$ (0.22)	$ (0.41)	$ (0.02)	$ (0.35)	$ (0.72)
Shares used in per share calculation – basic	117,954	114,221	108,273	103,074	99,000
Shares used in per share calculation – diluted	117,954	114,221	108,273	103,074	99,000

(1) Operating income (loss) include the following operating expenses (in thousands):

	Year Ended June 30,				
	2019	2018	2017	2016	2015
Acquisition and integration costs, net of bargain purchase gain	$ 3,444	$ 53,900	$ 13,105	$ 1,145	$ 10,205
Restructuring charge, net of reversals	$ 5,090	$ 8,140	$ 8,896	$ 10,990	$ 9,819
Amortization of intangibles	$ 6,346	$ 8,715	$ 8,702	$ 17,001	$ 17,869

(2) The significant increase in net revenues during the year ended June 30, 2018 was primarily due to the acquisitions of the Campus Fabric and Data Center Businesses.

	As of June 30,				
	2019	2018	2017	2016	2015
Consolidated Balance Sheets Data:					
Cash, cash equivalents and short-term investments	$ 169,607	$ 122,598	$ 130,450	$ 94,122	$ 76,225
Inventories	$ 63,589	$ 63,867 (1)	$ 47,410	$ 41,345	$ 58,014
Total assets	$ 756,874	$ 770,248 (1)	$ 459,700	$ 360,827	$ 428,660
Deferred revenue, net	$ 203,242	$ 174,525 (1)	$ 104,341	$ 94,860	$ 99,782
Debt, net of issuance costs	$ 178,750	$ 197,756 (1)	$ 92,702	$ 55,074	$ 66,400
Other long-term liabilities	$ 56,107	$ 65,235 (1)	$ 15,102	$ 13,328	$ 10,264
Common stock and capital in excess of par value	$ 986,894	$ 942,397	$ 909,155	$ 884,706	$ 865,382
Accumulated deficit	$ (853,434)	$ (828,078)	$ (781,286)	$ (779,542)	$ (759,856)

(1) The significant increases in inventories, total assets, deferred revenue, debt and other long-term liabilities during the year ended June 30, 2018 was primarily due to the acquisitions of the Campus Fabric and Data Center Businesses.

Quarterly Financial Data (Unaudited)

Quarterly results for the years ended June 30, 2019 and 2018 are as follow (in thousands, except per share amounts).

	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018
Net revenues	$ 252,359	$ 250,864	$ 252,680	$ 239,886
Gross profit	$ 138,946	$ 138,919	$ 141,299	$ 132,071
Net (loss) income (1)	$ (17,055)	$ (6,932)	$ 7,199	$ (9,065)
Net (loss) income per share – basic	$ (0.14)	$ (0.06)	$ 0.06	$ (0.08)
Net (loss) income per share – diluted	$ (0.14)	$ (0.06)	$ 0.06	$ (0.08)

	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
Net revenues	$ 278,300	$ 262,004	$ 231,123	$ 211,715
Gross profit	$ 150,167	$ 142,983	$ 128,986	$ 112,381
Net income (loss) (1)	$ (5,632)	$ (13,613)	$ (31,923)	$ 4,376
Net income (loss) per share – basic	$ (0.05)	$ (0.12)	$ (0.28)	$ 0.04
Net income (loss) per share – diluted	$ (0.05)	$ (0.12)	$ (0.28)	$ 0.04

Quarterly and year-to-date computations of per share amounts are made independently. Therefore, the sum of per share amounts for the quarters may not agree with the per share amounts for the year.

(1) Net income (loss) include the following operating expenses (in thousands):

	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018
Acquisition and integration costs, net of bargain purchase gain	$ 831	$ —	$ 67	$ 2,546
Restructuring charge, net of reversals	$ 3,808	$ —	$ 474	$ 808
Amortization of intangibles	$ 1,338	$ 1,292	$ 1,575	$ 2,141

	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
Acquisition and integration costs	$ 6,225	$ 9,316	$ 34,115	$ 4,244
Restructuring charge, net of reversals	$ 3,220	$ 4,920	$ —	$ —
Amortization of intangibles	$ 2,254	$ 2,101	$ 2,746	$ 1,614

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

Business Overview

The following discussion should be read with the Consolidated Financial Statements and the related notes in Item 8 of Part II of this Report.

The following discussion is based upon our Consolidated Financial Statements included elsewhere in this Report, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. In the course of operating our business, we routinely make decisions as to the timing of the payment of invoices, the collection of receivables, the manufacturing and shipment of products, the fulfillment of orders, the purchase of supplies, and the building of inventory and service parts, among other matters. Each of these decisions has some impact on the financial results for any given period. In making these decisions, we consider various factors including contractual obligations, customer satisfaction, competition, internal and external financial targets and expectations, and financial planning objectives. For further information about our critical accounting policies and estimates, see “Critical Accounting Policies and Estimates” section included in this “Management's Discussion and Analysis of Financial Condition and Results of Operations.”

Extreme Networks, Inc., together with its subsidiaries (collectively referred to as “Extreme” and as “we”, “us” and “our”) is a leading provider of networking software, hardware and services and offers related maintenance contracts for extended warranty and maintenance to our enterprise, data center and service provider customers. We were incorporated in California in May 1996 and reincorporated in Delaware in March 1999. Our corporate headquarters are located in San Jose, California. We derive substantially all of our revenue from the sale of our networking software, hardware and services, and related maintenance contracts.

Extreme is a leader in providing software-driven networking solutions for enterprise customers. Providing a combined end-to-end solution from enterprise edge to the cloud, Extreme designs, develops and manufactures wired and wireless network infrastructure equipment and develops the software for network management, policy, analytics, security and access controls. Extreme gives customers and partners the power to mix and match this broad array of software, hardware, and services (including third-party applications) to tailor a solution that can be managed and automated from end-to-end, and calls this customizable portfolio Extreme Elements™.

Enterprise network administrators need to respond to the rapid digital transformational trends of cloud, mobility, big data, social business and the ever-present need for network security. Accelerators such as Internet of Things (“IoT”), artificial intelligence (“AI”), bring your own device (“BYOD”), machine learning, cognitive computing, and robotics add complexity to challenge the capabilities of traditional networks. Technology advances have a profound effect across the entire enterprise network placing unprecedented demands on network administrators to enhance management capabilities, scalability, programmability, agility, and analytics of the enterprise networks they manage.

A trend affecting the Enterprise Network Equipment market is the continued adoption of the cloud-managed enterprise WLAN in the enterprise market. Hybrid cloud is a cloud computing environment which uses a mix of on-premises, private cloud, and third-party, public cloud services with orchestration between the two platforms. We introduced our Cloud offering in 2016 and in August 2019 acquired Aerohive Networks, Inc to enhance our Cloud strategy with a 3rd generation Cloud platform and to accelerate adoption of hybrid cloud networking solutions in the Enterprise. Extreme’s enhanced Cloud solution will be the only offering in the market that seamlessly integrates the cloud with on-premises infrastructures and enables visibility from the edge to everywhere. See Part 1, Item 1. Business, for additional discussion of our business.

Acquisition

Aerohive Networks, Inc

On August 9, 2019 (the “Closing Date”) the Company completed its acquisition of Aerohive, a publicly held network company, for approximately $264 million in cash consideration and assumption of certain employee equity awards.

The business combination was accounted for using the acquisition method of accounting whereby the acquired assets and liabilities of Aerohive are recorded at their respective fair values and added to those of ours including an amount for goodwill representing the difference between the acquisition consideration and the fair value of the identifiable net assets. Results of operations of Aerohive are included in our operations beginning with the Closing Date.

During the fiscal year ended June 30, 2019, the Company recognized related transaction costs of $0.8 million which is included in “Acquisition and integration costs” in the accompanying condensed consolidated statements of operations.

Results of Operations

Following is a summary of our results of operations during fiscal year ended June 30, 2019:

- Net revenue of $995.8 million, increased 1.3% from fiscal 2018 net revenue of $983.1 million.
- Product revenue of $747.6 million, decreased 2.2% from fiscal 2018 product revenue of $764.5 million.
- Service revenue of $248.2 million, increased 13.5% from fiscal 2018 service revenue of $218.7 million.
- Total gross margin of 55.4% of net revenue in fiscal 2019, compared to 54.4% in fiscal 2018.

- Operating loss of $14.7 million, compared to operating loss of $38.2 million in fiscal 2018.
- Net loss was $25.9 million in fiscal 2019, compared to a net loss of $46.8 million in fiscal 2018.
- Cash flow provided by operating activities of $104.9 million, compared to cash flow provided by operating activities of $19.0 million in fiscal 2018, an increase of $85.9 million. Cash was $169.6 million as of June 30, 2019, an increase of $48.5 million compared to the end of fiscal 2018.

Net Revenues

The following table presents net product and service revenue for the fiscal year ended June 30, 2019 , 2018 and 2017 (dollars in thousands):

	Year Ended				Year Ended			
	June 30, 2019	June 30, 2018	$ Change	% Change	June 30, 2018	June 30, 2017	$ Change	% Change
Net Revenues:								
Product	$ 747,571	$ 764,455	$ (16,884)	(2.2)%	$ 764,455	$ 460,425	$ 304,030	66.0%
Percentage of net revenue	*75.1%*	*77.8%*			*77.8%*	*75.8%*		
Service	248,218	218,687	29,531	13.5%	218,687	146,659	72,028	49.1%
Percentage of net revenue	*24.9%*	*22.2%*			*22.2%*	*24.2%*		
Total net revenues	$ 995,789	$ 983,142	$ 12,647	1.3%	$ 983,142	$ 607,084	$ 376,058	61.9%

Product revenue decreased $16.9 million or 2.2% for the year ended June 30, 2019, compared to the corresponding period of fiscal 2018. The decrease in product revenues was driven primarily by a lower overall volume of sales in the Americas attributed to our Data Center Business, but with strengthening sales in our Federal and OEM Data Center sectors. To a lesser extent, there was a modest decrease in product revenue in APAC, and revenue remained consistent in the EMEA region.

Product revenue increased $304.0 million or 66.0% for the year ended June 30, 2018, compared to the corresponding period of fiscal 2017. The increase in product revenues was attributable to growth related to the acquisitions of the WLAN, the Campus Fabric and the Data Center Businesses and to a lesser extent, organic growth of legacy revenues.

Service revenue increased $29.5 million or 13.5% for the year ended June 30, 2019, compared to the corresponding period of fiscal 2018. The increase in service revenue was driven primarily by growth across all regions owing to a higher number of maintenance contracts related to the Data Center Business acquisition.

Service revenue increased $72.0 million or 49.1% for the year ended June 30, 2018, compared to the corresponding period of fiscal 2017. The increase in service revenue was due to the increased number of service contracts acquired as a result of the acquisitions of the WLAN, the Campus Fabric and the Data Center Businesses.

We operate in three regions: Americas, which includes the United States, Canada, Mexico, Central America and South America; EMEA, which includes Europe, Russia, Middle East, and Africa; and APAC which includes Asia Pacific, South Asia, Japan and Australia. The following table presents the total net revenue geographically for the fiscal years 2019, 2018 and 2017 (dollars in thousands):

	Year Ended				Year Ended			
Net Revenues	June 30, 2019	June 30, 2018	$ Change	% Change	June 30, 2018	June 30, 2017	$ Change	% Change
Americas:								
United States	$ 498,705	$ 491,617	$ 7,088	1.4%	$ 491,617	$ 307,980	$ 183,637	59.6%
Other	42,896	44,688	(1,792)	(4.0)%	44,688	24,883	19,805	79.6%
Total Americas	541,601	536,305	5,296	1.0%	536,305	332,863	203,442	61.1%
Percentage of net revenue	54.4%	54.6%			54.6%	54.8%		
EMEA	358,327	354,746	3,581	1.0%	354,746	220,072	134,674	61.2%
Percentage of net revenue	36.0%	36.1%			36.1%	36.3%		
APAC	95,861	92,091	3,770	4.1%	92,091	54,149	37,942	70.1%
Percentage of net revenue	9.6%	9.4%			9.4%	8.9%		
Total net revenues	$ 995,789	$ 983,142	$ 12,647	1.3%	$ 983,142	$ 607,084	$ 376,058	61.9%

We rely upon multiple channels of distribution, including distributors, direct resellers, OEMs and direct sales. Revenue through our distributor channel was 70% of total product revenue in fiscal 2019, 69% of total product revenue in fiscal 2018 and 66% in fiscal 2017.

The level of sales to any one customer, including a distributor, may vary from period to period.

Cost of Revenues and Gross Profit

The following table presents the gross profit on product and service revenue and the gross profit percentage of net revenues for the fiscal years ended 2019, 2018 and 2017 (dollars in thousands):

	Year Ended				Year Ended			
	June 30, 2019	June 30, 2018	$ Change	% Change	June 30, 2018	June 30, 2017	$ Change	% Change
Gross profit:								
Product	$ 401,353	$ 407,393	$ (6,040)	(1.5)%	$ 407,393	$ 240,204	$ 167,189	69.6%
Percentage of product revenue	53.7%	53.3%			53.3%	52.2%		
Service	149,882	127,124	22,758	17.9%	127,124	90,753	36,371	40.1%
Percentage of service revenue	60.4%	58.1%			58.1%	61.9%		
Total gross profit	$ 551,235	$ 534,517	$ 16,718	3.1%	$ 534,517	$ 330,957	$ 203,560	61.5%
Percentage of net revenues	55.4%	54.4%			54.4%	54.5%		

Cost of product revenues includes costs of materials, amounts paid to third-party contract manufacturers, costs related to warranty obligations, charges for excess and obsolete inventory, scrap, distribution, product certification, amortization of developed technology intangibles, royalties under technology license agreements, and internal costs associated with manufacturing overhead, including management, manufacturing engineering, quality assurance, development of test plans, and document control. We outsource substantially all of our manufacturing. We conduct supply chain management, quality assurance, manufacturing, engineering and document control at our facilities in San Jose, California, Salem, New Hampshire, China, and Taiwan.

Product gross profit decreased to $401.4 million for the year ended June 30, 2019, from $407.4 million in the corresponding period of fiscal 2018, primarily due to lower product revenues, higher distribution costs of $10.9 million, warranty charges of $8.2 million, amortization of developed technology intangibles due to the acquisition of the Data Center Business of $2.8 million and additional operations costs of $4.7 million mainly driven by higher personnel costs due to additional headcount. These increases were partially offset by lower product costs due to cost reduction efforts as well as decreased integration costs from acquisitions of $9.5 million.

Product gross profit increased to $407.4 million for the year ended June 30, 2018, from $240.2 million in the corresponding period of fiscal 2017, primarily due to higher revenues attributed to the acquisitions of the WLAN, the Campus Fabric and the Data Center Businesses and lower production costs due to cost reduction efforts. The increases in product gross profit were partially offset by increases in amortization of developed technology intangibles of $9.9 million, warranty charges of $7.2 million, royalty charges of $2.2 million and acquisition and integration related costs of $7.7 million including excess inventory charges related to the discontinuance of certain product lines due to the acquisitions of the Campus Fabric and the Data Center Businesses in excess of the same charges incurred related to the acquisition of the WLAN Business in the corresponding period in fiscal 2017.

Our cost of service revenue consists primarily of labor, overhead, repair and freight costs and the cost of service parts used in providing support under customer maintenance contracts.

Service gross profit increased to $149.9 million for the year ended June 30, 2019, from $127.1 million in the corresponding period of fiscal 2018, primarily due to the acquisition of the Data Center Business as a result of a higher number of maintenance contracts.

Service gross profit increased to $127.1 million for the year ended June 30, 2018, from $90.8 million in the corresponding period of fiscal 2017, primarily due to the acquisitions of the WLAN, Campus Fabric and Data Center Businesses as a result of a higher number of maintenance contracts.

Operating Expenses

The following table presents operating expenses and operating income (dollars in thousands):

	Year Ended				Year Ended			
	June 30, 2019	June 30, 2018	$ Change	% Change	June 30, 2018	June 30, 2017	$ Change	% Change
Research and development	$ 210,132	$ 183,877	$ 26,255	14.3%	$ 183,877	$ 93,724	$ 90,153	96.2%
Sales and marketing	285,326	267,107	18,219	6.8%	267,107	162,626	104,481	64.2%
General and administrative	55,623	50,988	4,635	9.1%	50,988	37,864	13,124	34.7%
Acquisition and integration costs, net of bargain purchase gain	3,444	53,900	(50,456)	(93.6)%	53,900	13,105	40,795	311.3%
Restructuring charges, net of reversals	5,090	8,140	(3,050)	(37.5)%	8,140	8,896	(756)	(8.5)%
Amortization of intangibles	6,346	8,715	(2,369)	(27.2)%	8,715	8,702	13	0.1%
Total operating expenses	$ 565,961	$ 572,727	$ (6,766)	(1.2)%	$ 572,727	$ 324,917	$ 247,810	76.3%

The following table highlights our operating expenses and operating loss as a percentage of net revenues:

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Research and development	21.1%	18.7%	15.4%
Sales and marketing	28.7%	27.2%	26.8%
General and administrative	5.6%	5.2%	6.2%
Acquisition and integration costs, net of bargain purchase gain	0.3%	5.5%	2.2%
Restructuring charges, net of reversals	0.5%	0.8%	1.5%
Amortization of intangibles	0.6%	0.9%	1.4%
Total operating expenses	56.8%	58.3%	53.5%
Operating (loss) income	(1.5)%	(3.9)%	1.0%

Research and Development Expenses

Research and development expenses consist primarily of personnel costs (which consists of compensation, benefits and stock-based compensation), consultant fees and prototype expenses related to the design, development, and testing of our products.

Research and development expenses increased by $26.3 million or 14.3% for fiscal 2019 as compared to fiscal 2018. The increase in research and development expenses during fiscal 2019 was due to $13.4 million related to third-party design and engineering collaboration charges, a $10.8 million increase in personnel costs, $5.5 million in increased facility and information technology costs and $0.9 million in increased supplies and equipment costs offset by a $3.3 million decrease in contract labor and a $1.0 million decrease in travel, recruiting and other costs.

Research and development expenses increased by $90.2 million or 96.2% for fiscal 2018 as compared to fiscal 2017. The increase in research and development expenses during fiscal 2018 was due to higher personnel costs of $67.0 million due to increased headcount related to the acquisitions of the Campus Fabric and Data Center Businesses, $12.5 million in increased facility and information technology costs, $7.4 million in increased supplies and equipment costs and $3.2 million in increased travel and other costs.

Sales and Marketing Expenses

Sales and marketing expenses consist of personnel costs (which consists of compensation, benefits and stock-based compensation) and related expenses for personnel engaged in marketing and sales functions, as well as trade shows and promotional expenses.

Sales and marketing expenses increased by $18.2 million or 6.8% for the year ended June 30, 2019, as compared to the corresponding period of fiscal 2018. The increase in sales and marketing expenses during fiscal 2019 consisted of higher personnel costs of $15.2 million, $2.5 million in increased software, supplies and equipment costs, $1.1 million in increased travel, marketing, meeting and conference costs offset by a $0.6 million decrease in facility and information technology costs.

Sales and marketing expenses increased by $104.5 million or 64.2% for the year ended June 30, 2018, as compared to the corresponding period of fiscal 2017. The increase in sales and marketing expenses during fiscal 2018 was primarily a result of the acquisitions of the Campus Fabric and Data Center Businesses. The increase consisted of higher personnel costs of $74.7 million, $10.8 million in additional professional fees, $7.2 million in increased facility and information technology costs, $6.4 million in increased travel, meeting and conference costs and $5.4 million in supplies and equipment costs.

General and Administrative Expenses

General and administrative expense consists primarily of personnel costs (which consists of compensation, benefits and stock-based compensation), legal and professional service costs, travel and facilities and information technology costs.

General and administrative expenses increased by $4.6 million or 9.1% for the year ended June 30, 2019, as compared to the corresponding period of fiscal 2018. The increase in general and administrative expenses during fiscal 2019 was primarily due to $2.4 million in higher personnel costs, $1.3 million in higher facility and information technology costs, a $1.3 million increase in lease termination costs and a $0.6 million increase in supplier contract termination costs partially offset by a $1.0 million reduction in travel, professional fees and other costs.

General and administrative expenses increased by $13.1 million or 34.7% for the year ended June 30, 2018, as compared to the corresponding period of fiscal 2017. The increase in general and administrative expenses during fiscal 2018 was primarily due to $8.4 million in higher personnel costs, $3.2 million in higher professional fees, $1.4 million in higher bad debts provision and $0.8 million in higher travel and other costs, partially offset by $0.7 million in reduced facility and information technology costs.

Acquisition and Integration Costs, Net of Bargain Purchase Gain

As a result of our acquisitions of the Campus Fabric, Data Center and Capital Financing Businesses in fiscal 2018 and the WLAN Business in fiscal 2017, we incurred $3.4 million, $53.9 million and $13.1 million of acquisition and integration costs, net of bargain purchase gain in fiscal years ended 2019, 2018 and 2017, respectively.

For fiscal 2019, we incurred $3.4 million of operating integration costs related to the acquisitions of the Campus Fabric and Data Center Businesses along with initial costs of the Aerohive acquisition. On August 9, 2019 we completed our acquisition of Aerohive for approximately $264 million in cash consideration and the assumption of certain employee equity awards. See Note 17 – Subsequent Events.

For fiscal 2018, we incurred $12.4 million of acquisition and $6.3 million of integration costs related to the acquisition of the Campus Fabric Business and $36.0 million of acquisition and $4.2 million of integration costs related to the acquisition of the Data Center Business. The Data Center Business acquisition costs includes a $25.0 million consent fee paid to Broadcom, to terminate a previous asset purchase agreement entered into by the Company to purchase the Data Center Business from Broadcom, in anticipation of Broadcom's acquisition of Brocade. The fee was paid to Broadcom to allow the Company to buy the Data Center Business directly from Brocade. We also recorded a gain on bargain purchase of $5.0 million related to the acquisition of the Capital Financing Business.

For fiscal 2017, we incurred $2.1 million of acquisition and $6.6 million of integration costs related to the WLAN Business acquisition. We also incurred acquisition costs of $2.2 million related to our anticipated acquisition of the Campus Fabric Business and $2.2 million for the anticipated acquisition of the Data Center Business.

Restructuring and Related Charges, Net of Reversals

As of June 30, 2019, restructuring liabilities were $5.3 million and consisted primarily of severance and benefits payments and estimated future obligations for non-cancelable lease payments for excess facilities. The restructuring liability is recorded in "Other accrued liabilities" and "Other long-term liabilities" on the consolidated balance sheets. During fiscal years ended 2019, 2018 and 2017, we recorded restructuring charges and related charges, net of reversals, of $5.1 million, $8.1 million and $8.9 million, respectively.

Fiscal year ended 2019

On June 25, 2019, we began executing a reduction-in-force plan (the 2019 Plan) to better align our work force and operating expenses. We recorded $3.7 million related to employee severance and benefits expenses during the year ended June 30, 2019 under the 2019 plan. We also incurred $1.1 million in additional charges related to continuation of earlier actions associated with a reduction-in-force in the fourth quarter of fiscal 2018. We also incurred charges of $0.3 million for changes to estimates for accrued lease costs pertaining to the estimated future obligations for non-cancelable lease payments of excess facilities.

We estimate we will incur additional charges beginning in the fourth quarter of fiscal 2019 through the second quarter of fiscal 2020, inclusive. Costs associated with the 2019 Plan are primarily comprised of employee severance and benefits expenses, relocation of personnel and equipment and exit of excess facilities. The amount and timing of the actual charges are uncertain due to required consultation activities with certain employees as well as compliance with statutory severance requirements in local jurisdictions.

Fiscal year ended 2018

During fiscal 2018, we announced and began executing a reduction-in-force in our third and fourth fiscal quarters as a result of the acquisitions of the Campus Fabric and the Data Center Businesses. We recorded restructuring charges of $7.9 million related to employee severance and benefits expenses during fiscal 2018. We also incurred charges of $0.2 million for changes to our estimates for accrued lease costs pertaining to the estimated future obligations for non-cancelable lease payments of our excess facilities.

Fiscal year ended 2017

Pursuant to the WLAN Business acquisition from Zebra, we assumed a facility lease located at 6480 Via del Oro in San Jose, California ("Via del Oro") and transferred our headquarters from Rio Robles Drive in San Jose, California ("Rio Robles") to Via del Oro. We consolidated our existing workforce from our previous headquarters with employees assumed from Zebra to the Via del Oro site and exited the Rio Robles site on January 31, 2017. Due to our move from the Rio Robles facility and abandonment of all leasehold improvements, we accelerated the amortization of the remaining leasehold improvements for this site over the shortened service period such that the leasehold improvements were fully amortized on the cease-use date. We recorded accelerated amortization expense for the year ended June 30, 2017 of $2.6 million which is reflected in "Restructuring and related charges, net of reversals" in the consolidated statements of operations.

We entered into a sublease agreement related to our Rio Robles facility during the third quarter of fiscal 2017 for the remaining duration of the lease. The sublease resulted in adjustments to the prior estimates for the amount of sublease payments, timing of sublease activities and real estate commissions associated with the sublease. The net adjustments, including modifications to our future obligations for non-cancellable lease payments and related future subleasing income resulted in additional charges of $2.0 million during fiscal 2017. The excess facilities payments will continue through fiscal year 2023.

In anticipation of the acquisitions of Campus Fabric Business and Data Center Business in fiscal 2018, we reoccupied the majority of the previously exited space at our Salem, New Hampshire location during our fiscal fourth quarter to accommodate the growth in headcount and lab facility requirements. This action resulted in a reversal of prior restructuring expense accruals of $1.3 million.

We also implemented a reduction-in-force which affected 90 employees. We recorded severance and benefits charges of $5.6 million during the year ended June 30, 2017. Cash payments of $3.8 million were made by June 30, 2017 with the remainder paid in fiscal 2018.

Amortization of Intangibles

During fiscal years ended 2019, 2018 and 2017, we recorded $6.3 million, $8.7 million and $8.7 million, respectively, of amortization expenses in operating expenses primarily for certain intangibles related to the acquisitions of the Campus Fabric, Data Center and WLAN Businesses and Enterasys. The decrease in amortization expense of $2.4 million in fiscal 2019 from fiscal 2018 was mainly due to the acquired intangibles from the Enterasys acquisition becoming fully amortized.

Interest Income

Interest income was $2.2 million, $2.8 million and $0.7 million in fiscal years ended 2019, 2018 and 2017, respectively, representing a decrease of $0.6 million in fiscal 2019 from fiscal 2018 and an increase of $2.2 million in fiscal 2018 from fiscal 2017. The decrease in fiscal 2019 was due to a $1.6 million decrease in interest income from a long-term note receivable, offset by higher invested funds balances. The increase in fiscal 2018 was due to accretion of interest on a long-term note receivable acquired from the WLAN Business as well as increased interest income on cash balances due to rising market interest rates.

Interest Expense

We incurred $12.6 million, $13.9 million and $4.1 million of interest expense for fiscal 2019, 2018 and 2017, respectively. The decrease in interest expense in fiscal year ended June 30, 2019 was primarily due to lower imputed interest charges associated with various long-term contracts. The increase in interest expense in fiscal 2018 was primarily in connection with the increased balance of our Credit Facility due to the acquisitions of the WLAN, Campus Fabric and Data Center Businesses and accretion of interest expense of $3.1 million associated with the contingent consideration obligations. In addition, we recorded a loss from debt extinguishment of $1.2 million in fiscal 2018 in connection with our 2018 Credit Agreement entered on May 1, 2018. Interest expense for fiscal 2017 was primarily related to borrowings to finance the WLAN business acquisition.

Other (Expense) Income, net

We incurred other expense of $0.8 million, other income of $2.6 million and other expense of less than $0.1 million in fiscal years ended 2019, 2018 and 2017, respectively. The other expense for fiscal 2019 was primarily due to losses on the sale of equity investments. The income for fiscal 2018 was primarily driven by a gain of $4.0 million due to the sale of equity investments, partially offset by foreign exchange losses.

(Benefit) Provision for Income Taxes

We are subject to income taxes in the United States and numerous foreign jurisdictions. Our effective tax rate differs from the newly enacted U.S. federal statutory rate of 21% primarily due to the offsetting impact of i) state taxes, ii) foreign operations, iii) the full valuation of our deferred tax assets in the U.S. and certain foreign jurisdictions and for our fiscal year ended June 30, 2019, iv) the phase in of various provisions of the U.S. Tax Reform Act making our U.S. tax rate for this particular year 0%. For the fiscal years ended 2019, 2018 and 2017, we recorded income tax (benefit) provisions of less than $(0.0) million, $0.1 million and $4.3 million, respectively.

For fiscal 2019, we recorded a tax benefit, offsetting the tax components detailed above, consisting of a $2.6 million release of a valuation allowance for our Australian Net Operating Loss ("NOL") carryforwards given sufficient projected profitability for the subsidiary following the recent acquisitions of the Campus Fabric and Data Center businesses. Additionally, a tax benefit of $4.7 million was recognized for the release of valuation allowances given changes introduced by recently enacted U.S. Tax Reform Act which allows for an indefinite carryforward period for U.S. NOLs generated in tax years beginning after December 31, 2017.

For fiscal 2018, our tax provision primarily related to taxes on our foreign operations offset by two significant tax benefits resulting from Tax Reform and restructuring of our foreign operations. Income tax provision of $6.7 million consisted of taxes on the income of our foreign subsidiaries as well as tax expense associated with the establishment of a U.S. deferred tax liability for amortizable goodwill. Partially offsetting the tax provision is a tax benefit of $3.1 million resulting from the reduction of the U.S. Federal tax rate from 35% to 21% applied to our deferred tax liability related to amortizable goodwill as required by the recently enacted U.S. tax legislation as well as a tax benefit resulting from the impairment of a lease acquired from Avaya in Canada. Additionally, we recorded a tax benefit resulting from the restructuring of our foreign operations of $3.4 million.

For fiscal 2017 the majority of our tax provision related to taxes on our foreign operations as well as state taxes due to the full valuation allowance on our U.S. and certain foreign deferred tax assets.

For a full reconciliation of our effective tax rate to the U.S. federal statutory rate and for further explanation of our provisions for income taxes, see Note 15. Income Taxes, for additional information.

Critical Accounting Policies and Estimates

Our significant accounting policies are more fully described in Note 2 of Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K. The preparation of consolidated financial statements in accordance with generally accepted accounting principles requires management to make estimates, assumptions and judgments that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the consolidated financial statements, and the reported amounts of revenue and expenses during the period reported. By their nature, these estimates, assumptions and judgments are subject to an inherent degree of uncertainty. We base our estimates, assumptions and judgments on historical experience, market trends and other factors that are believed to be reasonable under the circumstances. Estimates, assumptions and judgments are reviewed on an ongoing basis and the effects of revisions are reflected in the consolidated financial statements in the period they are determined to be necessary. Actual results may differ from these estimates under different assumptions or conditions. We believe the critical accounting policies stated below, among others, affect our more significant judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

We account for revenue in accordance with Topic 606, Revenue from Contracts with Customers, which we adopted on July 1, 2017, using the retrospective method. We derive the majority of our revenue from sales of our networking equipment, with the remaining revenue generated from service fees relating to maintenance contracts, professional services, and training for our products. We sell our products and maintenance contracts direct to customers and to partners in two distribution channels, or tiers. The first tier consists of a limited number of independent distributors that stock our products and sell primarily to resellers. The second tier of the distribution channel consists of a non-stocking distributors and value-added resellers that sell directly to end-users. Products and services may be sold separately or in bundled packages.

We consider customer purchase orders, which in some cases are governed by master sales agreements, to be the contracts with a customer. For each contract, we consider the promise to transfer products and services, each of which are distinct, to be the identified performance obligations. In determining the transaction price, we evaluate whether the price is subject to refund or adjustment to determine the net consideration to which we expect to be entitled.

For all of our sales and distribution channels, revenue is recognized when control of the product is transferred to the customer (i.e., when our performance obligation is satisfied), which typically occurs at shipment for product sales. Revenue from maintenance contracts is recognized over time as our performance obligations are satisfied. This is typically the contractual service period, which ranges from one to three years. For product sales to our value-added resellers, non-stocking distributors and end-user customers, we generally do not grant return privileges, except for defective products during the warranty period, nor do we grant pricing credits. Sales incentives and other programs that we may make available to these customers are considered to be a form of variable consideration and we maintain estimated accruals and allowances using the expected value method.

Sales to stocking distributors are made under terms allowing certain price adjustments and limited rights of return (known as “stock rotation”) of our products held in their inventory. Stock rotation rights grant the distributor the ability to return certain specified amounts of inventory. Stock rotation adjustments are an additional form of variable consideration and are estimated using the expected value method based on historical return rates. Frequently, distributors need to sell at a price lower than the contractual distribution price in order to win business and submit rebate requests for Company pre-approval prior to selling the product through at the discounted price. At the time the distributor invoices our customer or soon thereafter, the distributor submits a rebate claim to us to adjust the distributor’s cost from the contractual price to the pre-approved lower price. After we verify that the claim was pre-approved, a credit memo is issued to the distributor for the rebate claim. In determining the transaction price, we consider these rebate adjustments to be variable consideration. Such price adjustments are estimated using the expected value method based on an analysis of actual claims, at the distributor level over a period of time considered adequate to account for current pricing and business trends.

Performance Obligations. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account in Topic 606. A contract’s transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Certain of our contracts have multiple performance obligations, as the promise to transfer individual goods or services is separately identifiable from other promises in the contracts and, therefore, is distinct. For contracts with multiple performance obligations, we allocate the contract’s transaction price to each performance obligation based on our relative standalone selling price. The stand-alone selling prices are determined based on the prices at which we separately sell these products. For items that are not sold separately, we estimate the stand-alone selling prices using the best estimated selling price approach.

Our performance obligations are satisfied at a point in time or over time as work progresses. Substantially all of our product sales revenues as reflected on the consolidated statements of operations for the years ended 2019, 2018 and 2017 are recognized at a point in time. Substantially all of our service revenue is recognized over time. For revenue recognized over time, we use an input measure, days elapsed, to measure progress.

Contract Balances. The timing of revenue recognition, billings and cash collections results in billed accounts receivable and deferred revenue in the consolidated balance sheets. Services provided under our renewable support arrangements are billed in accordance with agreed-upon contractual terms, which are typically at periodic intervals (e.g., quarterly or annually). We sometimes receive payments from our customers in advance of services being provided, resulting in deferred revenues. These liabilities are reported on the consolidated balance sheets on a contract-by-contract basis at the end of each reporting period.

Contract Costs. We recognize the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that we otherwise would have recognized is one year or less. Management expects that commission fees paid to sales representative as a result of obtaining service contracts and contract renewals are recoverable and therefore we capitalized them as contract costs. Capitalized commission fees are amortized on a straight-line basis over the average period of service contracts of approximately three years and are included in "Sales and marketing" in the accompanying consolidated statements of operations.

Inventory Valuation and Purchase Commitments

We write down inventory and record purchase commitment liabilities for estimated excess and obsolete inventory equal to the difference between the cost of inventory and the estimated market value based upon the forecast of future product demand, product transition cycles, and market conditions. Any significant unanticipated changes in demand or technological development could have a significant impact on the value of our inventory and purchase commitments and our reported results. If actual market conditions are less favorable than those projected, additional inventory write-downs, purchase commitment liabilities, and charges against earnings may be required.

New Accounting Pronouncements

See Note 2. Summary of Significant Accounting Policies, in the accompanying consolidated financial statements for a full description of new accounting pronouncements, including the respective expected dates of adoption and effects on results of operations and financial condition.

Liquidity and Capital Resources

The following summarizes information regarding our cash, investments, and working capital (in thousands):

	June 30, 2019	June 30, 2018
Cash	$ 169,607	$ 121,139
Marketable securities	—	1,459
Total cash and marketable securities	$ 169,607	$ 122,598
Working capital	$ 85,960	$ 68,041

As of June 30, 2019, our principal sources of liquidity consisted of cash, and investments of $169.6 million, accounts receivable, net of $174.4 million and availability of borrowings from the 2018 Revolving Facility of $35.5 million. We anticipate that our principal uses of cash for fiscal 2020 will be purchases of finished goods inventory from our contract manufacturers, payroll, repayments of debt and related interest, purchases of property and equipment, our stock repurchase program, and other operating expenses related to the development, and marketing of our products. We believe that our cash, investments and cash flows from operations along with the availability of additional borrowings from our 2019 Credit Agreement (as defined below), will be sufficient to meet our working capital requirements for at least the next 12 months.

On August 9, 2019 we completed our acquisition of Aerohive for approximately $264 million in cash consideration and acquired all Aerohive common shares at a price of $4.45 per share plus the assumption of certain employee equity awards. See Note 17 – Subsequent Events.

On August 9, 2019, we entered into an Amended and Restated Credit Agreement (the "2019 Credit Agreement"), by and among us, as borrower, several banks and other financial institutions as Lenders, BMO Harris Bank N.A., as an issuing lender and swingline lender, Silicon Valley Bank, as an Issuing Lender, and Bank of Montreal, as administrative agent and collateral agent for the Lenders, The 2019 Credit Agreement provides for a 5-year first lien term loan facility in an aggregate principal amount of $380 million (the "2019 Term Loan") and a 5-year revolving loan facility in an aggregate principal amount of $75 million (the "2019 Revolving Facility"). In addition, we may request incremental term loans and/or incremental revolving loan commitments in an aggregate amount not to exceed the sum of $100 million plus an unlimited amount that is subject to pro forma compliance with certain financial tests. In addition to funding a portion of the amount paid by us to acquire Aerohive, we will use the proceeds of the 2019 Term Loan to pay off i) our existing 2018 Credit Agreement, ii) pay fees and expenses incurred in connection with the tender offer to acquire all of the outstanding shares of Aerohive's common stock and iii) for working capital and general corporate purposes.

Financial covenants under the 2019 Credit Agreement require us to maintain a minimum consolidated fixed charge and consolidated leverage ratio at the end of each fiscal quarter through maturity. The 2019 Credit Agreement also includes covenants and restrictions that limited, among other things, our ability to incur additional indebtedness, create liens upon any of our property, merge, consolidate or sell all or substantially all of our assets. The 2019 Credit Agreement also includes customary events of default which could result in acceleration of the outstanding balance.

On November 2, 2018, our Board of Directors announced that it had authorized management to repurchase up to $60.0 million of its common stock for two years from the date of authorization. Purchases may be made from time to time in the open market or in privately negotiated transactions. The manner, timing and amount of any future purchases will be determined by the Company's management based on their evaluation of market conditions, stock price, our ongoing determination that it is the best use of available cash and other factors. The repurchase program does not obligate us to acquire any common stock, may be suspended or terminated at any time without prior notice and will be subject to regulatory considerations. During the year ended June 30, 2019, we repurchased 2.4 million shares at an aggregate cost of $15.0 million.

Key Components of Cash Flows and Liquidity

A summary of the sources and uses of cash is as follows (in thousands):

	Year Ended		
	June 30, 2019	**June 30, 2018**	**June 30, 2017**
Net cash provided by operating activities	$ 104,945	$ 19,043	$ 59,283
Net cash used in investing activities	(21,809)	(132,471)	(71,752)
Net cash (used in) provided by financing activities	(34,442)	104,746	48,708
Foreign currency effect on cash	(226)	(629)	89
Net increase (decrease) in cash	$ 48,468	$ (9,311)	$ 36,328

Cash was $169.6 million at June 30, 2019, representing an increase of $48.5 million from $121.1 million at June 30, 2018. Cash increased primarily due to cash provided by operations of $104.9 million partially offset by cash used in investing activities of $21.8 million mainly for capital expenditures, and cash used in financing activities of $34.4 million mainly as a result of repayments of debt and repurchases of stock.

Cash was $121.1 million at June 30, 2018, representing a decrease of $9.3 million from $130.5 million at June 30, 2017. Cash and cash equivalents decreased primarily due to cash used in investing activities of $132.5 million mainly for the acquisitions of the Campus Fabric and Data Center Businesses and capital expenditures, partially offset by cash provided by financing activities of $104.7 million as a result of additional borrowings for the acquisitions and cash provided by operations of $19.0 million.

Net Cash Provided by Operating Activities

Cash provided by operating activities during fiscal year ended 2019 was $104.9 million. Factors contributing to cash provided by operating activities for the year ended June 30, 2019 were non-cash expenses such as amortization of intangibles, stock-based compensation and depreciation, decreases in accounts receivable and increases in deferred revenue and accrued compensation and benefits. These amounts were partially offset by our net loss of $25.9 million, decreases in accounts payable, other current and long-term liabilities, and non-cash deferred income tax liabilities and increases in prepaid expenses and other assets.

Cash provided by operating activities during fiscal 2018 was $19.0 million. Factors contributing to cash provided by operating activities for the year ended June 30, 2018 were non-cash expenses such as stock-based compensation, amortization of intangibles, depreciation, a decrease in inventories, as well as increases in deferred revenue, accounts payable and accrued compensation and benefits, and other current and long-term liabilities. These sources were partially offset by net loss of $46.8 million, increases in accounts receivable, prepaid expenses and other assets, non-cash gain on bargain purchase and decreases in deferred income tax liabilities.

Cash provided by operating activities during fiscal 2017 was $59.3 million. Factors contributing to cash provided by operating activities for the year ended June 30, 2017 were decreases in inventory and prepaid expenses, and increases to accrued compensation and benefits, deferred revenues and other liabilities in addition to non-cash expenses such as amortization of intangibles, stock-based compensation, and depreciation. These amounts were partially offset by an increase in accounts receivables and net loss of $1.7 million.

Net Cash Used in Investing Activities

Cash used in investing activities during fiscal year ended June 30, 2019 was $21.8 million mainly due to capital expenditures of $22.7 million.

Cash used in investing activities during fiscal 2018 was $132.5 million mainly due to our acquisitions of the Campus Fabric and Data Center Businesses of $97.6 million and capital expenditures of $40.4 million offset by proceeds from the sale of equity investment.

Cash used in investing activities during fiscal 2017 was $71.8 million mainly due to our acquisition of the WLAN Business of $51.1 million, deposits for future acquisitions of $10.2 million and capital expenditures of $10.4 million.

Net cash (Used in) Provided by Financing Activities

Cash used in financing activities during fiscal year ended June 30, 2019 was $34.4 million due primarily to repayments of debt totaling $19.9 million, contingent consideration of $6.5 million and $4.0 million of deferred payments on acquisitions. This was partially offset by $11.5 million of proceeds from issuance of shares of our common stock under our Employee Stock Purchase Plan (“ESPP”) and the exercise of stock options, net of taxes paid on vested and released stock awards.

Cash flows used in financing activities for the period also included repurchasing of our common shares valued at $15.0 million during fiscal year ended June 30, 2019, in accordance with our approved share repurchase plan. The share repurchases were executed through open market purchases, and future share repurchases may be completed through the combination of individually negotiated transactions, accelerated share buyback, and/or open market purchases. As of June 30, 2019, we have $45.0 million available under our share repurchase plan.

Cash provided by financing activities during fiscal 2018 was $104.7 million due primarily to additional borrowings of $100.0 million to fund our acquisitions of the Campus Fabric and Data Center Businesses, new borrowings of $200 million under the Credit Agreement to pay off the existing debt under the prior Credit Facility, $3.3 million of proceeds from issuance of shares of our common stock under our Employee Stock Purchase Plan ("ESPP") and the exercise of stock options, net of taxes paid on vested and released stock awards, partially offset by repayments of debt totaling $193.7 million, $3.2 million of loan fees incurred in connection with the Second Amendment of our Credit Facility and the Credit Agreement and $1.7 million of contingent consideration and deferred payments on acquisitions.

Cash provided by financing activities during fiscal 2017 was $48.7 million due primarily to $48.3 million in borrowings of debt pursuant to our WLAN Business acquisition, $11.8 million in proceeds from the sale of our common stock, primarily through the exercise of stock options and our ESPP, partially offset by repayments of debt of $10.0 million.

Foreign Currency Effect on Cash

Foreign currency effect on cash decreased in 2019, primarily due to changes in exchange rates between the U.S. Dollar and Indian Rupee and the Euro.

Contractual Obligations

The following summarizes our contractual obligations at June 30, 2019, and the effect such obligations are expected to have on our liquidity and cash flow in future periods (in thousands):

	Total	Less than 1 Year	1-3 years	3-5 years	More than 5 years
Contractual Obligations:					
Debt obligations	$ 180,500	$ 9,500	$ 28,500	$ 142,500	$ —
Interest on debt obligations	25,582	8,333	14,952	2,297	—
Inventory unconditional purchase obligations	51,241	51,241	—	—	—
Contractual commitments	94,000	23,500	47,000	23,500	—
Non-cancellable operating lease obligations	104,678	22,733	41,854	23,804	16,287
Deferred payments for an acquisition	15,000	4,000	8,000	3,000	—
Contingent consideration for an acquisition	6,298	4,236	2,013	49	—
Other liabilities	379	124	249	6	—
Total contractual cash obligations	$ 477,678	$ 123,667	$ 142,568	$ 195,156	$ 16,287

The contractual obligations referenced above are more specifically defined as follows:

Debt obligations relate to amounts owed under our Credit Agreement.

Inventory unconditional purchase obligations represent the purchase of long lead-time component inventory that our contract manufacturers procure in accordance with our forecast. We expect to honor the inventory purchase commitments within the next 12 months.

Contractual commitments to suppliers for future services.

Deferred payments represent Data Center Business consideration obligation of $1.0 million per quarter.

Contingent consideration for the Capital Financing Business acquisition, at fair value. Actual payments could be different.

Non-cancelable operating lease obligations represent base rents and operating expense obligations.

Other liabilities include our commitments towards debt related fees and specific arrangements other than inventory.

The amounts in the table above exclude immaterial income tax liabilities related to uncertain tax positions as we are unable to reasonably estimate the timing of the settlement.

We did not have any material commitments for capital expenditures as of June 30, 2019.

Off-Balance Sheet Arrangements

We did not have any off-balance sheet arrangements as of June 30, 2019.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Sensitivity

Our exposure to market risk for changes in interest rates relates primarily to our financial investments and debt. We usually invest our cash in investments with short maturities or with frequent interest reset terms. Accordingly, our interest income fluctuates with short-term market conditions. As of June 30, 2019, we did not have any financial investments that were exposed to interest rate risk.

Debt

At certain points in time we are exposed to the impact of interest rate fluctuations, primarily in the form of variable rate borrowings from the Credit Agreement which is fully described in Note 7. Debt, of our Notes to the Consolidated Financial Statements. At June 30, 2019 we had $180.5 million of debt outstanding, all of which was from the Credit Agreement. Through the end of our fiscal year, the average daily outstanding amount was $188.8 million with a high of $200.0 million and a low of $180.5 million.

The following table presents hypothetical changes in interest expense for the year ended June 30, 2019, on the outstanding Credit Agreement, borrowings as of June 30, 2019, that are sensitive to changes in interest rates (in thousands):

Change in interest expense given a decrease in interest rate of X bps*		Outstanding debt	Change in interest expense given an increase in interest rate of X bps	
(100 bps)	(50 bps)	as of June 30, 2019	100 bps	50 bps
$ (451)	$ (226)	$ 180,500	$ 451	$ 226

***** Underlying benchmark interest rate was 4.84% as of June 30, 2019.

Exchange Rate Sensitivity

A majority of our sales and our expenses are denominated in United States Dollars. While we conduct sale transactions and incur certain operating expenses in foreign currencies and expect to continue to do so, we do not anticipate that foreign exchange gains or losses will be significant, in part because of our foreign exchange risk management process discussed below.

Foreign Exchange Forward Contracts

We record all derivatives on the balance sheet at fair value. Changes in the fair value of derivatives are recognized in earnings as Other income (loss), net. From time to time, we enter into foreign exchange forward contracts to mitigate the effect of gains and losses generated by the foreign currency forecast transactions related to certain operating expenses and re-measurement of certain assets and liabilities denominated in foreign currencies. These derivatives do not qualify as hedges. Changes in the fair value of these foreign exchange forward contracts are offset largely by re-measurement of the underlying foreign currency denominated assets and liabilities. At June 30, 2019 we did not have any foreign currency forward contracts. At June 30, 2018, we had outstanding foreign currency forward contracts with a notional value of $5.0 million.

Foreign currency transaction gains and losses from operations were gains of $0.1 million in fiscal year ended year ended June 30, 2019 and losses of $1.2 million and $0.7 million in fiscal years 2018 and 2017, respectively. There were no gains and losses from hedging transactions in fiscal year ended June 30, 2019 and they were not material in fiscal years 2018 and 2017.

Item 8. Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS OF EXTREME NETWORKS, INC.

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Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors Extreme Networks, Inc.:

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

We have audited the accompanying consolidated balance sheets of Extreme Networks, Inc. and subsidiaries (the Company) as of June 30, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended June 30, 2019 and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of June 30, 2019, 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 June 30, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended June 30, 2019, 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 June 30, 2019, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting under Item 9A. 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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Assessment of effect of international tax realignment

As discussed in Note 15 to the consolidated financial statements, the Company underwent a realignment of its international structure, resulting in changes to the income tax provision and related disclosures. We identified the assessment of the effect of the international tax realignment as a critical audit matter. Due to the significance of the Company's foreign operations subject to the realignment of its international structure, there was complexity in assessing the implications of the realignment on the income tax provision and related disclosures. Complex auditor judgment was required to evaluate the Company's interpretation of the applicable tax laws and regulations and their application to specific aspects of the Company's realignment activities.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's income tax process, including controls related to the identification and assessment of the tax positions taken due to the realignment and of the implications of the Company's compliance with the intercompany agreements underlying the realignment. Due to the complexity of tax law, which is often subject to interpretation, we involved tax professionals with specialized skills and knowledge, who assisted in evaluating:

- The Company's interpretation and application of tax laws and regulations, and
- The Company's compliance with the intercompany agreements which were executed as part of the realignment.

In addition, the tax professionals performed an independent assessment of the Company's tax positions taken related to the realignment, and compared the results of that independent assessment to the Company's conclusions.

Evaluation of the estimated market value of finished goods inventory

As discussed in Note 2 to the consolidated financial statements, the Company assesses its finished goods inventory to identify excess or obsolete inventory and potential declines in its value. Finished goods inventory as of June 30, 2019 was $49.5 million.

We identified the evaluation of the estimated market value of finished goods inventory as a critical audit matter. There was a high degree of subjectivity in evaluating the effect of the Company's sales initiatives to sell certain inventory which has limited future product demand forecasted, due to the nature of the evidence available related to the anticipated effect of those initiatives.

The primary procedures we performed to address this critical audit matter included the following. We tested certain internal controls over the Company's process to assess excess or obsolete inventory, including controls related to the determination of the estimated market value and the estimated effect of specifically identified sales initiatives. We challenged the feasibility of the estimated effect of the Company's sales initiatives through an evaluation of the historical results of similarly structured sales initiatives. We performed an assessment of physical inventory disposals to determine whether inventory write-downs were taken in the correct period. We also performed inquiries with product line managers and examined product roadmaps to determine whether new product launches would have an adverse effect on the anticipated outcome of the sales initiatives.

/s/KPMG LLP

We have served as the Company's auditor since 2010.

Raleigh, North Carolina
August 29, 2019

EXTREME NETWORKS, INC.

CONSOLIDATED BALANCE SHEETS

(In thousands, except per share amounts)

	June 30, 2019	June 30, 2018
ASSETS		
Current assets:		
Cash	$ 169,607	$ 121,139
Accounts receivable, net of allowance for doubtful accounts of $1,054 and $1,478, respectively	174,414	212,423
Inventories	63,589	63,867
Prepaid expenses and other current assets	34,379	30,484
Total current assets	441,989	427,913
Property and equipment, net	73,554	78,519
Intangible assets, net	51,112	77,092
Goodwill	138,577	139,082
Other assets	51,642	47,642
Total assets	$ 756,874	$ 770,248
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current portion of long-term debt	$ 9,011	$ 9,007
Accounts payable	65,704	75,689
Accrued compensation and benefits	51,625	50,351
Accrued warranty	14,779	12,807
Current portion of deferred revenue	144,230	130,865
Other accrued liabilities	70,680	81,153
Total current liabilities	356,029	359,872
Deferred revenue, less current portion	59,012	43,660
Long-term debt, less current portion	169,739	188,749
Deferred income taxes	1,957	6,135
Other long-term liabilities	54,150	59,100
Commitments and contingencies (Note 8)		
Stockholders' equity:		
Convertible preferred stock, $.001 par value, issuable in series, 2,000 shares authorized; none issued	—	—
Common stock, $.001 par value, 750,000 shares authorized; 121,538 and 116,123 shares issued, respectively; 119,172 and 116,123 shares outstanding, respectively	122	116
Additional paid-in-capital	986,772	942,397
Accumulated other comprehensive loss	(2,473)	(1,703)
Accumulated deficit	(853,434)	(828,078)
Treasury stock at cost: 2,366 and 0 shares, respectively	(15,000)	—
Total stockholders' equity	115,987	112,732
Total liabilities and stockholders' equity	$ 756,874	$ 770,248

See accompanying notes to consolidated financial statements.

EXTREME NETWORKS, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share amounts)

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Net revenues:			
Product	$ 747,571	$ 764,455	$ 460,425
Service	248,218	218,687	146,659
Total net revenues	995,789	983,142	607,084
Cost of revenues:			
Product	346,218	357,062	220,221
Service	98,336	91,563	55,906
Total cost of revenues	444,554	448,625	276,127
Gross profit:			
Product	401,353	407,393	240,204
Service	149,882	127,124	90,753
Total gross profit	551,235	534,517	330,957
Operating expenses:			
Research and development	210,132	183,877	93,724
Sales and marketing	285,326	267,107	162,626
General and administrative	55,623	50,988	37,864
Acquisition and integration costs, net of bargain purchase gain	3,444	53,900	13,105
Restructuring and related charges, net of reversals	5,090	8,140	8,896
Amortization of intangibles	6,346	8,715	8,702
Total operating expenses	565,961	572,727	324,917
Operating (loss) income	(14,726)	(38,210)	6,040
Interest income	2,232	2,847	689
Interest expense	(12,597)	(13,923)	(4,086)
Other (expense) income, net	(783)	2,639	(47)
(Loss) income before income taxes	(25,874)	(46,647)	2,596
(Benefit) provision for income taxes	(21)	145	4,340
Net loss	$ (25,853)	$ (46,792)	$ (1,744)
Basic and diluted net loss per share:			
Net loss per share - basic	$ (0.22)	$ (0.41)	$ (0.02)
Net loss per share - diluted	$ (0.22)	$ (0.41)	$ (0.02)
Shares used in per share calculation - basic	117,954	114,221	108,273
Shares used in per share calculation - diluted	117,954	114,221	108,273

See accompanying notes to consolidated financial statements.

EXTREME NETWORKS, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Net loss	$ (25,853)	$ (46,792)	$ (1,744)
Other comprehensive income (loss), net of tax:			
Available for sale securities:			
Change in unrealized gains on available for sale securities	—	497	—
Net change in foreign currency translation adjustments	(273)	102	572
Other comprehensive income (loss), net of tax:	(273)	599	572
Total comprehensive loss	$ (26,126)	$ (46,193)	$ (1,172)

See accompanying notes to consolidated financial statements.

EXTREME NETWORKS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands)

	Common Stock				Treasury Stock			
	Shares	Amount	Additional Paid-In-Capital	Accumulated Other Comprehensive Loss	Shares	Amount	Accumulated Deficit	Total Stockholders' Equity
Balance at June 30, 2016	104,943	$ 105	$ 884,706	$ (2,874)	—	$ —	$ (779,542)	$ 102,395
Net loss	—	—	—	—	—	—	(1,744)	(1,744)
Other comprehensive loss	—	—	—	572	—	—	—	572
Issuance of common stock from equity incentive plans, net of tax	5,982	6	11,816	—	—	—	—	11,822
Stock-based compensation	—	—	12,633	—	—	—	—	12,633
Balance at June 30, 2017	110,925	111	909,155	(2,302)	—	—	(781,286)	125,678
Net loss	—	—	—	—	—	—	(46,792)	(46,792)
Other comprehensive income	—	—	—	599	—	—	—	599
Issuance of common stock from equity incentive plans, net of tax	5,198	5	3,336	—	—	—	—	3,341
Stock-based compensation	—	—	27,633	—	—	—	—	27,633
Stock awards granted in connection with acquisition	—	—	2,273	—	—	—	—	2,273
Balance at June 30, 2018	116,123	116	942,397	(1,703)	—	—	(828,078)	112,732
Cumulative effect of adopting ASU 2016-01	—	—	—	(497)	—	—	497	—
Net loss	—	—	—	—	—	—	(25,853)	(25,853)
Other comprehensive income	—	—	—	(273)	—	—	—	(273)
Issuance of common stock from equity incentive plans, net of tax	5,415	6	11,478	—	—	—	—	11,484
Stock-based compensation	—	—	32,897	—	—	—	—	32,897
Repurchase of stock	—	—	—	—	(2,366)	(15,000)	—	(15,000)
Balance at June 30, 2019	121,538	$ 122	$ 986,772	$ (2,473)	(2,366)	$ (15,000)	$ (853,434)	$ 115,987

See accompanying notes to consolidated financial statements.

EXTREME NETWORKS, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Cash flows from operating activities:			
Net loss	$ (25,853)	$ (46,792)	$ (1,744)
Adjustments to reconcile net loss to net cash provided by provided by operating activities:			
Depreciation	26,889	23,471	10,618
Amortization of intangible assets	25,984	25,585	15,722
Provision for doubtful accounts	1,407	1,687	335
Stock-based compensation	32,897	27,633	12,633
Deferred income taxes	(5,766)	(4,677)	1,995
Non-cash restructuring and related charges	—	—	1,031
Unrealized/realized loss (gain) on equity investment	508	(3,967)	—
Realized gain on bargain purchase	—	(5,030)	—
Loss on extinguishment of debt	—	1,173	—
Non-cash interest expense	3,022	4,060	513
Other	54	1,873	826
Changes in operating assets and liabilities, net of acquisitions			
Accounts receivable	36,331	(69,518)	(13,951)
Inventories	278	17,343	7,413
Prepaid expenses and other assets	(6,979)	(8,014)	7,717
Accounts payable	(9,850)	18,844	2,064
Accrued compensation and benefits	1,274	4,981	13,058
Deferred revenue	28,716	28,366	(4,677)
Other current and long-term liabilities	(3,967)	2,025	5,730
Net cash provided by operating activities	104,945	19,043	59,283
Cash flows from investing activities:			
Capital expenditures	(22,730)	(40,411)	(10,425)
Business acquisitions	—	(97,581)	(51,088)
Deposits related to an acquisition	—	—	(10,239)
Proceeds from sale of investment	921	5,521	—
Net cash used in investing activities	(21,809)	(132,471)	(71,752)
Cash flows from financing activities:			
Borrowings under Revolving Facility	—	10,000	—
Borrowings under Term Loan	—	290,000	48,250
Repayments of debt	(19,875)	(193,713)	(10,038)
Loan fees on borrowings	(545)	(3,211)	(1,326)
Repurchase of stock	(15,000)	—	—
Proceeds from issuance of common stock, net of tax withholding	11,484	3,341	11,822
Contingent consideration obligations	(6,506)	(671)	—
Deferred payments on an acquisition	(4,000)	(1,000)	—
Net cash (used in) provided by financing activities	(34,442)	104,746	48,708
Foreign currency effect on cash	(226)	(629)	89
Net increase (decrease) in cash	48,468	(9,311)	36,328
Cash at beginning of period	121,139	130,450	94,122
Cash at end of period	$ 169,607	$ 121,139	$ 130,450
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 8,490	$ 8,294	$ 3,013
Cash paid for taxes, net	$ 5,974	$ 4,131	$ 2,514
Non-cash investing activities:			
Unpaid capital expenditures	$ 4,142	$ 5,323	$ 1,122

See accompanying notes to the consolidated financial statements.

1. Description of Business and Basis of Presentation

Extreme Networks, Inc., together with its subsidiaries (collectively referred to as “Extreme” or “the Company”) is a leader in providing software-driven networking solutions for enterprise customers. The Company conducts its sales and marketing activities on a worldwide basis through distributors, resellers and the Company’s field sales organization. Extreme was incorporated in California in 1996 and reincorporated in Delaware in 1999.

Fiscal Year

The Company uses a fiscal calendar year ending on June 30. All references herein to “fiscal year ended 2019” or “2019”; “fiscal 2018” or “2018”; “fiscal 2017” or “2017” represent the fiscal years ending, respectively.

Principles of Consolidation

The consolidated financial statements include the accounts of Extreme Networks and its wholly-owned subsidiaries. All inter-company accounts and transactions have been eliminated.

The Company predominantly uses the United States Dollar as its functional currency. The functional currency for certain of its foreign subsidiaries is the local currency. For those subsidiaries that operate in a local currency functional environment, all assets and liabilities are translated to United States Dollars at current month end rates of exchange; and revenue and expenses are translated using the monthly average rate.

Accounting Estimates

The preparation of financial statements and related disclosures in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ materially from these estimates.

2. Summary of Significant Accounting Policies

Revenue Recognition

The Company derives revenues primarily from sales of its networking equipment, with the remaining revenue generated from service fees relating to maintenance contracts, professional services, and training for the products. The Company recognizes revenues when control of promised goods or services is transferred to its customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services.

See Note 3. Revenues, for further discussion.

Cash, Cash Equivalents and Marketable Securities

The Company considers highly liquid investments with maturities of three months or less at the date of purchase to be cash equivalents. Marketable securities are recorded in “Prepaid expense and other current assets” in the accompanying consolidated balance sheet as these are publicly-traded equity securities with maturities of greater than three months, but less than one year at the balance sheet date. Marketable securities are classified as available-for-sale and reported at fair value with unrealized gains and losses included, net of tax, in accumulated other comprehensive loss, a component of stockholders’ equity. Realized gains and losses and declines in the value of available-for-sale securities determined to be other than temporary are included in other income (expense), net. The cost of securities sold is determined based on the specific identification method.

Allowance for Product Returns

The Company provides an allowance for product returns based on its historical returns, analysis of credit memo data and its return policies. The allowance includes the estimates for product allowances from end customers as well as stock rotations and other returns from the Company’s stocking distributors. The allowance for product returns is a reduction of accounts receivable. If the historical data that the Company uses to calculate the estimated product returns and allowances does not properly reflect actual levels of product returns, these estimates will be revised, resulting in an impact on net revenue. The allowance for product returns estimate is also impacted by the timing of the actual product return from the customer.

Allowance for Doubtful Accounts

The Company maintains an allowance for doubtful accounts which reflects its best estimate of potentially uncollectible trade receivables. The allowance consists of both specific and general reserves. The Company continually monitors and evaluates the collectability of its trade receivables based on a combination of factors. It records specific allowances for bad debts in general and administrative expense when it becomes aware of a specific customer's inability to meet its financial obligation to the Company, such as in the case of bankruptcy filings or deterioration of financial position. Estimates are used in determining the allowances for all other customers based on factors such as current trends in the length of time the receivables are past due and historical collection experience. The Company mitigates some collection risk by requiring most of its customers in the Asia-Pacific region, excluding Japan and Australia, to pay cash in advance or secure letters of credit when placing an order with the Company.

Inventories

The Company values its inventory at lower of cost or net realizable value. Cost is computed using standard cost, which approximates actual cost, on a first-in, first-out basis. The Company has established inventory allowances when conditions exist that suggest that inventory is obsolete or may be in excess of anticipated demand based upon assumptions about future demand. At the point of the loss recognition, a new, lower-cost basis for that inventory is established, and subsequent changes in facts and circumstances do not result in the restoration or increase in that newly established cost basis. Previously written down or obsolete inventory subsequently sold has not had a material impact on gross margin for any of the periods presented.

Long-Lived Assets

Long-lived assets include (a) property and equipment, (b) goodwill and intangible assets, and (c) other assets. Property and equipment and definite-lived intangible assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets or asset groups may not be recoverable. If such facts and circumstances exist, the Company assesses the recoverability of these assets by comparing the projected undiscounted net cash flows associated with the related asset or group of assets over their remaining lives against their respective carrying amounts. Impairments, if any, are based on the excess of the carrying amount over the fair value of those assets.

(a) Property and Equipment, Net

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation and amortization is computed using the straight-line method over the estimated useful lives of the assets. Estimated useful lives of one to four years are used for computer equipment and software. Estimated useful lives of three to seven years are used for office equipment, furniture and fixtures. Depreciation and amortization of leasehold improvements is computed using the lesser of the useful life or lease terms (ranging from two to ten years).

(b) Goodwill and Intangible Assets

Goodwill and intangible assets are generated as a result of business combinations and are comprised of, among other things, developed technology, customer relationships, trade names, and licensing agreements. The Company reevaluates the estimated remaining useful life of acquired definite-lived intangible assets whenever events or changes in circumstances indicate a revision to the remaining period of amortization might be necessary. The carrying amounts of these assets are reviewed for impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable.

Goodwill is calculated as the excess of the purchase price over the fair value of net tangible and identifiable intangible assets acquired. Goodwill is not amortized, but rather is tested for impairment at least annually or more frequently if indicators of impairment are present. The Company performs its annual goodwill impairment analysis as of the first day of the fourth quarter of each year. The Company adopted ASU 2017-04, *Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment* in fiscal 2018, which eliminated step two from the goodwill impairment test. In assessing impairment on goodwill, the Company bypasses the qualitative assessment and proceed directly to performing the quantitative evaluation of the fair value of the reporting unit, to compare against the carrying value of the reporting unit. A goodwill impairment charge is recognized for the amount by which the reporting unit's fair value is less than its carrying value. Any loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. Based on the results of the goodwill impairment analyses, the Company determined that no impairment charge needed to be recorded for any periods presented.

(c) Other Assets

Other assets consist primarily of service parts and long-term deposits. The Company holds service parts to support customers who have purchased service contracts with a hardware replacement element, as well as to support its warranty program. The Company reduces the carrying value of service parts to net realizable value based on expected quantities needed to satisfy contractual service requirements of customers.

Business Combinations

The Company applies the acquisition method of accounting for business combinations. Under this method of accounting, all assets acquired and liabilities assumed are recorded at their respective fair values at the date of the acquisition. Determining the fair value of assets acquired and liabilities assumed requires management's judgment and often involves the use of significant estimates and assumptions, including assumptions with respect to future cash inflows and outflows, discount rates, useful lives, among other items. Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Market participants are assumed to be buyers and sellers in the principal (most advantageous) market for the asset or liability. Additionally, fair value measurements for an asset assume the highest and best use of that asset by market participants. As a result, the Company may be required to value the acquired assets at fair value measures that do not reflect its intended use of those assets. Use of different estimates and judgments could yield different results.

Any excess of the purchase price over the fair value of the net assets acquired is recognized as goodwill. If the fair value of net assets acquired exceeds the fair value of the purchase price, a gain on bargain purchase is recognized within the consolidated statements of operations. Although the Company believes the assumptions and estimates it has made are reasonable and appropriate, they are based in part on historical experience and information that may be obtained from the management of the acquired company and are inherently uncertain. During the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill for facts and considerations that were known at the acquisition date. 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 within the Company's consolidated statements of operations.

Deferred Revenue

Deferred revenue represents amounts for (i) deferred maintenance and support revenue and (ii) other deferred revenue including professional services and training when the revenue recognition criteria have not been met.

Product Warranties and Guarantees

Networking products may contain undetected hardware or software errors when new products or new versions or updates of existing products are released to the marketplace. The majority of the Company's hardware products are shipped with either a one-year warranty or a limited lifetime warranty, and software products receive a 90-day warranty for media only. Upon shipment of products to its customers, the Company estimates expenses for the cost to repair or replace products that may be returned under warranty and accrues a liability in cost of product revenue for this amount. The determination of the Company's warranty requirements is based on actual historical experience with the product or product family, estimates of repair and replacement costs and any product warranty problems that are identified after shipment. The Company estimates and adjusts these accruals at each balance sheet date in accordance with changes in these factors.

In the normal course of business to facilitate sales of its products, the Company indemnifies its resellers and end-user customers with respect to certain matters. The Company has agreed to hold the customer harmless against losses arising from a breach of intellectual property infringement or other claims made against certain parties. These agreements may limit the time within which an indemnification claim can be made and the amount of the claim. It is not possible to estimate the maximum potential amount under these indemnification agreements due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement. Historically, payments made by the Company under these agreements have not had a material impact on its operating results or financial position.

Stock-based Compensation

The Company recognizes compensation expense related to stock-based awards, including stock options, restricted stock units ("RSUs") and employee stock purchases related to its 2014 Employee Stock Purchase Plan (the "2014 ESPP"), based on the estimated fair value of the award on the grant date, over the requisite service period. The Company accounts for forfeitures as they occur. The Company calculates the fair value of stock options and share purchase options under the 2014 ESPP using the Black-Scholes-Merton option valuation model. The fair value of RSUs is based on the closing stock price of the Company's common stock on the grant date.

The Company grants certain employees performance-based stock options and RSUs. The performance metrics include company-wide financial performance and/or market conditions. For awards that include performance conditions, no compensation cost is recognized until the performance goals are probable of being met, at which time the cumulative compensation expense from the service inception date would be recognized. For awards that contain market conditions, compensation expense is measured using a Monte Carlo simulation model and recognized over the derived service period based on the expected market performance as of the grant date.

Advertising

Advertising costs are expensed as incurred. Advertising expenses were $0.3 million, $0.5 million and $0.4 million in fiscal years 2019, 2018 and 2017 respectively.

Income Taxes

The Company accounts for income taxes utilizing the liability method. Deferred income taxes are recorded to reflect consequences on future years of differences between financial reporting and the tax basis of assets and liabilities measured using the enacted statutory tax rates and tax laws applicable to the periods in which differences are expected to affect taxable earnings. A valuation allowance is recognized to the extent that it is more likely than not that the tax benefits will not be realized.

The Company accounts for uncertainty in income taxes using a two-step approach to recognize and measure uncertain tax positions. The first step is to evaluate the tax position by determining if the weight of available evidence indicates that it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount that is more than 50% likely of being realized upon settlement. The Company classifies the liability for unrecognized tax benefits as current to the extent that the Company anticipates payment (or receipt) of cash within one year. Interest and penalties related to uncertain tax positions are recognized in the provision for income taxes. For additional discussion, see Note 15. Income Taxes.

Recently Issued Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-02, *Leases (Topic 842)*, which requires the identification of arrangements that should be accounted for as leases by lessees and lessors, and key disclosure information about leasing arrangements. In general, for lease arrangements exceeding a twelve-month term, these arrangements must now be recognized as assets and liabilities on the balance sheet of the lessee. Under Topic 842, a right-of-use asset ("ROU") and lease obligation will be recorded for all leases, whether operating or financing, while the statement of operations will reflect lease expense for operating leases and amortization/interest expense for financing leases. The balance sheet amount recorded for existing leases at the date of adoption of Topic 842 must be calculated using the applicable incremental borrowing rate at the date of adoption. Topic 842 also required lessors to classify leases as a sales-type, direct financing or operating lease. A lease is a sales-type lease if any one of five criteria are met, each of which indicate that the lease, in effect, transfers control of the underlying asset to the lessee. If none of those five criteria are met, but two additional criteria are both met, indicating that the lessor has transferred substantially all of the risks and benefits to the lessee and a third party, the lease is a direct financing lease. All leases that are not sales-type or direct financing leases are operating leases. The Company believes that substantially all of its leases continue to be classified as operating leases. In addition, Topic 842 was subsequently amended by ASU No 2018-10, Codification Improvements; ASU 2018-11, Targeted Improvements; ASU 2018-20 Narrow Scope Improvements; and ASU 2019-01 Codification Improvements.

This guidance will become effective for the Company and the Company will adopt the new standards beginning with its fiscal year 2020, beginning on July 1, 2019. Topic 842 is applied on the modified retrospective method, applying the new standard to all leases existing as of July 1, 2019. We expect to adopt the new standard using the effective date as our date of initial application. Consequently, financial information will not be updated, and disclosures required under the new standard will not be provided for dates and periods before July 1, 2019.

The new standard provides a number of optional practical expedients in transition. The Company expects to elect the "package of practical expedients" which permits the Company not to reassess under the new standard our prior conclusions about lease identification, lease classification, and initial direct costs. The new standard also provides practical expedients for ongoing accounting. The Company also currently expects to elect the short-term lease recognition exemption for all leases that qualify. This means, for those leases that qualify, the Company will not recognize right-of-use assets or lease liabilities, and this includes not recognizing ROU assets or lease liabilities for existing short-term leases of those assets in transition. In addition, the Company currently does not expect to elect the practical expedient to separate lease and non-lease components for leases. The Company expects that these new standards will have a material impact to the Company's financial position.

The Company expects to recognize ROU assets and lease liabilities on the consolidated balance sheets with corresponding ROU assets of approximately $68 to $78 million and lease liabilities of approximately $82 to $92 million based on the present value of the remaining minimum rental payments under current leasing standards for existing operating leases. The Company does not expect that the adoption of Topic 842 will have a material effect on operating income (loss) and net cash flows, however it will impact the classification between cash flows from operations and cash flows from financing activities.

In August 2017, the FASB issued ASU 2017-12, *Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities*, which is intended to allow companies to better align risk management activities and financial reporting for hedging relationships through changes to both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results by expanding and refining hedge accounting for both nonfinancial and financial risk components and aligning the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. In addition, in October 2018, the FASB issued ASU 2018-16, *Derivatives and Hedging* (*Topic 815*), which amends Topic 815 to add the overnight index swap (OIS) rate based on the secured overnight financing rate as a fifth U.S. benchmark interest rate. These standards are effective for interim and annual reporting periods beginning after December 15, 2018. The Company does not believe it will have a material impact on the Company's financial statements upon adoption. This guidance is effective for the Company beginning with its fiscal year 2020, beginning on July 1, 2019. In addition, Topic 815 was subsequently amended by ASU 2019-04, Codification Improvements.

In February 2018, the FASB issued ASU 2018-02, *Income Statement - Reporting Comprehensive Income (Topic 220)*, this standard that allows the reclassification from AOCI to retained earnings for stranded tax effects resulting from the 2017 Tax Cuts and Jobs Act ("Tax Reform Act"). The amount of the reclassification is the effect of the change in the U.S. federal corporate income tax rate on the gross deferred tax amounts and related valuation allowances related to items remaining in AOCI. This standard is effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. Early adoption is permitted, including adoption in any interim period, for reporting periods for which financial statements have not yet been issued. The new standard is to be applied either in the period of adoption or retrospectively to each period (or periods) in which the effects of the change in the income tax rate in the Tax Reform Act are recognized. The Company does not believe it will have a material impact on the Company's financial statements upon adoption. This guidance is effective for the Company beginning with its fiscal year 2020, beginning on July 1, 2019.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement (Topic 820)*, which removes, modifies and adds various disclosure requirements around the topic in order to clarify and improve the cost-benefit nature of disclosures. For example, disclosures around transfers between fair value hierarchy levels will be removed and further detail around changes in unrealized gains and losses for the period and unobservable inputs determining Level 3 fair value measurements will be added. This standard is effective for interim and annual reporting periods beginning after December 15, 2019, and early adoption is permitted. The Company is currently evaluating the impact the new standard will have on its consolidated financial statements. This guidance is effective for the Company beginning with its fiscal year 2021, beginning on July 1, 2020.

In August 2018, the FASB issued ASU 2018-15, *Intangibles - Goodwill and Other - Internal-Use Software (Subtopic 350-40*), which aligns the requirements for capitalizing implementation costs incurred in a service contract hosting arrangement with those of developing or obtaining internal-use software. This standard is effective for interim and annual reporting periods beginning after December 15, 2019, and early adoption is permitted. The Company is currently evaluating the impact the new standard will have on its consolidated financial statements. This guidance is effective for the Company beginning with its fiscal year 2021, beginning on July 1, 2020.

Recently Adopted Accounting Pronouncements

In January 2016, the FASB issued ASU No. 2016-01, *Recognition and Measurement of Financial Assets and Financial Liabilities*, which provides guidance for the recognition, measurement, presentation, and disclosure of financial assets and liabilities. The guidance was adopted effective July 1, 2018 and the Company reclassified a $0.5 million unrealized gain, net of tax, related to its available-for-sale investments from accumulated other comprehensive loss to accumulated deficit as a cumulative-effect adjustment in the accompanying consolidated balance sheets. Future changes in fair value will be included in earnings in each period.

In August 2016, the FASB issued ASU 2016-15, *Classification of Certain Cash Receipts and Cash Payments* to provide guidance on the classification of eight cash flow issues in order to reduce diversity in practice. The Company adopted the new guidance effective July 1, 2018. The amendments in this update have been applied on a retrospective transition method to each period presented. The adoption of this guidance did not have a material effect on the Company's presentation of cash flows.

In October 2016, the FASB issued ASU 2016-16, *Income Taxes (Topic 740) - Intra-Entity Transfers of Assets Other Than Inventory*, which requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. Historically GAAP had prohibited the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset has been sold outside the consolidated group. The new guidance is effective for interim and annual reporting periods beginning after December 15, 2017. The Company adopted ASU 2016-16 effective July 1, 2018 on a modified retrospective basis. The adoption of this guidance did not have a material effect on the Company's financial statements.

In May 2017, the FASB issued ASU 2017-09, *Compensation—Stock Compensation (Topic 718): Scope of Modification Accounting*, which amends the scope of modification accounting for share-based payment arrangements and provides guidance on the types of changes to the terms or conditions of share-based payment awards to which an entity would be required to apply modification accounting under Topic 718. Specifically, an entity would not apply modification accounting if the fair value, vesting conditions, and classification of the awards are the same immediately before and after the modification. The Company adopted this guidance effective July 1, 2018, on a prospective basis. The adoption of this guidance did not have a material effect on the Company's financial statements.

3. Revenues

Revenue Recognition

The Company accounts for revenue in accordance with ASU 2014-09 *Revenue from Contracts with Customers* (Topic 606), which the Company adopted on July 1, 2017, using the retrospective method. The Company derives the majority of its revenue from sales of its networking equipment, with the remaining revenue generated from service fees relating to maintenance contracts, professional services, and training for its products. The Company sells its products and maintenance contracts direct to customers and to partners in two distribution channels, or tiers. The first tier consists of a limited number of independent distributors that stock its products and sell primarily to resellers. The second tier of the distribution channel consists of a non-stocking distributors and value-added resellers that sell directly to end-users. Products and services may be sold separately or in bundled packages.

The Company considers customer purchase orders, which in some cases are governed by master sales agreements, to be the contracts with a customer. For each contract, the Company considers the promise to transfer products and services, each of which are distinct, to be the identified performance obligations. In determining the transaction price, the Company evaluates whether the price is subject to refund or adjustment to determine the net consideration to which the Company expects to be entitled.

For all of the Company's sales and distribution channels, revenue is recognized when control of the product is transferred to the customer (i.e., when the Company's performance obligation is satisfied), which typically occurs at shipment for product sales. Revenue from maintenance contracts is recognized over time as the Company's performance obligations are satisfied. This is typically the contractual service period, which ranges from one to three years. For product sales to value-added resellers of the Company, non-stocking distributors and end-user customers, the Company generally does not grant return privileges, except for defective products during the warranty period, nor does the Company grant pricing credits. Sales taxes collected from customers are excluded from revenues. Shipping costs are included in cost of product revenues. Sales incentives and other programs that the Company may make available to these customers are considered to be a form of variable consideration and the Company maintains estimated accruals and allowances using the expected value method. There were no material changes in the current period to the estimated transaction price for performance obligations which were satisfied or partially satisfied during previous periods.

Sales to stocking distributors are made under terms allowing certain price adjustments and limited rights of return (known as "stock rotation") of the Company's products held in their inventory. Stock rotation rights grant the distributor the ability to return certain specified amounts of inventory. Stock rotation adjustments are an additional form of variable consideration and are estimated using the expected value method based on historical return rates. Frequently, distributors need to sell at a price lower than the contractual distribution price in order to win business and submit rebate requests for the Company's pre-approval prior to selling the product to a customer at the discounted price. At the time the distributor invoices its customer or soon thereafter, the distributor submits a rebate claim to the Company to adjust the distributor's cost from the contractual price to the pre-approved lower price. After the Company verifies that the claim was pre-approved, a credit memo is issued to the distributor for the rebate claim. In determining the transaction price, the Company considers these rebate adjustments to be variable consideration. Such price adjustments are estimated using the expected value method based on an analysis of actual claims, at the distributor level over a period of time considered adequate to account for current pricing and business trends. There were no material changes in the current period to the estimated variable consideration for performance obligations which were satisfied or partially satisfied during previous periods.

Performance Obligations. A performance obligation is a promise in a contract to transfer a distinct good or service to the customer and is the unit of account in Topic 606. A contract's transaction price is allocated to each distinct performance obligation and recognized as revenue when, or as, the performance obligation is satisfied. Certain of the Company's contracts have multiple performance obligations, as the promise to transfer individual goods or services is separately identifiable from other promises in the contracts and, therefore, is distinct. For contracts with multiple performance obligations, the Company allocates the contract's transaction price to each performance obligation based on its relative standalone selling price. The stand-alone selling prices are determined based on the prices at which the Company separately sells these products. For items that are not sold separately, the Company estimates the stand-alone selling prices using the best estimated selling price approach.

The Company's performance obligations are satisfied at a point in time or over time as work progresses. Substantially all of the Company's product revenues as reflected on the consolidated statements of operations for the years ended 2019, 2018 and 2017 are recognized at a point in time. Substantially all of the Company's service revenue is recognized over time. For revenue recognized over time, the Company uses an input measure, days elapsed, to measure progress.

At June 30, 2019, the Company had $203.2 million of remaining performance obligations, which is comprised of deferred maintenance revenue and services not yet delivered. The Company expects to recognize approximately 71 percent of its remaining performance obligations as revenue in fiscal 2020, an additional 16 percent by fiscal 2021 and 13 percent of the balance thereafter.

Contract Balances. The timing of revenue recognition, billings and cash collections results in billed accounts receivable and deferred revenue in the consolidated balance sheets. Services provided under renewable support arrangements of the Company are billed in accordance with agreed-upon contractual terms, which are typically at periodic intervals (e.g., quarterly or annually) with the corresponding revenue recognized over time throughout the contractual service period. The Company sometimes receives payments from its customers in advance of other services being provided, resulting in deferred revenues until the underlying performance obligations are satisfied. These liabilities are reported on the consolidated balance sheets on a contract-by-contract basis at the end of each reporting period. See Note 4 for contract balance information for accounts receivable and deferred revenue.

Revenue recognized for the years ended June 30, 2019 and 2018, that was included in the deferred revenue balance at the beginning of each period was $126.7 million and $76.6 million, respectively.

Contract Costs. The Company recognizes the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the Company otherwise would have recognized is one year or less. Management expects that commission fees paid to sales representatives as a result of obtaining service contracts and contract renewals, in excess of one year, are recoverable and therefore the Company capitalized them as contract costs in the amount of $6.5 million and $4.3 million at June 30, 2019 and 2018, respectively, in "Other assets" in the accompanying consolidated balance sheets. Capitalized commission fees are amortized on a straight-line basis over the average period of service contracts of approximately three years, and are included in "Sales and marketing" in the accompanying consolidated statements of operations. Amortization recognized during the years ended 2019, 2018 and 2017 was $3.0 million, $2.1 million and $1.5 million, respectively.

Revenue by Category: The following tables set forth the Company's revenue disaggregated by sales channel and geographic region based on the billing addresses of its customers (in thousands):

	Year Ended June 30, 2019		
Net Revenues	**Distributor**	**Direct**	**Total**
Americas:			
United States	$ 259,873	$ 238,832	$ 498,705
Other	22,264	20,632	42,896
Total Americas	282,137	259,464	541,601
EMEA:	229,223	129,104	358,327
APAC:	14,598	81,263	95,861
Total net revenues	$ 525,958	$ 469,831	$ 995,789

	Year Ended June 30, 2018		
Net Revenues	**Distributor**	**Direct**	**Total**
Americas:			
United States	$ 271,975	$ 219,642	$ 491,617
Other	19,414	25,274	44,688
Total Americas	291,389	244,916	536,305
EMEA:	218,682	136,064	354,746
APAC:	15,621	76,470	92,091
Total net revenues	$ 525,692	$ 457,450	$ 983,142

Net Revenues	Year Ended June 30, 2017 Distributor	Direct	Total
Americas:			
United States	$ 146,805	$ 161,175	$ 307,980
Other	11,861	13,022	24,883
Total Americas	158,666	174,197	332,863
EMEA:	135,414	84,658	220,072
APAC:	8,953	45,196	54,149
Total net revenues	$ 303,033	$ 304,051	$ 607,084

Concentrations

The Company may be subject to concentration of credit risk as a result of certain financial instruments consisting of accounts receivable and short-term investments. The Company performs ongoing credit evaluations of its customers and generally does not require collateral in exchange for credit.

The following table sets forth major customers accounting for 10% or more of the Company's net revenue:

	Year Ended June 30, 2019	June 30, 2018	June 30, 2017
Tech Data Corporation	18%	14%	16%
Jenne Corporation	17%	13%	15%
Westcon Group Inc.	12%	13%	12%

The following table sets forth major customers accounting for 10% or more of the Company's accounts receivable balance:

	June 30, 2019	June 30, 2018
Tech Data Corporation	12%	17%
Jenne Corporation	35%	13%

4. Balance Sheet Components

Cash, Cash Equivalents and Marketable Securities

The following is a summary of cash and marketable securities (in thousands):

	June 30, 2019	June 30, 2018
Cash	$169,607	$121,139
Marketable securities (consisting of available-for-sale securities)	—	1,459
Total cash and marketable securities	$169,607	$122,598

Marketable securities are recorded in "Prepaid expenses and other current assets" in the accompanying consolidated balance sheets.

Accounts Receivable

The following is a summary of Accounts receivable (in thousands):

	June 30, 2019	June 30, 2018
Accounts receivable	$ 201,365	$ 225,167
Allowance for doubtful accounts	(1,054)	(1,478)
Allowance for product returns	(25,897)	(11,266)
Accounts receivable, net	$ 174,414	$ 212,423

Accounts receivable, net decreased primarily due to strong collections during fiscal year 2019.

The following table is a summary of the allowance for doubtful accounts (in thousands):

Description	Balance at beginning of period	Charges to bad debt expenses	Deductions (1)	Balance at end of period
Year Ended June 30, 2019:				
Allowance for doubtful accounts	$1,478	$1,407	$(1,831)	$1,054
Year Ended June 30, 2018:				
Allowance for doubtful accounts	$1,190	$1,687	$(1,399)	$1,478
Year Ended June 30, 2017:				
Allowance for doubtful accounts	$1,648	$323	$(781)	$1,190

(1) Uncollectible accounts written off, net of recoveries

The following table is a summary of the Company’s allowance for product returns (in thousands):

Description	Balance at beginning of period	Additions	Deductions	Balance at end of period
Year Ended June 30, 2019:				
Allowance for product returns	$11,266	$85,190	$(70,559)	$25,897
Year Ended June 30, 2018:				
Allowance for product returns	$7,296	$38,103	$(34,133)	$11,266
Year Ended June 30, 2017:				
Allowance for product returns	$3,123	$31,034	$(26,861)	$7,296

Inventories

The following is a summary of the Company’s inventory by category (in thousands):

	June 30, 2019	June 30, 2018
Finished goods	$ 49,492	$ 49,393
Raw materials	14,097	14,474
Total Inventories	$ 63,589	$ 63,867

Property and Equipment, Net

	June 30, 2019	June 30, 2018
Computers and equipment	$ 72,309	$ 60,677
Purchased software	29,126	21,389
Office equipment, furniture and fixtures	10,815	14,980
Leasehold improvements	51,245	50,070
Total property and equipment	163,495	147,116
Less: accumulated depreciation and amortization	(89,941)	(68,597)
Property and equipment, net	$ 73,554	$ 78,519

The Company recognized depreciation expense of $26.9 million, $23.5 million, and $10.6 million related to property and equipment during the years ended 2019, 2018 and 2017, respectively.

Deferred Revenue

The following table summarizes contract liabilities which are shown as deferred revenue (in thousands):

	June 30, 2019	June 30, 2018
Deferred maintenance	$ 192,955	$ 164,986
Other deferred revenue	10,287	9,539
Total deferred revenue, net	203,242	174,525
Less: current portion	144,230	130,865
Non-current deferred revenue, net	$ 59,012	$ 43,660

Total deferred revenue increased primarily due to the extended duration period of new maintenance contracts during fiscal year 2019.

Accrued Warranty

The following table summarizes the activity related to the Company's product warranty liability during the following periods (in thousands):

	Year Ended	
	June 30, 2019	June 30, 2018
Balance beginning of period	$ 12,807	$ 10,584
Warranties assumed due to acquisitions	—	3,682
New warranties issued	22,919	10,491
Warranty expenditures	(20,947)	(11,950)
Balance end of period	$ 14,779	$ 12,807

Other Long-term Liabilities

The following is a summary of long-term liabilities (in thousands):

	June 30, 2019	June 30, 2018
Acquisition related deferred payments, less current portion	$ 9,604	$ 13,251
Contingent consideration obligations, less current portion	2,688	4,898
Other contractual obligations, less current portion	26,261	31,200
Other	15,597	9,751
Total other long-term liabilities	$ 54,150	$ 59,100

5. Fair Value Measurements

A three-tier fair value hierarchy is utilized to prioritize the inputs used in measuring fair value. The hierarchy gives the highest priority to quoted prices in active markets (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels are defined as follows:

- Level 1 Inputs - unadjusted quoted prices in active markets for identical assets or liabilities;
- Level 2 Inputs - quoted prices for similar assets and liabilities in active markets or inputs that are observable for the asset or liability, either directly or indirectly through market corroboration, for substantially the full term of the financial instrument; and
- Level 3 Inputs - unobservable inputs reflecting the Company's own assumptions in measuring the asset or liability at fair value.

The following table presents the Company's fair value hierarchy for its financial assets and liabilities measured at fair value on a recurring basis (in thousands):

June 30, 2019	Level 1	Level 2	Level 3	Total
Assets				
Investments:				
Marketable securities	$ —	$ —	$ —	$ —
Total assets measured at fair value	$ —	$ —	$ —	$ —
Liabilities				
Acquisition-related contingent consideration obligations	$ —	$ —	$ 6,298	$ 6,298
Total liabilities measured at fair value	$ —	$ —	$ 6,298	$ 6,298

June 30, 2018	Level 1	Level 2	Level 3	Total
Assets				
Investments:				
Marketable securities	$ 1,459	$ —	$ —	$ 1,459
Total assets measured at fair value	$ 1,459	$ —	$ —	$ 1,459
Liabilities				
Acquisition-related contingent consideration obligations	$ —	$ —	$ 12,749	$ 12,749
Total liabilities measured at fair value	$ —	$ —	$ 12,749	$ 12,749

Level 1 investments:

The Company holds an investment in marketable equity securities at Level 1 as the investment has readily determinable fair value (see below, Level 3 investments). An unrealized holding gain on the investment of $0.5 million as of June 30, 2018 was reclassified from accumulated other comprehensive loss to accumulated deficit on July 1, 2018 upon an adoption of ASU 2016-01 (see Note 2).

During fiscal 2015, the Company purchased a $3.0 million equity interest in a company that operated in the enterprise software platform industry. In September 2017, the investee was acquired by a third party. The Company received $6.8 million in consideration for its equity interest in the investee, including $5.4 million in cash and 65,937 shares of the third party's publicly-traded common stock (the "Acquirer's common stock") with a market value of $1.4 million. During fiscal 2018, the Company received $5.8 million of the consideration, consisting of $4.9 million in cash and 41,685 shares with a market value of $0.9 million. A gain of $3.8 million related to the 2018 sale was recorded in Other expense for the year ended June 30, 2018. During the fourth quarter of fiscal 2019, the shares were released from escrow and the Company sold the remaining shares of the Acquirer's common stock and recorded a loss of $0.1 million.

Level 2 investments:

The Company includes U.S. government and sovereign obligations, most government agency securities, investment-grade corporate bonds, and state, municipal and provincial obligations for which quoted prices are available as Level 2. There were no transfers of assets or liabilities between Level 1 and Level 2 for the periods presented.

The fair value of the borrowings under the Credit Agreement is estimated based on valuations provided by alternative pricing sources supported by observable inputs which is considered Level 2. Due to the short duration until maturity of the Credit Agreement, the fair value approximates the face amount of the Company's indebtedness of $180.5 million and $200.0 million as of June 30, 2019 and 2018, respectively. Such differences are immaterial for all periods presented.

Level 3 investments:

Certain of the Company's assets, including intangible assets and goodwill are measured at fair value on a non-recurring basis if impairment is indicated.

During the year ended June 30, 2018, the Company recorded a liability for contingent consideration related to its acquisition of the CF Business. The fair value measurement of the contingent consideration obligations is determined using Level 3 inputs. The fair value of contingent consideration obligations is based on a discounted cash flow model. These fair value measurements represent Level 3 measurements as they are based on significant inputs not observable in the market. Significant judgment is employed in determining the appropriateness of these assumptions as of the acquisition date and for each subsequent period. Accordingly, changes in assumptions could have a material impact on the amount of contingent consideration expense the Company records in any given period. Changes in the value of the contingent consideration obligations would be recorded in general and administrative expenses in the accompanying consolidated statements of operations.

The change in the acquisition-related contingent consideration obligations is as follows (in thousands):

	Year Ended June 30, 2019
Beginning balance	$ 12,749
Payments	(6,506)
Accretion on discount	244
Adjustments	(189)
Ending balance	$ 6,298

There were no transfers of assets or liabilities between Level 2 and Level 3 during the year ended June 30, 2019 or 2018. There were no impairments recorded for the year ended June 30, 2019 or 2018.

6. Goodwill and Intangible Assets

The following table reflects the changes in the carrying amount of goodwill (in thousands):

	June 30, 2019
Balance as of June 30, 2018	$ 139,082
Changes due to additional property and equipment acquired (See Note 11)	(505)
Balance at end of period	$ 138,577

The following tables summarize the components of gross and net intangible asset balances (in thousands, except years):

	Weighted Average Remaining Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
June 30, 2019				
Developed technology	2.4 years	$ 117,000	$ 77,449	$ 39,551
Customer relationships	2.0 years	51,639	44,410	7,229
Maintenance contracts	— years	17,000	17,000	—
Trade names	2.4 years	9,100	5,647	3,453
License agreements	5.4 years	2,445	1,661	784
Other intangibles	0.6 years	1,382	1,287	95
Total intangibles, net		$ 198,566	$ 147,454	$ 51,112

	Weighted Average Remaining Amortization Period	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
June 30, 2018				
Developed technology	3.3 years	$ 117,000	$ 58,299	$ 58,701
Customer relationships	3.0 years	51,639	40,634	11,005
Maintenance contracts	0.3 years	17,000	15,866	1,134
Trade names	3.4 years	9,100	4,141	4,959
Backlogs	— years	1,800	1,800	—
License agreements	5.8 years	2,445	1,390	1,055
Other intangibles	1.6 years	1,382	1,144	238
Total intangibles, net		$ 200,366	$ 123,274	$ 77,092

The following table summarizes the amortization expense of intangibles for the periods presented (in thousands):

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Amortization in “Cost of revenues: Product”	$ 19,638	$ 16,870	$ 7,020
Amortization of intangibles in "Operations"	6,346	8,715	8,702
Total amortization	$ 25,984	$ 25,585	$ 15,722

The amortization expense that is recognized in "Cost of revenues: Product" is comprised of amortization for developed technology, license agreements and other intangibles.

The estimated future amortization expense to be recorded for each of the respective future fiscal years is as follows (in thousands):

For the fiscal year ending:	
2020	$ 22,898
2021	20,819
2022	6,271
2023	875
2024	71
Thereafter,	178
Total	$ 51,112

7. Debt

Debt

The Company's debt is comprised of the following (in thousands):

	June 30, 2019	June 30, 2018
Current portion of long-term debt:		
Term Loan	$ 9,500	$ 9,500
Less: unamortized debt issuance costs	(489)	(493)
Current portion of long-term debt	$ 9,011	$ 9,007
Long-term debt, less current portion:		
Term Loan	$ 171,000	$ 180,500
Revolving Facility	—	10,000
Less: unamortized debt issuance costs	(1,261)	(1,751)
Total long-term debt, less current portion	169,739	188,749
Total debt	$ 178,750	$ 197,756

On May 1, 2018, the Company entered into a Credit Agreement (the "2018 Credit Agreement"), by and among the Company, as borrower, BMO Harris Bank N.A., as an issuing lender and swingline lender, Bank of Montreal, as administrative and collateral agent, and the financial institutions or entities that are a party thereto as lenders. The 2018 Credit Agreement provides for i) a $40 million five-year revolving credit facility (the "2018 Revolving Facility"), ii) a $190 million five-year term loan (the "2018 Term Loan") and, iii) an uncommitted additional incremental loan facility in the principal amount of up to $100 million ("2018 Incremental Facility"). On May 1, 2018, the Company borrowed $200 million under the 2018 Credit Agreement in order to pay off existing debt and for general corporate purposes.

Borrowings under the 2018 Credit Agreement bear interest, at the Company's election, as of May 1, 2018, at a rate per annum equal to LIBOR plus 1.50% to 2.75%, or the adjusted base rate plus 0.50% to 1.75%, based on the Company's Consolidated Leverage Ratio. In addition, the Company is required to pay a commitment fee of between 0.25% and 0.40% quarterly (currently 0.35%) on the unused portion of the 2018 Revolving Facility, also based on the Company's consolidated leverage ratio. Principal installments are payable on the 2018 Term Loan in varying percentages quarterly starting September 30, 2018 and to the extent not previously paid, all outstanding balances are to be paid at maturity. The 2018 Credit Agreement is secured by substantially all of the Company's assets.

The 2018 Credit Agreement requires the Company to maintain certain minimum financial ratios at the end of each fiscal quarter. The 2018 Credit Agreement also includes covenants and restrictions that limit, among other things, the Company's ability to incur additional indebtedness, create liens upon any of its property, merge, consolidate or sell all or substantially all of its assets. The 2018 Credit Agreement also includes customary events of default which may result in acceleration of the outstanding balance. At June 30, 2019, we were in compliance with the covenants of the 2018 Credit Agreement.

Financing costs incurred in connection with obtaining long-term financing are deferred and amortized over the term of the related indebtedness or credit agreement. During the year ended June 30, 2018, in conjunction with the 2018 Credit Agreement, as noted above, the Company recorded a loss from an extinguishment of debt of $1.2 million in "Interest expense" in the accompanying consolidated statements of operations and incurred $1.5 million of deferred financing costs.

Amortization of deferred financing costs is included in “Interest expense” in the accompanying consolidated statements of operations, totaled $0.6 million, $0.7 million and $0.5 million in fiscal years 2019, 2018 and 2017, respectively.

The Company had $35.5 million of availability under the 2018 Revolving Facility as of June 30, 2019. The Company had $4.5 million of outstanding letters of credit as of June 30, 2019.

The Company’s debt principal repayment schedule by period is as follows, excluding unamortized debt issuance costs (in thousands):

For the fiscal year ending:		
2020	$	9,500
2021		14,250
2022		14,250
2023		142,500
Total	$	180,500

8. Commitments and Contingencies

Leases

The Company currently leases its current headquarters, research and development facilities and office spaces for its various United States and international operations. Certain leases contain rent escalation clauses and renewal options. As part of the Company’s existing leased facilities, the Company occasionally receives lease incentives payments from the landlord which are used to make leasehold improvements on the respective facility. The Company depreciates the leasehold improvements over the useful life of the assets or the lease term, whichever is shorter. The lease incentives payments are deferred and amortized on a straight-line basis over the term of the lease as an offset to rent expense.

Future annual minimum lease payments under all non-cancelable operating leases having initial or remaining lease terms in excess of one year at June 30, 2019, were as follows (in thousands):

For the fiscal year ending:		Future Lease Payments
2020	$	22,733
2021		21,174
2022		20,680
2023		17,828
2024		5,976
Thereafter		16,287
Total minimum payments	$	104,678

Rent expense was $13.3 million, $12.9 million and $9.4 million in fiscal years ended 2019, 2018 and 2017, respectively.

Purchase Commitments

The Company currently has arrangements with contract manufacturers and suppliers for the manufacture of its products. The arrangements allow them to procure long lead-time component inventory based upon a rolling production forecast provided by the Company. The Company is obligated to the purchase of long lead-time component inventory that its contract manufacturer procures in accordance with the forecast, unless the Company gives notice of order cancellation outside of applicable component lead-times. As of June 30, 2019, the Company had non-cancelable commitments to purchase $51.2 million of such inventory, which will be received and consumed during the first half of fiscal 2020. The Company expects to utilize its non-cancelable purchase commitments in the normal ongoing operations.

Legal Proceedings

The Company may from time to time be party to litigation arising in the course of its business, including, without limitation, allegations relating to commercial transactions, business relationships or intellectual property rights. Such claims, even if not meritorious, could result in the expenditure of significant financial and managerial resources. Litigation in general, and intellectual property and securities litigation in particular, can be expensive and disruptive to normal business operations. Moreover, the results of legal proceedings are difficult to predict.

In accordance with applicable accounting guidance, the Company records accruals for certain of its outstanding legal proceedings, investigations or claims when it is probable that a liability will be incurred and the amount of loss can be reasonably estimated. The Company evaluates, at least on a quarterly basis, developments in legal proceedings, investigations or claims that could affect the amount of any accrual, as well as any developments that would result in a loss contingency to become both probable and reasonably estimable. When a loss contingency is not both probable and reasonably estimable, the Company does not record a loss accrual. However, if the loss (or an additional loss in excess of any prior accrual) is at least a reasonable possibility and material, then the Company would disclose an estimate of the possible loss or range of loss, if such estimate can be made, or disclose that an estimate cannot be made. The assessment whether a loss is probable or a reasonable possibility, and whether the loss or a range of loss is estimable, involves a series of complex judgments about future events. Even if a loss is reasonably possible, the Company may not be able to estimate a range of possible loss, particularly where (i) the damages sought are substantial or indeterminate, (ii) the proceedings are in the early stages, or (iii) the matters involve novel or unsettled legal theories or a large number of parties. In such cases, there is considerable uncertainty regarding the ultimate resolution of such matters, including the amount of any possible loss, fine or penalty. Accordingly, for current proceedings, except as noted below, the Company is currently unable to estimate any reasonably possible loss or range of possible loss. However, an adverse resolution of one or more of such matters could have a material adverse effect on the Company's results of operations in a particular quarter or fiscal year.

Brazilian Tax Assessment Matters

On May 28, 2007, the Public Treasury Department of the State of Sao Paolo, Brazil (the “Tax Authority”) assessed the Company’s Brazilian subsidiary, Enterasys Networks do Brasil Ltda. (“Enterasys Brasil”), based on an alleged underpayment of taxes. The Tax Authority also charged interest and penalties with respect to the assessment (collectively, the “ICMS Tax Assessment”). The Tax Authority denied Enterasys Brasil the use of certain presumed tax credits granted by the State of Espirito Santo, Brazil under the terms of the FUNDAP program for the period from February 2003 to December 2004. The value of the disallowed presumed tax credits is BRL 3.4 million (USD $0.9 million), excluding interest and penalties. All currency conversions in this Legal Proceedings section are as of June 30, 2019.

Unable to resolve the matter at the administrative level, on October 1, 2014, Enterasys Brasil filed a lawsuit in the 11th Public Treasury Court of the Sao Paolo State Court of Justice (Judiciary District of Sao Paolo) to overturn or reduce the ICMS Tax Assessment. As part of this lawsuit, Enterasys Brasil requested a stay of execution, so that no tax foreclosure could be filed and no guarantee would be required until the court issued its final ruling. On or about October 6, 2014, the court granted a preliminary injunction staying any execution on the assessment, but requiring that Enterasys Brasil deposit the assessed amount with the court. Enterasys Brasil appealed this ruling and, on or about January 28, 2015, the appellate court ruled that no cash deposit (or guarantee) was required. In a decision dated August 28, 2017, and published on October 3, 2017, the court validated the assessment and penalty imposed by the Tax Authority but ruled that the Tax Authority was charging an unlawfully high interest rate on the tax assessment and penalty amounts and ordered the interest rate reduced to the maximum Federal rate. The August 28, 2017, decision, were it to become final, would require Enterasys Brasil to pay a total of BRL 20.0 million (USD $5.2 million), which includes penalties, court costs, attorneys’ fees, and accrued interest as of June 30, 2019. The Company believes the ICMS Tax Assessment against Enterasys Brasil is without merit and has appealed the lower court’s decision. The appellate court ruled that no cash deposit (or guarantee) is required during the pendency of the appeal.

Based on the currently available information, the Company believes the ultimate outcome of the ICMS Tax Assessment litigation will not have a material adverse effect on the Company's financial position or overall results of operations. However, due to the complexities and uncertainty surrounding the judicial process in Brazil and the nature of the claims asserted, there can be no assurance of a favorable outcome for Enterasys Brasil, which recorded an accrual of BRL 9.4 million (USD $2.5 million) as of the date the Company acquired Enterasys Networks.

The Company made a demand on April 11, 2014, for a defense from, and indemnification by, the former equity holder of Enterasys Networks, Inc. ("Seller") in connection with the ICMS Tax Assessment. Seller agreed to assume the defense of the ICMS Tax Assessment on May 20, 2014. In addition, through the settlement of an indemnification-related lawsuit with the Seller on June 18, 2015, Seller agreed to continue to defend the Company with respect to the ICMS Tax Assessment and to indemnify the Company for losses related thereto subject to certain conditions. These conditions include the offsetting of foreign income tax benefits realized by the Company in connection with the acquisition of Enterasys. Based upon current projections of the foreign income tax benefits to be realized, and the potential liability in the event of an adverse final judgment in the ICMS Tax Assessment litigation, the Company does not presently anticipate that any amounts under the indemnification will be due from the Seller in connection with the ICMS Tax Assessment.

In re Extreme Networks, Inc. Securities Litigation

On October 23 and 29, 2015, punitive class action complaints alleging violations of securities laws were filed in the U.S. District Court for the Northern District of California against the Company and three of its former officers (Charles W. Berger, Kenneth B. Arola, and John T. Kurtzweil). Subsequently, the cases were consolidated (In re Extreme Networks, Inc. Securities Litigation, No. 3:15-CY-04883-BLF). Plaintiffs allege that defendants violated the securities laws by disseminating materially false and misleading statements and concealing material adverse facts regarding the Company's financial condition, business operations and growth prospects. Plaintiffs seek unspecified damages on behalf of a purported class of investors who purchased the Company's common stock from September 12, 2013, through April 9, 2015. On June 28, 2016, the Court appointed a lead plaintiff. On September 26, 2016, the lead plaintiff filed a consolidated complaint. On November 10, 2016, defendants filed a motion to dismiss, which the Court granted with leave to amend on April 27, 2017. On June 2, 2017, the lead plaintiff filed an amended complaint, which, on July 10, 2017, defendants again moved to dismiss. In a March 21, 2018, Order (the "March 2018 Order"), the Court granted in part and denied in part the defendants' motion. The March 2018 Order narrowed the scope of the case, but allowed certain claims to proceed. The parties agreed to settle the litigation. On November 30, 2018, plaintiffs filed an unopposed motion for preliminary approval of the settlement, and on December 6, 2018, Extreme filed a statement of non-opposition. The preliminary hearing took place on March 7, 2019, and the court approved the settlement amount at the final hearing which took place on June 20, 2019.

XR Communications, LLC d/b/a Vivato Technologies, LLC v. Extreme Networks, Inc.

On April 19, 2017, XR Communications, LLC ("XR") (d/b/a Vivato Technologies) filed a patent infringement lawsuit against the Company in the Central District of California (*XR Communications, LLC, dba Vivato Technologies v. Extreme Networks, Inc.*, No. 2:17-cv-2953-AG). The operative Second Amended Complaint asserts infringement of U.S. Patent Nos. 7,062,296, 7,729,728, and 6,611,231 based on the Company's manufacture, use, sale, offer for sale, and/or importation into the United States of certain access points and routers supporting multi-user, multiple-input, multiple-output technology. XR seeks unspecified damages, on-going royalties, pre- and post-judgment interest, and attorneys' fees (but no injunction). In orders dated April 10 and May 22, 2018, the Court stayed the case pending a resolution by the Patent Trial and Appeal Board ("PTAB") of inter partes review (IPR) petitions filed by several defendants in other XR-related patent lawsuits challenging the validity of the asserted patents. The PTAB has now instituted IPR proceedings as to all three patents and all patent claims asserted in the litigation. Given the stay, the Court took off calendar all previously scheduled events (including a *Markman* hearing and potential trial date). During a status conference on February 11, 2019, the Court continued the stay and set a status conference for December 2, 2019. The Company believes the claims are without merit and intends to defend them vigorously.

Orckit IP, LLC v. Extreme Networks, Inc., Extreme Networks Ireland Ltd., and Extreme Networks GmbH

On February 1, 2018, Orckit IP, LLC ("Orckit") filed a patent infringement lawsuit against the Company and its Irish and German subsidiaries in the District Court in Dusseldorf, Germany. The lawsuit alleges direct and indirect infringement of the German portion of European Patent EP 1 958 364 B1 based on the offer, distribution, use, possession and/or importation into Germany of certain network switches equipped with the ExtremeXOS operating system. Orckit is seeking injunctive relief, accounting, and an unspecified declaration of liability for damages and costs of the lawsuit. On May 3, 2018, Extreme Networks GmbH filed a separate nullity action in the Federal Patent Court in Munich, seeking to invalidate the asserted patents, and on May 4, 2018, the defendants answered the infringement complaint, denying any infringement and seeking a stay of the action pending the conclusion of the nullity action. The District Court Düsseldorf scheduled a hearing in this case for January 28, 2020.

On April 23, 2019, Orckit filed and extension of the patent infringement complaint against the Company and its Irish and German subsidiaries in the District Court in Dusseldorf, Germany. With this extension, Orckit alleges infringement of the German portion of European Patent EP 3 068 077 B1 based on the offer, distribution, use, possession and/or importation into Germany of certain network switches. Orckit is seeking injunctive relief, accounting and sales information, and a declaration of liability for damages as well as costs of the lawsuit. No hearing has been scheduled yet in this case, which was split from the original action involving the first patent in suit.

The Company believes that all claims are without merit and defends them vigorously.

Global Innovation Aggregators, LLC v. Extreme Networks, Inc.; Extreme Networks China Limited; Extreme Networks Technology (Beijing) Co., Ltd.; and Shenzhen Yingzhixiang Technology Co.

In January 2019, Global Innovation Aggregators, LLC ("GIA") filed six patent infringement lawsuits against the Company and its Chinese and Hong Kong subsidiaries and Shenzhen Yingzhixiang Technology Co., Ltd. in Shenzhen Intermediate People's Court in China. The six patents at issue are ZL200610168028.1, ZL200510120823.9, ZL200410057124.X, ZL200410070933.4, ZL200510103486.2, and ZL200610060686.9. Each patent was asserted in a separate law suit. The filing date for the first case is January 18, 2019, and the filing date for the rest of the cases is January 23, 2019. The trial for the first case is currently scheduled for January 15, 2020, and trials for the rest of the cases have not yet been scheduled. The products at issue include the Summit X440-G2 series, X450-G2 series, X460-G2 series, X620 series, X670-G2 series, X770 series, X870 series, X690 series, and X590 series. GIA is a U.S. entity established under the laws of Delaware with its principal office in Pasadena, California. Extreme disputes GIA's claims and intends to defend the matter vigorously. Additionally, Extreme has filed invalidity challenges with the Chinese patent office to challenge the validity of each asserted patent. Oral invalidity hearings were held in July and August 2019. Given the uncertainty of litigation and the preliminary stage of the case, Extreme cannot estimate at this time the possible loss or range of loss that may result from this action.

Indemnification Obligations

Subject to certain limitations, the Company may be obligated to indemnify its current and former directors, officers and employees. These obligations arise under the terms of its certificate of incorporation, its bylaws, applicable contracts, and applicable law. The obligation to indemnify, where applicable, generally means that the Company is required to pay or reimburse, and in certain circumstances the Company has paid or reimbursed, the individuals' reasonable legal expenses and possibly damages and other liabilities incurred in connection with certain legal matters. For example, the Company currently is paying or reimbursing legal expenses being incurred by certain current and former officers and directors in connection with the shareholder litigation described above. The Company also procures Directors and Officers insurance to help cover its defense and/or indemnification costs, although its ability to recover such costs through insurance is uncertain. While it is not possible to estimate the maximum potential amount that could be owed under these indemnification agreements due to the Company's limited history with prior indemnification claims, indemnification (including defense) costs could, in the future, have a material adverse effect on the Company's consolidated financial position, results of operations and cash flows. As of June 30, 2019, the Company has the outstanding indemnification claims described above.

9. Stockholders' Equity

Preferred Stock

In April 2001, in connection with the entering into of the Company's Rights Agreement, the Company authorized the issuance of preferred stock. The preferred stock may be issued from time to time in one or more series. The Board of Directors is authorized to provide for the rights, preferences and privileges of the shares of each series and any qualifications, limitations or restrictions on these shares. As of June 30, 2019, no shares of preferred stock were outstanding.

Stockholders' Rights Agreement

On April 26, 2012, the Company entered into an Amended and Restated Rights Agreement between the Company and Computershare Shareholder Services LLC as the rights agent (the "Restated Rights Plan"). The Restated Rights Plan governs the terms of each right ("Right") that has been issued with respect to each share of Common Stock of Extreme Networks. Each Right initially represents the right to purchase one one-thousandth of a share of the Company's Preferred Stock. The Restated Rights Plan replaces in its entirety the Rights Agreement, dated as of April 27, 2001, as subsequently amended, between the Company and Mellon Investor Services LLC (the "Prior Rights Plan").

The Board adopted the Restated Rights Plan to preserve the value of deferred tax assets, including net operating loss carry forwards of the Company, with respect to its ability to fully use its tax benefits to offset future income which may be limited if the Company experiences an "ownership change" for purposes of Section 382 of the Internal Revenue Code of 1986 as a result of ordinary buying and selling of its common stock. Following its review of the terms of the plan, the Board decided it was necessary and in the best interests of the Company and its stockholders to enter into the Restated Rights Plan. The Restated Rights Plan incorporates the Prior Rights Plan and the amendments thereto into a single agreement and extended the term of the Prior Rights Plan to April 30, 2013. Each year since 2013 the Board and shareholders have approved an amendment providing for a one-year extension of the term of the Restated Rights Plan. Our Board of Directors unanimously approved an amendment to the Restated Plan on May 9, 2019 to extend the Restated Rights Plan through May 31, 2020, subject to ratification by a majority of the stockholders of the Company at the next annual shareholders meeting.

Common Stock Repurchases

On November 2, 2018, the Company announced that the Board had authorized management to repurchase up to $60.0 million of the Company’s common stock for two years from the date of authorization. Purchases may be made from time to time in the open market or in privately negotiated transactions. A maximum of $35.0 million of the Company’s common stock may be repurchased in any calendar year.

The following table summarizes the Company's shares repurchases under its stock repurchase program (in thousands, except per share amounts):

	Year Ended June 30, 2019	
Total number of shares repurchased		2,366
Average price paid per share	$	6.34
Dollar value of shares repurchased	$	15,000
Dollar value of shares that may yet be repurchased under program	$	45,000

10. Employee Benefit Plans

As of June 30, 2019, the Company has the following share-based compensation plans:

2013 Equity Incentive Plan

The 2013 Equity Incentive Plan (the “2013 Plan”) was approved by stockholders on November 20, 2013. The 2013 Plan replaced the 2005 Equity Incentive Plan (the “2005 Plan”). Under the 2013 Plan, the Company may grant stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance units, and other share-based or cash-based awards to employees and consultants. The 2013 Plan also authorizes the grant of awards of stock options, stock appreciation rights, restricted stock and restricted stock units to non-employee members of the Board of Directors and deferred compensation awards to officers, directors and certain management or highly compensated employees. The 2013 Plan authorized the issuance of 9.0 million shares of the Company’s common stock. In addition, up to 12.7 million shares subject to stock options and awards available for issuance under the 2005 Plan may be transferred to the 2013 Stock Plan and would be added to the number of shares available for future grant under the 2013 Plan. The 2013 Plan includes provisions upon the granting of certain awards defined by the 2013 Plan as Full Value Awards in which the shares available for grant under the 2013 Plan are decremented 1.5 shares for each such award granted. Upon forfeiture or cancellation of unvested awards, the same ratio is applied in returning shares to the 2013 Plan for future issuance as was applied upon granting. During the fiscal years ended June 30, 2018 an additional 9.0 million shares were authorized and made available for grant under the 2013 Plan. As of June 30, 2019, total options and awards to acquire 9.7 million shares were outstanding under the 2013 Plan and 8.5 million shares are available for grant under the 2013 Plan. Options granted under this plan have a contractual term of seven years.

Enterasys 2013 Stock Plan

Pursuant to the acquisition of Enterasys on October 31, 2013, the Company assumed the Enterasys 2013 Stock Plan (the “Enterasys Plan”). As of June 30, 2019, total options to acquire 0.7 million shares were outstanding under the Enterasys Plan. Options granted under this plan have a contractual term of seven years. No future grants may be made from the Enterasys Plan.

2005 Equity Incentive Plan

The 2005 Plan was adopted by the Company’s Board of Directors on October 20, 2005, and approved by stockholders on December 2, 2005. The 2005 Plan replaced the Amended 1996 Stock Option Plan (the “1996 Plan”), the 2000 Non-statutory Stock Option Plan and the 2001 Non-statutory Stock Option Plan. The 2005 Plan includes provisions upon the granting of certain awards defined by the 2005 Plan as Full Value Awards in which the shares available for grant under the 2005 Plan are decremented 1.5 shares for each such award granted. Upon forfeiture or cancellation of unvested awards, the same ratio is applied in returning shares to the 2005 Plan for future issuance as was applied upon granting. Effective November 20, 2013, the 2005 Plan was replaced with the 2013 Plan, and, as of June 30, 2019, total options to acquire 0.1 million shares were outstanding under the 2005 Plan. No future grants may be made from the 2005 Plan, however, outstanding options and awards forfeited or canceled were allowed to be transferred to the 2013 Plan until December 2, 2015, at which time, no further shares may be transferred. A total of 6.6 million shares were transferred to the 2013 Plan.

Shares Reserved for Issuance

The following are shares reserved for issuance (in thousands):

	June 30, 2019	June 30, 2018
2013 Equity Incentive Plan shares available for grant	8,462	9,957
Employee stock options and awards outstanding	10,455	12,060
2014 Employee Stock Purchase Plan	10,085	5,365
Total shares reserved for issuance	29,002	27,382

Stock Options

The following table summarizes stock option activity under all plans (shares and intrinsic value in thousands):

	Number of Shares	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Options outstanding at June 30, 2018	2,193	$ 3.88	2.90	$ 8,996
Granted	852	6.40		
Exercised	(252)	3.84		
Cancelled	(74)	6.01		
Options outstanding at June 30, 2019	2,719	$ 4.61	3.26	$ 5,070
Vested and expected to vest at June 30, 2019	2,719	$ 4.61	3.26	$ 5,070
Exercisable at June 30, 2019	1,939	$ 3.88	2.09	$ 5,016

The total intrinsic value of options exercised in fiscal years 2019, 2018 and 2017 was $0.8 million, $6.3 million and $5.7 million, respectively.

The weighted average estimated fair value of stock options granted in fiscal year 2019 was $2.62 per share. There were no stock options granted in fiscal 2018 or 2017. As of June 30, 2019, there was $1.0 million of total unrecognized compensation cost related to unvested stock options that will be fully recognized in fiscal 2020.

During the first quarter of fiscal 2019, the Company granted 851,700 Performance Stock Options ("PSOs") to certain officers and executive vice presidents that will vest if the Company's stock price achieves a price hurdle of $10.00 during the three-year performance period from August 29, 2018 through August 31, 2021. The price hurdle will be deemed to have been achieved if, at any time over the performance period, the Company's stock maintains a price of $10.00 for 30 consecutive days. If the price hurdle is achieved, the PSOs will vest as follows:

If the price hurdle is met before or on August 31, 2019, one-third of the PSOs will vest on August 31, 2019 and the remainder will vest quarterly over two years.

If the price hurdle is met after August 31, 2019, a number of the PSOs will vest (ratably calculated based upon the time elapsed between August 31, 2018 and the date the hurdle is met) and the remainder will vest quarterly through August 31, 2021. The grant date fair value was $2.62.

Stock Awards

Stock awards may be granted under the 2013 Plan on terms approved by the Compensation Committee of the Board of Directors. Stock awards generally provide for the issuance of restricted stock units ("RSUs"), including performance or market-based restricted stock units ("PSUs") which vest over a fixed period of time or based upon the satisfaction of certain performance criteria. The Company recognizes compensation expense on the awards over the vesting period based on the award's intrinsic value as of the date of grant.

The following table summarizes stock award activity (shares and market value in thousands):

	Number of Shares	Weighted- Average Grant Date Fair Value	Aggregate Fair Market Value
Non-vested stock awards outstanding at June 30, 2018	7,764	$ 8.60	
Granted	4,698	6.39	
Released	(3,637)	7.72	
Cancelled	(1,089)	8.58	
Non-vested stock awards outstanding at June 30, 2019	7,736	$ 7.67	$ 49,700
Vested and expected to vest at June 30, 2019	7,406	$ 7.53	$ 47,568

The aggregate fair value, as of the respective vesting dates of RSUs vested during the years ended 2019, 2018 and 2017 was $30.0 million, $51.2 million and $9.1 million, respectively.

Fiscal 2019 PSU

During fiscal 2019, the Company approved the grant of 0.9 million stock awards to its named executive officers and directors. Of this amount, 0.2 million of these stock awards were in the form of PSUs and 0.7 million of the stock awards granted were in the form of service-based RSUs. In addition, approximately 0.4 million PSU's were also granted to other vice president level employees for a total to all employees of 0.6 million PSU's, all of which had a grant date fair value of $6.40. The RSUs vest from the original grant date as to one-third (1/3) on the one-year anniversary and one-twelfth (1/12) each quarter thereafter, subject to continued service to the Company.

The PSUs referenced in the preceding paragraph will be considered earned once the Company's U.S. GAAP earnings aggregates at least $0.20 per share over two consecutive quarters (the "2019 Performance Threshold"). Upon satisfying the 2019 Performance Threshold, the PSUs will vest with respect to the same number of RSUs that have vested which were granted on the same date and thereafter, will vest on the same schedule as the RSUs, subject to continued service to the Company. If the 2019 Performance Threshold is not met by the third anniversary of the grant date, the award is canceled. In addition, the 2019 Performance Threshold will be deemed satisfied upon the closing of a Change in Control (within the meaning of the Company's 2013 Equity Incentive Plan) in the event the per share consideration received by the Company's stockholders equals or exceeds $10.00 per share. During the year ended June 30, 2019, none of the PSU grants referenced above achieved their 2019 Performance Threshold.

Fiscal 2018 PSU

During fiscal 2018, the Company approved the grant of 1.2 million stock awards to its vice president level employees or above ("execs"), including 0.6 million stock awards to its named executive officers. Fifty percent (50%) of the stock awards granted to the execs, except the chief executive officer, were in the form of PSUs and fifty percent (50%) of the stock awards granted were in the form of service-based RSUs. The Company's chief executive officer received sixty percent (60%) of his stock award grant in the form of PSUs, while forty percent (40%) of this award were in the form of RSUs. The RSUs vest from the original grant date as to one-third (1/3) on the one-year anniversary and one-twelfth (1/12) each quarter thereafter, subject to continued service to the Company.

The PSUs referenced in the preceding paragraph will be considered earned originally once the Company's U.S. GAAP earnings aggregates at least $0.32 per share over two consecutive quarters (the Performance Threshold"). During the third quarter of fiscal 2019, the compensation committee of the Board of Directors modified the 2018 Performance Threshold of $0.32 earnings per share over two consecutive quarters for PSUs issued in fiscal 2018, to $0.20 earnings per share over two consecutive quarters. Upon satisfying the 2018 Performance Threshold, the PSUs will vest with respect to the same number of RSUs that have vested which were granted on the same date and thereafter, will vest on the same schedule as the RSUs, subject to continued service to the Company. If the 2018 Performance Threshold is not met by the third anniversary of the grant date, the award is canceled. In addition, the 2018 Performance Threshold will be deemed satisfied upon the closing of a Change in Control (within the meaning of the Company's 2013 Equity Incentive Plan) in the event the per share consideration received by the Company's stockholders equals or exceeds $16.00 per share; or, in the event the consideration is less than $16.00 per share, the number of PSUs deemed to be earned will be determined by multiplying the number of PSUs by the ratio of the aggregate earnings per share of the last two quarters prior to the Change of Control to the $0.32 Performance Threshold. The grant date fair value per share of the PSUs referenced above was $10.90. During the year ended June 30, 2019, none of the PSU grants referenced above achieved their 2018 Performance Threshold.

During fiscal 2018, the Company approved the grant of 0.1 million stock awards with market-based vesting criteria to certain execs with grant date fair values per share ranging from $10.61 to $12.19 determined by using the Monte-Carlo simulation model.

Fiscal 2017 PSU

During fiscal 2017, the Company approved the grant of 1.5 million stock awards to its execs, including 0.7 million stock awards to its named executive officers. Fifty percent (50%) of the stock awards granted to the execs were in the form of PSUs and fifty percent (50%) of the stock awards granted were in the form of RSUs. The RSUs vest from the original grant date as to one-third (1/3) on the one-year anniversary and one-twelfth (1/12) each quarter thereafter, subject to continued service to the Company.

The PSUs referenced in the preceding paragraph were considered earned once the Company's stock price equaled or exceeded $5.00 per share for 30 consecutive trading days after January 1, 2017 (the "2017 Performance Threshold"). The grant date fair values per share of the PSUs were determined by using the Monte-Carlo simulation model, ranging $3.02 to $3.09. The assumptions used in the Monte-Carlo simulation includes the expected volatility of 56%, risk-free rate of 0.9%, no expected divided yield, expected term of 3.0 years and possible future stock prices over the performance period based on historical stock and market prices. The assumptions used in the Monte-Carlo simulation includes the risk-free rate, expected divided yield, expected term, and possible future stock prices over the performance period based on historical stock and market prices. Once the 2017 Performance Threshold goal was attainted, the PSUs began to vest on the same schedule as the RSUs that were granted at the same time, subject to continued service to the Company. During the year ended June 30, 2017, all of the PSUs referenced above achieved their 2017 Performance Threshold and as such, began vesting and will be released on the schedule as noted, subject to continued service to the Company.

During fiscal 2017, the Company approved grants of 1.4 million stock awards in the form of PSUs to certain execs, including 0.9 million shares to its Executive Officers. Fifty percent (50%) of the PSUs are earned based on the Company's stock price appreciation (the "Stock Price PSUs") and fifty percent (50%) of the PSUs are earned based on the Company's total stockholder return relative to the S&P Small Cap 600 Capped Information Technology Index (the "TSR PSUs").

The Stock Price PSUs represent the right to receive a number of shares of common stock up to one and one-third of the target number of Stock Price PSUs. They are earned, and vest as follows based on the average adjusted closing stock price of the Company's common stock for the 90 days ending as of May 4, 2020, subject to the grantees' continued service through the certification of performance:

Average adjusted closing stock price	Shares earned
at least $8.96 but less than $11.63	One-third
at least $11.63 but less than $13.15	Two-thirds
at least $13.15 but less than $16.56	100%
$16.56 or more	One and one-third

No PSUs are earned if such average adjusted closing stock price is less than $8.96.

The TSR PSUs represent the right to receive a number of shares of common stock up to 130% of the target number of TSR PSUs. They are earned, and vest as follows based on the positive percentage point difference between the Company's total stockholder return and the total stockholder return for the S&P Small Cap 600 Capped Information Technology Index over the performance period from May 4, 2017 to May 4, 2020, subject to the grantees' continued service through the certification of performance:

Level	Percentage point difference between Company TSR and index TSR	Shares earned
Threshold	0%	0%
Target	+ 25%	100%
Maximum	+ 35%	130%

Total stockholder return is calculated based on the 90-day average stock price at the beginning and end of the performance period. Linear interpolation is generally used to determine the number of shares earned for achievement between threshold and target levels and between target and maximum levels. However, if the Company's total stockholder return over the performance period is negative, the number of shares earned will be capped at 100% of the target number of TSR PSUs.

The grant date fair values per share of the Stock Price PSUs and the TSR PSUs were determined by using the Monte-Carlo simulation model, ranging $7.01 to $8.76, respectively. The assumptions used in the Monte-Carlo simulation includes the expected volatility of 54%, risk-free rate of 1.5%, no expected divided yield, expected term of 3.0 years and possible future stock prices over the performance period based on historical stock and market prices.

For the fiscal years ended 2019, 2018 and 2017, the Company withheld an aggregate of 1.3 million shares, 1.0 million shares and 0.4 million shares, respectively, upon the vesting of RSUs, based upon the closing share price on the vesting date as settlement of the employees' minimum statutory obligation for the applicable income and other employment taxes.

For fiscal years ended 2019, 2018 and 2017, the Company remitted cash of $8.4 million, $11.3 million and $2.0 million, respectively, to the appropriate taxing authorities on behalf of the employees. The payment of the taxes by the Company reduced the number of shares that would have been issued on the vesting date and was recorded as a reduction of additional paid-in capital in the consolidated balance sheets and as a reduction of "Proceeds from issuance of common stock" in the financing activity within the consolidated statements of cash flows.

As of June 30, 2019, there were $29.1 million in unrecognized compensation costs related to non-vested stock awards. This cost is expected to be recognized over a weighted-average period of 1.6 years

Performance Grant Activity

The following table summarizes PSU's with market or performance based conditions granted and the number of awards that have satisfied the relevant market or performance criteria in each period (in thousands):

	Fiscal year 2019	Fiscal year 2018	Fiscal year 2017
Performance awards granted	635	714	2,106
Performance awards earned	342	566	839

2014 Employee Stock Purchase Plan

In August 27, 2014, the Board of Directors approved the adoption of Extreme Network's 2014 Employee Stock Purchase Plan (the "2014 ESPP"). On November 12, 2014, the stockholders approved the 2014 ESPP with the maximum number of shares of common stock that may be issued under the plan of 12.0 million shares. The Board of Directors unanimously approved an amendment to the 2014 ESPP to increase the maximum number of shares that will be available for sale by 7,500,000 shares which was ratified by the stockholders of the Company at the annual meeting of stockholders held on November 8, 2018. The 2014 ESPP replaced the 1999 Employee Stock Purchase Plan. The 2014 ESPP allows eligible employees to acquire shares of the Company's common stock through periodic payroll deductions of up to 15% of total compensation, subject to the terms of the specific offering periods outstanding. Each purchase period had a maximum duration of six months. The price at which the common stock may be purchased is 85% of the lesser of the fair market value of the Company's common stock on the first day of the applicable offering period or on the last day of the respective purchase period. During fiscal 2018, the 2014 ESPP had offerings periods of either 6 months or 24 months, commonly referred to as "look back periods". During the fiscal years ended June 30, 2019 and 2018 , there were 2.8 million and 2.4 million shares issued under the 2014 ESPP. As of June 30, 2019, there have been 9.4 million shares issued under the 2014 ESPP.

Effective with the offering period beginning on February 1, 2016, the Company amended the 2014 ESPP to increase the maximum shares issuable for each purchase period from 1.0 million shares to 1.5 million shares. Effective with the offering period beginning on August 1, 2016, the Company amended the 2014 ESPP so that all future offering periods are limited to six months and to make certain other changes to the 2014 ESPP including adding new contribution limits for each offering period. Existing open offering periods prior to the effective date of the changes were unaffected by the amendments to the 2014 ESPP.

Share Based Compensation Expense

Share-based compensation expense recognized in the financial statements by line item caption is as follows (in thousands):

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Cost of product revenue	$ 844	$ 564	$ 333
Cost of service revenue	1,639	1,131	589
Research and development	10,443	7,642	3,312
Sales and marketing	11,747	9,843	4,253
General and administrative	8,224	8,453	4,146
Total share-based compensation expense	$ 32,897	$ 27,633	$ 12,633

The amount of share-based compensation expense capitalized in inventory has been immaterial for each of the periods presented.

The Company uses the straight-line method for expense attribution other than the PSUs using the accelerated attribution method. Beginning in fiscal 2017, the Company no longer estimates forfeitures, but rather recognizes expense for those shares expected to vest and recognizes forfeitures when they occur. The Company's estimated forfeiture rate in fiscal 2016 based on the Company's historical forfeiture experience was 13% for non-executives and 19% for executives.

The fair value of each stock option grant under the Company’s 2013 Plan and 2005 Plan is estimated on the date of grant using the Black-Scholes-Merton option valuation model with the weighted average assumptions noted in the following table. The expected term of options granted is derived from historical data on employee exercise and post-vesting employment termination behavior. The risk-free rate is based upon the estimated life of the option and is based on the U.S. Treasury yield curve in effect at the time of grant. Expected volatility is based on a blended rate of the implied volatilities from traded options on the Company’s stock and historical volatility on the Company’s stock.

The Company uses the simplified method to estimate the life of options and awards. The Company uses the simplified method for all options and awards for all periods as it does not believe that historical exercise data provides a reasonable basis upon which to estimate the expected term.

The fair value of each RSU grant with performance-based vesting criteria (“PSUs”) under the 2013 Plan is estimated on the date of grant using the Monte-Carlo simulation model to determine the fair value and the derived service period of stock awards with market conditions, on the date of the grant.

The fair value of each share purchase option under the Company's 2014 ESPP is estimated on the date of grant using the Black-Scholes-Merton option valuation model with the weighted average assumptions noted in the following table. The expected term of the 2014 ESPP. The risk-free rate is based upon the estimated life and is based on the U.S. Treasury yield curve in effect at the time of grant. Expected volatility is based on the historical volatility on the Company’s stock.

The weighted-average estimated per share fair value of shares purchased under the 2014 ESPP in fiscal years 2019, 2018 and 2017, was $2.71, $3.25 and $1.24, respectively.

	Employee Stock Purchase Plan		
	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Expected life	0.5 years	0.5 years	0.5 years
Risk-free interest rate	2.22%-2.46%	1.64%-1.15%	0.40%
Volatility	70%	42%	46%-37%
Dividend yield	—%	—%	—%

401(k) Plan

The Company provides a tax-qualified employee savings and retirement plan, commonly known as a 401(k) plan (the “Plan”), which covers the Company’s eligible employees. Pursuant to the Plan, employees may elect to reduce their current compensation up to the IRS annual contribution limit of $19,000 for calendar year 2019. Employees age 50 or over may elect to contribute an additional $6,000. The amount contributed to the Plan is on a pre-tax basis.

The Company provides for discretionary matching contributions as determined by the Board of Directors for each calendar year. All matching contributions vest immediately. In addition, the Plan provides for discretionary contributions as determined by the Board of Directors each year. The program during fiscal 2019 is to match $0.50 for every Dollar contributed by the employee up to the first 2.5% of pay. The Company’s matching contributions to the Plan totaled $4.2 million, $3.3 million and $1.4 million, for fiscal years ended 2019, 2018 and 2017, respectively. No discretionary contributions were made in fiscal years ended 2019, 2018 and 2017.

11. Business Combinations

The Company completed three acquisitions during the year ended June 30, 2018 and an acquisition during the year ended June 30, 2017. The acquisitions have been accounted for using the acquisition method of accounting. The purchase price of each acquisition has been allocated to tangible and identifiable intangible assets acquired and liabilities assumed. The fair value of working capital related items, such as other current assets and accrued liabilities, approximated their book values at the date of acquisition. Inventories were valued at fair value using the net realizable value approach. The fair value of property and equipment was determined using a cost approach. The fair value of the acquired deferred revenue was estimated using the cost build-up approach. The cost build-up approach determines fair value using estimates of the costs required to provide the contracted deliverables plus an assumed profit. The total costs including the assumed profit were adjusted to present value using a discount rate considered appropriate. The resulting fair value approximates the amount the Company would be required to pay to a third party to assume the obligation. Valuations of the intangible assets were valued using income approaches based on management projections, which the Company considers to be Level 3 inputs. The Company also continues to analyze the tax implications of the acquisition of the intangible assets which may ultimately impact the overall level of goodwill associated with the acquisition. Results of operations of the acquired entities are included in the Company’s operations beginning with the closing date of each acquisition.

On August 9, 2019 the Company completed its acquisition of Aerohive Networks Inc. for approximately $264 million in cash consideration and acquired all Aerohive common shares at a price of $4.45 per share plus the assumption of certain employee equity awards. See Note 17 – Subsequent Events.

Fiscal 2018 Acquisitions

Data Center Business

The Company completed its acquisition of the data center business (the "Data Center Business") of Brocade Communication Systems, Inc.'s ("Brocade") on October 27, 2017 (the "Data Center Closing Date"), pursuant to an Asset Purchase Agreement (the "Data Center Business APA") dated as of October 3, 2017, by and between the Company and Brocade for an aggregate purchase consideration of $84.3 million. Under the terms and conditions of the Data Center Business APA, the Company acquired customers, employees, technology and other assets of the Data Center Business as well as assumed certain contracts and other liabilities of the Data Center Business.

The following table below summarizes the final allocation of the tangible and identifiable intangible assets acquired and liabilities assumed (in thousands):

		Final Allocation
Accounts receivables		$ 33,488
Inventories		19,934
Prepaid expenses and other current assets		988
Property and equipment	(a)	19,442
Other assets		4,734
Accounts payable and accrued expenses		(16,494)
Deferred revenue		(33,025)
Net tangible assets acquired		29,067
Identifiable intangible assets		32,800
Goodwill	(a)	22,470
Total intangible assets acquired		55,270
Total net assets acquired		$ 84,337

(a) Includes an adjustment after the measurement period to record $0.5 million of additional property and equipment acquired at an international location.

The amortization for the developed technology is recorded in "Cost of revenues" for product and the amortization for the remaining intangibles is recorded in "Amortization of intangibles" in the accompanying consolidated statements of operations. The goodwill recognized is attributable primarily to expected synergies and the assembled workforce of the Data Center Business. The Company anticipates both the goodwill and intangible assets to be fully deductible for income tax purposes.

Pursuant to negotiations regarding various contractual arrangements with Broadcom, in August 2018, the Company resolved its contingent consideration obligation related to the Data Center Business acquisition. The outstanding balance was revalued to its final fair value as of June 30, 2018 resulting in a charge of $1.5 million which is included in "General and administrative" expense in the accompanying consolidated statements of operations.

Campus Fabric Business

The Company completed its acquisition of Avaya Inc.'s ("Avaya") fabric-based secure networking solutions and network security solutions business (the "Campus Fabric Business") on July 14, 2017, (the "Campus Fabric Business Closing Date") pursuant to an Asset Purchase Agreement (the "Campus Fabric Business APA") dated March 7, 2017. Under the terms and conditions of the Campus Fabric Business APA, the Company acquired the customers, employees, technology and other assets of the Campus Fabric Business, as well as assumed certain contracts and other liabilities of the Campus Fabric Business, for total consideration of $79.4 million.

The following table below summarizes the final allocation of the tangible and identifiable intangible assets acquired and liabilities assumed (in thousands):

	Final Allocation
Accounts receivables	$ 19,527
Inventories	14,165
Prepaid expenses and other current assets	240
Property and equipment	5,406
Other assets	7,009
Accounts payable and accrued expenses	(31,670)
Deferred revenue	(8,994)
Other long-term liabilities	(5,849)
Net tangible assets acquired	(166)
Identifiable intangible assets	41,300
In-process research and development	2,400
Goodwill	35,892
Total intangible assets acquired	79,592
Total net assets acquired	$ 79,426

The amortization for the developed technology is recorded in “Cost of revenues” for product and the amortization for the remaining intangibles is recorded in “Amortization of intangibles” in the accompanying consolidated statement of operations. The goodwill recognized is attributable primarily to expected synergies and the assembled workforce of the Campus Fabric Business. The Company anticipates both the goodwill and intangible assets to be fully deductible for income tax purposes.

The Company also acquired an indefinite lived asset of $2.4 million which represents the fair value of in-process research and development activities. During the three months ended March 31, 2018, the related research and development efforts were completed and the Company reclassified the in-process research and development of $2.4 million to developed technology and began recognizing amortization expense over its estimated useful life.

Capital Financing Business

On December 1, 2017, Company completed its acquisition of a capital financing business (the “CF Business”), pursuant to a Bill of Sale and Assignment and Assumption Agreement (the “Assumption Agreement”) between the Company and Broadcom. Under the terms and conditions of the Assumption Agreement, the Company acquired customers, employees, contracts and lease equipment of the CF Business equal to the earn out payments to Broadcom of 90% of acquired financing receivables to be collected commencing at the closing date.

Net assets acquired included financing receivables of $13.7 million, lease equipment of $3.5 million and identifiable intangible assets of $0.8 million, and the fair value of the contingent consideration was $13.0 million. As the preliminary fair value of the net assets acquired exceeded the fair value of the purchase consideration, the Company recorded a bargain purchase gain of $5.0 million.

Fiscal 2017 Acquisition

On October 28, 2016, the Company completed its acquisition of the wireless local area network business ("WLAN Business") from Zebra Technologies Corporation. Under the terms of the WLAN Asset Purchase Agreement, the Company acquired customers, employees, technology and other assets as well as assumed certain contracts and other liabilities of the WLAN Business, for a net cash consideration of $49.5 million. The following table below summarizes the final allocation of the tangible and identifiable intangible assets acquired and liabilities assumed (in thousands):

	Final Allocation
Accounts receivables, net	$ 14,636
Inventories	13,593
Other current assets	808
Property and equipment	3,159
Other assets	7,634
Deferred revenue	(14,159)
Other liabilities	(7,201)
Total tangible assets acquired and liabilities assumed	18,470
Identifiable intangible assets	20,300
In-process research and development	1,400
Goodwill	9,339
Total intangible assets acquired	31,039
Total net assets acquired	$ 49,509

The amortization for the developed technology is recorded in "Cost of revenues" for product and the amortization for the remaining intangibles is recorded in "Amortization of intangibles" on the consolidated statements of operations. The goodwill recognized is attributable primarily to expected synergies and the assembled workforce of the WLAN Business. The Company anticipates both the goodwill and intangible assets to be fully deductible for tax purposes.

The Company also acquired an indefinite lived asset of $1.4 million which represents the fair value of in-process research and development activities. The in-process research and development was reclassified to developed technology upon completion of the project as of June 30, 2018 and is being amortized over its estimated useful life.

Pro forma financial information

The following unaudited pro forma results of operations are presented as though the acquisitions of the Data Center Business, CF Business and Campus Fabric Business had occurred as of the beginning of fiscal 2017, after giving effect to purchase accounting adjustments relating to inventories, deferred revenue, depreciation and amortization on acquired property and equipment and intangibles, acquisition costs, interest income and expense and related tax effects.

The pro forma results of operations are not necessarily indicative of the combined results that would have occurred had the acquisition been consummated as of the beginning of fiscal 2017, nor are they necessarily indicative of future operating results. The unaudited pro forma results do not include the impact of synergies, nor any potential impacts on current or future market conditions which could alter the unaudited pro forma results.

The unaudited pro forma financial information for the year ended June 30, 2018, combines the results for Extreme for the year ended June 30, 2018, which include the results of the Data Center Business, Campus Fabric Business and CF Business subsequent to their acquisition dates and their historical results up to the acquisition date.

The unaudited pro forma financial information for the year ended June 30, 2017, combines the historical results for Extreme for those periods, as adjusted for the adoption of Topic 606, with the historical results of the Data Center Business, Campus Fabric Business, CF Business for the year ended June 30, 2017, as well as the historical results of the WLAN Business prior to the WLAN Business acquisition date.

Pro forma results of operations from the Data Center Business, CF Business, Campus Fabric Business and WLAN Business acquisitions included in the pro forma results of operations have not been adjusted for the adoption of Topic 606 because the Company determined that it is impractical to estimate the impact of the adoption.

The following table summarizes the unaudited pro forma financial information (in thousands, except per share amounts):

	Year Ended	
	June 30, 2018	June 30, 2017
Net revenues	$ 1,076,988	$ 1,205,696
Net loss	$ (27,007)	$ (143,835)
Net loss per share - basic and diluted	$ (0.24)	$ (1.33)
Shares used in per share calculation - basic and diluted	114,221	108,275

12. Information about Segments of Geographic Areas

The Company operates in one segment, the development and marketing of network infrastructure equipment. Revenue is attributed to a geographical area based on the location of the customers. The Company operates in three geographic theaters: Americas, which includes the United States, Canada, Mexico, Central America and South America; EMEA, which includes Europe, Russia, Middle East and Africa; and APAC which includes Asia Pacific, China, South Asia and Japan. The Company's chief operating decision maker ("CODM"), who is its CEO, reviews financial information presented on a consolidated basis for purposes of allocating resources and evaluating financial performance.

See Note 3. Revenues for the Company's revenues by geographic regions and channel based on the customers' ship-to location.

The Company's long-lived assets are attributed to the geographic regions as follows (in thousands):

Long-lived Assets	June 30, 2019	June 30, 2018
Americas	$ 136,035	$ 178,251
EMEA	28,744	15,106
APAC	11,529	9,896
Total long-lived assets	$ 176,308	$ 203,253

13. Foreign Exchange Forward Contracts

The Company uses derivative financial instruments to manage exposures to foreign currency. The Company's objective for holding derivatives is to use the most effective methods to minimize the impact of these exposures. The Company does not enter into derivatives for speculative or trading purposes. The fair value of the Company's derivatives in a gain position are recorded in "Prepaid expenses and other current assets" and derivatives in a loss position are recorded in "Other accrued liabilities" in the accompanying consolidated balance sheets. Changes in the fair value of derivatives are recorded in "Other (expense) income, net" in the accompanying consolidated statements of operations; the Company recognized total foreign currency gains of $0.1 million in fiscal 2019 and losses of $1.2 million and $0.7 million in fiscal 2018 and 2017, respectively, related to the change in fair value of foreign currency denominated assets and liabilities. The Company enters into foreign exchange forward contracts to mitigate the effect of gains and losses generated by foreign currency transactions related to certain operating expenses and remeasurement of certain assets and liabilities denominated in foreign currencies. These derivatives do not qualify as hedges. There were no gains and losses from hedging transactions in fiscal year ended June 30, 2019 and they were not material in fiscal years 2018 and 2017.

At June 30, 2019 the Company did not have any forward foreign currency contracts. At June 30, 2018, forward foreign currency contracts had a notional principal amount of $5.0 million. These contracts had maturities of less than 60 days. Changes in the fair value of these foreign exchange forward contracts are offset largely by remeasurement of the underlying assets and liabilities.

14. Restructuring and Related Charges, Net of Reversals

As of June 30, 2019, restructuring liabilities were $5.3 million which are recorded in “Other accrued liabilities” and “Other long-term liabilities” in the accompanying consolidated balance sheets. The restructuring liabilities consist of obligations pertaining to the estimated future obligations for non-cancelable lease payments and severance and benefits obligations. During years ended 2019, 2018 and 2017, the Company recorded restructuring charges, net of reversals, of $5.1 million, $8.1 million and $8.9 million, respectively. The restructuring charges net of reversals during fiscal 2019 were primarily associated with a reduction-in-force in the fourth quarter of fiscal 2019 and additional excess facilities obligations. The charges are reflected in “Restructuring and related charges, net of reversals” in the consolidated statements of operations.

2019 Restructuring

The Company recorded a total of $5.1 million in restructuring charges during the year ended June 30, 2019. A reduction-in-force in its fourth fiscal quarter of fiscal 2019 was announced to better align its work force and operating expenses. Costs associated with the 2019 Plan are primarily comprised of employee severance and benefits expenses, relocation of personnel and equipment and exit of excess facilities. The Company recorded $3.7 million related to employee severance and benefits expenses during the year ended June 30, 2019 under the 2019 Plan. Also, $1.1 million of additional charges related to continuation of earlier actions associated with a reduction-in-force in the fourth quarter of fiscal 2018. The Company also incurred charges of $0.3 million for changes to its estimates for accrued lease costs pertaining to the estimated future obligations for non-cancelable lease payments of its excess facilities. The amount and timing of the actual charges may vary due to required consultation activities with certain employees as well as compliance with statutory severance requirements in local jurisdictions. The Company expects the severance and benefits will be substantially paid by December 2019, and the excess facilities obligations will continue through December 2027.

2018 Restructuring

The Company announced and executed a reduction-in-force in its third and fourth fiscal quarters of fiscal 2018 as a result of the acquisitions of the Campus Fabric Business and the Data Center Business. The Company recorded $7.9 million related to employee severance and benefits expenses during the year ended June 30, 2018. The Company also incurred charges of $0.2 million for changes to its estimates for accrued lease costs pertaining to the estimated future obligations for non-cancelable lease payments of its excess facilities.

2017 Restructuring

In conjunction with the Company’s restructuring activities noted below, the Company incurred $8.9 million of restructuring charges, net of reversals during fiscal 2017 which is reflected in “Restructuring and related charges, net of reversals” in the consolidated statements of operations.

Pursuant with the WLAN Business acquisition from Zebra, the Company assumed a facility lease located at 6480 Via del Oro in San Jose, California (“Via del Oro”) and transferred the Company’s headquarters from Rio Robles Drive in San Jose, California (“Rio Robles”) to Via del Oro. The Company consolidated its existing workforce with employees assumed from Zebra at the Via del Oro site and exited the Rio Robles site on January 31, 2017. Due to the Company’s move from the Rio Robles facility and abandonment of all leasehold improvements, it accelerated the amortization of the remaining leasehold improvements balance for this site over the shortened service period such that the leasehold improvements were fully amortized on the cease-use date. The Company recorded accelerated amortization expense for the years ended June 30, 2019 and 2018 of $0.1 million and $2.6 million, respectively.

The Company entered into a sublease agreement for its Rio Robles facility during the third quarter of fiscal 2017. The sublease is for the remaining duration of the Company’s lease. The net charges incurred for the remaining lease payments, real estate commissions and other related costs, net of the future sublease payments resulted in additional charges of $2.0 million during fiscal 2017. The excess facilities payments will continue through fiscal year 2023.

In anticipation of the acquisitions of the Campus Fabric and the Data Center Businesses, the Company reoccupied the majority of its exited space at its Salem, New Hampshire location during its fiscal fourth quarter to accommodate the growth in headcount and lab facility requirements. This action resulted in a reversal of prior accruals of $1.3 million.

In conjunction with the consolidation actions noted above, the Company announced a reduction-in-force affecting 90 employees. The Company recorded $5.6 million in severance and benefits charges, net during the year ended June 30, 2017.

Restructuring liabilities consist of (in thousands):

	Excess Facilities	Severance Benefits	Other	Total
Balance as of June 30, 2016	4,644	—	—	4,644
Period charges	1,951	5,728	2,663	10,342
Period reversals	(1,337)	(109)	—	(1,446)
Non cash adjustments	—	—	(2,578)	(2,578)
Period payments	(3,074)	(3,766)	—	(6,840)
Balance as of June 30, 2017	$ 2,184	$ 1,853	$ 85	$ 4,122
Period charges	207	7,945	—	8,152
Period reversals	—	—	(12)	(12)
Period payments	(594)	(5,140)	(73)	(5,807)
Balance as of June 30, 2018	$ 1,797	$ 4,658	$ —	$ 6,455
Period charges	254	5,274	—	5,528
Period reversals	—	(438)	—	(438)
Period payments	(287)	(5,935)	—	(6,222)
Balance as of June 30, 2019	$ 1,764	$ 3,559	$ —	$ 5,323
Less: current portion included in Other accrued liabilities				4,010
Restructuring accrual included in Other long-term liabilities				$ 1,313

15. Income Taxes

Income before income taxes is as follows (in thousands):

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Domestic	$ 22,330	$ (55,197)	$ (7,228)
Foreign	(48,204)	8,550	9,824
Total	$ (25,874)	$ (46,647)	$ 2,596

The provision for income taxes for the years ended 2019, 2018 and 2017 consisted of the following (in thousands):

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Current:			
Federal	$ —	$ (155)	$ (155)
State	655	521	168
Foreign	5,100	4,456	2,332
Total current	5,755	4,822	2,345
Deferred:			
Federal	(3,691)	(6,358)	3,063
State	(488)	294	99
Foreign	(1,597)	1,387	(1,167)
Total deferred	(5,776)	(4,677)	1,995
Provision for income taxes	$ (21)	$ 145	$ 4,340

The difference between the provision for income taxes and the amount computed by applying the federal statutory income tax rate (21 percent for fiscal 2019 pursuant to the recently enacted U.S. tax legislation) to income before taxes is explained below (in thousands):

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Tax at federal statutory rate	$ (5,433)	$ (13,061)	$ 909
State income tax, net of federal benefit	517	521	168
Release of foreign valuation allowance	(2,794)	—	—
Release of US valuation allowance – Tax reform	(4,680)	—	—
Establishment of Irish valuation allowance	8,642	—	—
US valuation allowance change – deferred tax movement	(4,444)	25,302	3,246
Research and development credits	(6,598)	(7,311)	(1,355)
Foreign earnings taxed at other than U.S. rates	10,562	(1,065)	(492)
Stock based compensation	2,436	(5,901)	(573)
Goodwill amortization	834	2,004	1,795
Nondeductible officer compensation	713	1,927	470
Nondeductible meals and entertainment	517	510	391
AMT credit monetization	—	(155)	(155)
Deferred tax liability release - Tax reform	—	(2,482)	—
Other	(293)	(144)	(64)
Provision for income taxes	$ (21)	$ 145	$ 4,340

Significant components of the Company’s deferred tax assets are as follows (in thousands):

	June 30,		
	2019	2018	2017
Deferred tax assets:			
Net operating loss carry-forwards	$ 36,514	$ 49,429	$ 109,170
Tax credit carry-forwards	54,745	48,093	34,444
Depreciation	2,168	1,422	1,312
Intangible amortization	36,882	35,107	32,919
Deferred revenue, net	1,887	159	3,320
Inventory write-downs	10,277	13,682	11,111
Other allowances and accruals	30,210	25,700	13,002
Stock based compensation	4,114	4,872	3,545
Deferred intercompany gain	3,693	—	—
Other	673	3,219	4,270
Total deferred tax assets	181,163	181,683	213,093
Valuation allowance	(169,343)	(177,869)	(212,111)
Total net deferred tax assets	11,820	3,814	982
Deferred tax liabilities:			
Goodwill amortization	(4,904)	(3,363)	(6,254)
Prepaid commissions	(1,585)	(1,034)	—
Deferred tax liability on foreign withholdings	(505)	(357)	(321)
Total deferred tax liabilities	(6,994)	(4,754)	(6,575)
Net deferred tax assets (liabilities)	$ 4,826	$ (940)	$ (5,593)
Recorded as:			
Net non-current deferred tax assets	6,783	5,195	983
Net non-current deferred tax liabilities	(1,957)	(6,135)	(6,576)
Net deferred tax assets (liabilities)	$ 4,826	$ (940)	$ (5,593)

The Company’s global valuation allowance decreased by $8.5 million in the fiscal year ended June 30, 2019 and decreased by $34.2 million in the fiscal year ended June 30, 2018. The Company has provided a full valuation allowance against all of its U.S. federal and state deferred tax assets, as well as valuation allowances against certain non-U.S. deferred tax assets in Ireland and Brazil. The valuation allowance is determined by assessing both negative and positive available evidence to assess whether it is more likely than not that the deferred tax assets will be recoverable. The Company's inconsistent earnings in recent periods, including a cumulative loss over the last three years, coupled with its difficulty in forecasting future revenue trends as well as the cyclical nature of the Company's business provides sufficient negative evidence to require a full valuation allowance against its U.S. federal and state net deferred tax assets. The valuation allowance is evaluated periodically and can be reversed partially or in full if business results and the economic environment have sufficiently improved to support realization of the Company's deferred tax assets.

As of June 30, 2019, the Company had net operating loss carry-forwards for U.S. federal and state tax purposes of $126.6 million and $56.7 million, respectively. As of June 30, 2019, the Company also had foreign net operating loss carry-forwards in Ireland, Australia and Brazil of $36.9 million, $7.9 million and $0.4 million, respectively. As of June 30, 2019, the Company also had federal and state tax credit carry-forwards of $37.3 million and $22.1 million, respectively. These credit carry-forwards consist of research and development tax credits as well as foreign tax credits. The U.S. federal net operating loss carry-forwards of $126.6 million will begin to expire in the fiscal year ending June 30, 2024 and state net operating losses of $56.7 million began to partially expire in the fiscal year ending June 30, 2020. The foreign net operating losses can generally be carried forward indefinitely. Federal research and development tax credits of $26.6 million will expire beginning in fiscal 2020, if not utilized and foreign tax credits of $10.7 million will expire beginning in fiscal 2020. North Carolina state research and development tax credits of $0.9 million will expire beginning in the fiscal year ending June 30, 2024, if not utilized. California state research and development tax credits of $21.2 million do not expire and can be carried forward indefinitely.

In January 2019, the Company performed an Internal Revenue Code section 382 analysis with respect to its net operating loss and credit carry-forwards to determine whether a potential ownership change had occurred that would place a limitation on the annual utilization of tax attributes. It was determined that no ownership change had occurred during the fiscal year ended June 30, 2018, however, it is possible a subsequent ownership change could limit the utilization of the Company's tax attributes.

As of June 30, 2019, cumulative undistributed, indefinitely reinvested earnings of non-U.S. subsidiaries totaled $6.8 million. It has been the Company’s historical policy to invest the earnings of certain foreign subsidiaries indefinitely outside the US. The Company is reviewing its prior position on the reinvestment of earnings of certain foreign subsidiaries but has recorded a deferred tax liability of $0.5 million related to withholding taxes that may be incurred upon repatriation of earnings from jurisdictions where no indefinite reinvestment assertion is made. The Company continues to maintain an indefinite reinvestment assertion for earnings in certain of its foreign jurisdictions. The unrecorded deferred tax liability for potential withholding tax associated with repatriation of these earnings as well as the deemed repatriation related to Tax Reform is $3.4 million.

The Company conducts business globally and as a result, most of its subsidiaries file income tax returns in various domestic and foreign jurisdictions. In the normal course of business, the Company is subject to examination by taxing authorities throughout the world. Its major tax jurisdictions are the U.S., Ireland, India, California, New Hampshire and North Carolina. In general, the Company's U.S. federal income tax returns are subject to examination by tax authorities for fiscal years 2001 forward due to net operating losses and the Company's state income tax returns are subject to examination for fiscal years 2000 forward due to net operating losses.

On December 22, 2017, the President of the United States signed and enacted into law H.R. 1, the Tax Cuts and Jobs Act (“TCJA”), which, except for certain provisions, is effective for tax years beginning on or after January 1, 2018. As a fiscal year taxpayer, the provisions would impact the fiscal years ending June 30, 2019 and forward.The TCJA’s primary change was a reduction in the U.S. Federal statutory corporate tax rate from 35% to 21%, including a pro rata reduction from 35% to 28% for the Company in fiscal 2018.

The TCJA moves the U.S. from a global taxation regime to a modified territorial regime. Under the territorial regime, the company’s foreign earnings will generally not be subject to tax in the US. As part of transitioning to this new regime, U.S. companies were required to pay tax on historical earnings generated offshore that have not been repatriated to the U.S. (“Transition Tax”). The Company recognized no incremental tax provision relating to the Transition Tax given the Company’s ability to utilize existing tax attributes to offset the impact of the deemed repatriation.

The TCJA made broad and complex changes to the U.S. tax code, and in certain instances, lacks clarity and is subject to interpretation until additional U.S. Treasury guidance is issued. On December 22, 2017, the SEC issued guidance under Staff Accounting Bulletin (“SAB”) No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act (“SAB 118”), which allows registrants to record provisional amounts during a one year “measurement period” similar to that used when accounting for business combinations. The measurement period was deemed to have ended earlier when the registrant had obtained, prepared and analyzed the information necessary to finalize its accounting. During the measurement period, impacts of the law were expected to be recorded at the time a reasonable estimate for all or a portion of the effects can be made, and provisional amounts can be recognized and adjusted as information becomes available, prepared or analyzed. The measurement period ended in the Company’s second fiscal quarter of 2019 and the Company has finalized all related adjustments.

Amounts recorded pursuant to Tax Reform and the provisions of SAB 118 relate to the reduction in the U.S. federal tax rate to 21 percent, which resulted in the Company reporting an income tax benefit of $2.5 million in the fiscal year ended June 30, 2018 to remeasure deferred tax liabilities associated with indefinitely lived intangible assets that will reverse at the new 21% rate. Absent this deferred tax liability, the Company has historically been in a net deferred tax asset position that is offset by a full valuation allowance. The Transition Tax introduced by TCJA has been calculated to be zero for the Company given existing tax attributes that were utilized to offset the calculated liability. As discussed below, during the quarter ended December 31, 2018 the Company completed its evaluation of whether to treat global intangible low-taxed income (“GILTI”) as a component of tax expense in the period in which it is incurred or as a component of deferred income taxes. In conjunction with this determination and the completion of scheduling the reversal of deferred tax assets and liabilities, the Company reduced the valuation allowance level by $4.7 million in the second quarter of fiscal 2019 to reflect the introduction of an indefinite carryforward period for NOLs expected to be generated in tax years beginning after December 31, 2017 once deferred tax assets reverse.

With respect to provisions of the TCJA effective for the Company’s fiscal year ended 2019, the Company determined several new provisions potentially impact tax provisions in the current year including limitations on the deductibility of interest expense and certain executive compensation, a minimum tax on certain foreign earnings or GILTI, as well as a base-erosion and anti-abuse tax (“BEAT”). The GILTI provisions require the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary’s tangible assets. Based on the fiscal year ending 2019 financial results, the company determined there is no GILTI inclusion required in U.S. taxable income. The Company has elected to account for GILTI tax as a component of tax expense in the period in which it is incurred. The Base Erosion and Anti-Abuse Tax (“BEAT”) provisions in the Tax Reform Act eliminate the deduction of certain base-erosion payments made to related foreign corporations, and impose a minimum tax if greater than regular tax. There is a reasonable amount of uncertainty surrounding the interpretation of this new provision, however, based on the Company’s assessment and a reasonable interpretation of the new provision, the Company has determined it will not be subject to the incremental U.S. tax on BEAT income during the fiscal year ended 2019 due to a realignment of the Company’s international structure.

In the first quarter of fiscal 2019, the Company adopted ASU 2016-16, *Intra-Entity Transfers of Assets Other Than Inventory*, which requires an entity to recognize the income tax consequences of an intra-entity transfer of an asset at the time the transfer occurs. Historically, U.S. GAAP has prohibited the recognition of current and deferred income taxes for an intra-entity asset transfer until the asset had been sold outside the consolidated group. Effective as of July 1, 2018, the Company adopted ASU 2016-16 on a modified retrospective basis which requires an adjustment of the cumulative-effect of the adoption to retained earnings. However, the adjustment was immaterial to the financial statements and no such adjustment was necessary. As a result of adoption, the income tax consequences of future intra-entity transfer of assets will be recognized in earnings in each period rather than be deferred until the assets leave the consolidated group. In the first quarter of fiscal 2019, the Company recognized a deferred tax asset relating to a transfer of certain assets from the U.S. parent company to its wholly-owned Irish subsidiary of $3.7 million, which was fully offset by the establishment of a valuation allowance resulting in no impact to the Company’s consolidated statement of operations.

During the fiscal year ended June 30, 2014, the Company acquired the stock of Enterasys Networks, Inc. and as such they became a wholly owned subsidiary of Extreme Networks. With respect to this acquisition, the Company made an election under Internal Revenue Code section 338(h)(10) to treat the acquisition as an asset purchase from a tax perspective. Under this election the tax basis of all assets is effectively reset to that of fair market value and therefore the transaction did not result in the recording of an opening net deferred tax position as the Company's tax basis in the acquired assets equaled its book basis. The resulting intangible assets and goodwill are being amortized for tax purposes over 15 years.

Additionally, the Company completed the acquisitions of the Zebra WLAN Business, the Avaya Campus Fabric Business and the Brocade Data Center Business in October 2016, July 2017 and October 2017, respectively, and treats the acquisitions as an asset purchase from a tax perspective. The Company has estimated the value of the intangible assets from these transactions and is amortizing the amounts over 15 years for tax purposes.

During the twelve months ended June 30, 2019, the Company deducted $7.7 million of tax amortization expense related to capitalized goodwill resulting from the above acquisitions.

As of June 30, 2019, the Company had $17.2 million of unrecognized tax benefits. If fully recognized in the future, there would be no impact to the effective tax rate, and $17.2 million would result in adjustments to deferred tax assets and corresponding adjustments to the valuation allowance. The Company does not reasonably expect the amount of unrealized tax benefits to decrease during the next twelve months. The decrease for fiscal year 2019 relates substantially to the expiration of unrealized R&D credits.

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

Balance at June 30, 2016	$ 11,653
Increase related to prior year tax positions	7,180
Increase related to current year tax positions	233
Lapse of statute of limitations	(153)
Balance at June 30, 2017	18,913
Decrease related to prior year tax positions	(1,407)
Balance at June 30, 2018	17,506
Increase related to prior year tax positions	26
Lapse of statute of limitations	(364)
Balance at June 30, 2019	$ 17,168

Estimated interest and penalties related to the underpayment of income taxes, if any are classified as a component of tax expense in the consolidated statements of operations and totaled less than $0.1 million for each of the years ended 2019, 2018 and 2017.

16. Net Loss Per Share

Basic earnings per share is calculated by dividing net income by the weighted average number of common shares outstanding during the period, less shares subject to repurchase, and excludes any dilutive effects of options, warrants and unvested restricted stock. Dilutive earnings per share is calculated by dividing net income by the weighted average number of common shares used in the basic earnings per share calculation plus the dilutive effect of shares subject to options, warrants and unvested restricted stock.

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

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Net loss	$ (25,853)	$ (46,792)	$ (1,744)
Weighted-average shares used in per share calculation - basic and diluted	117,954	114,221	108,273
Net loss per share - basic and diluted	$ (0.22)	$ (0.40)	$ (0.02)

Potentially dilutive common shares from employee incentive plans are determined by applying the treasury stock method to the assumed exercise of outstanding stock options, the assumed vesting of outstanding restricted stock units, and the assumed issuance of common stock under the ESPP. Weighted stock options outstanding with an exercise price higher than the Company's average stock price for the periods presented are excluded from the calculation of diluted net loss per share since the effect of including them would have been anti-dilutive due to the net loss position of the Company during the periods presented.

The following securities were excluded from the computation of outstanding diluted earnings per common share because they would have been anti-dilutive (in thousands):

	Year Ended		
	June 30, 2019	June 30, 2018	June 30, 2017
Options to purchase common stock	2,693	2,547	—
Restricted stock units	8,337	7,822	220
Employee Stock Purchase Plan shares	612	1,294	—
Total shares excluded	11,642	11,663	220

17. Subsequent Event

Aerohive Acquisition

On August 9, 2019 (the "Closing Date") the Company completed its acquisition of Aerohive Networks, Inc, ("Aerohive") a publicly held network company for approximately $264 million in cash consideration and assumption of certain employee equity awards.

The acquisition will be accounted for using the acquisition method of accounting whereby the acquired assets and liabilities of Aerohive will be recorded at their respective fair values and added to those of the Company including an amount for goodwill representing the difference between the acquisition consideration and the fair value of the identifiable net assets. Results of operations of Aerohive will be included in the operations of the Company beginning with the Closing Date. As of the date of the filing of this Form 10-K, the initial purchase price allocation has not been prepared as there has not been sufficient time to complete the related activities.

During the fiscal year ended June 30, 2019, the Company recognized related transaction costs of $0.8 million which is included in "Acquisition and integration costs" in the accompanying consolidated statements of operations.

Borrowing Facility

On August 9, 2019, the Company entered into an Amended and Restated Credit Agreement (the "2019 Credit Agreement"), by and among the Company, as borrower, several banks and other financial institutions as Lenders, BMO Harris Bank N.A., as an issuing lender and swingline lender, Silicon Valley Bank, as an Issuing Lender, and Bank of Montreal, as administrative agent and collateral agent for the Lenders.

The 2019 Credit Agreement provides for a 5-year first lien term loan facility in an aggregate principal amount of $380 million (the "2019 Term Loan") and a 5-year revolving loan facility in an aggregate principal amount of $75 million (the "2019 Revolving Facility"). In addition, Extreme may request incremental term loans and/or incremental revolving loan commitments in an aggregate amount not to exceed the sum of $100 million plus an unlimited amount that is subject to pro forma compliance with certain financial tests. In addition to funding a portion of the amount paid by the Company to acquire Aerohive, Extreme will use the proceeds of the 2019 Term Loan to pay off i) the Company's existing 2018 Credit Agreement, ii) pay fees and expenses incurred in connection with the tender offer to acquire all of the outstanding shares of Aerohive's common stock and iii) for working capital and general corporate purposes.

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

Disclosure controls and procedures are controls and procedures designed to reasonably assure that information required to be disclosed in our reports filed under the Securities Exchange Act of 1934 as amended, such as this Report, is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and to reasonably assure that such information is accumulated and communicated to our management, including the Chief Executive Officer ("CEO") and the Chief Financial Officer ("CFO"), as appropriate to allow timely decisions regarding required disclosure.

Under the supervision and with the participation of our management, including our CEO and CFO, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of the end of the period covered by this Report. Based on this evaluation, our CEO and CFO concluded that our disclosure controls and procedures were effective as of June 30, 2019.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting. There are inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective internal controls can provide only reasonable assurances with respect to financial statement preparation. Further because of changes in conditions, the effectiveness of internal control may vary over time.

We assessed the effectiveness of our internal control over financial reporting as of June 30, 2019. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control-Integrated Framework (2013). Based on our assessment using those criteria, we concluded that, as of June 30, 2019, our internal control over financial reporting is effective.

Our independent registered public accounting firm, KPMG LLP, has audited the financial statements included in this Annual Report on Form 10-K and has issued its report on our internal control over financial reporting as of June 30, 2019.

Changes in Internal Control over Financial Reporting

We have remediated material weakness identified during our third fiscal quarter ended March 31, 2019 related to the ineffective design of certain process level controls addressing the accuracy of sales orders entered by the Company. Specifically, our remediation plans included (1) redesigning controls to validate all sales orders are processed accurately, and (ii) augmenting user training with respect to the enhancements to the Order Entry system. As a result of implementing our remediation plans, as of June 30, 2019 we believe we have remediated the material weakness.

Except as discussed above, there were no changes during the fourth quarter of 2019 in our internal control over financial reporting that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including the CEO and CFO, does not expect that our disclosure controls or our internal control over financial reporting will prevent or detect all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. Our controls and procedures are designed to provide reasonable assurance that our control system's objective will be met and our CEO and CFO have concluded that our disclosure controls and procedures are effective at the reasonable assurance level. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within Extreme have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events. Projections of any evaluation of the effectiveness of controls in future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures. Notwithstanding these limitations, our disclosure controls and procedures are designed to provide reasonable assurance of achieving their objectives. Our CEO and CFO have concluded that our disclosure controls and procedures are, in fact, effective at the "reasonable assurance" level.

Item 9B. Other Information

None.

PART III

Certain information required by Part III is incorporated by reference from our definitive Proxy Statement to be filed with the Securities and Exchange Commission in connection with the solicitation of proxies for our 2019 Annual Meeting of Stockholders (the "Proxy Statement") not later than 120 days after the end of the fiscal year covered by this report, and certain information therein is incorporated in this report by reference.

Item 10. *Directors, Executive Officers and Corporate Governance*

The information required by this section for our directors is incorporated by reference from the information in the section entitled "Proposal 1 – Election of Directors" in the Proxy Statement. The information required by this section for our executive officers is incorporated by reference from the information in the section entitled "Executive Compensation and Other Matters" in the Proxy Statement.

Item 405 of Regulation S-K calls for disclosure of any known late filing or failure by an insider to file a report required by Section 16 of the Exchange Act. This disclosure is contained in the section entitled "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement and is incorporated herein by reference.

Information with respect to Item 406 of Regulation S-K is incorporated by reference to the information contained in the section captioned "Code of Ethics and Corporate Governance Materials" in the Proxy Statement.

Item 11. *Executive Compensation*

The information required by this section is incorporated by reference from the information in the sections entitled "Directors' Compensation", "Executive Compensation and Other Matters" and "Report of the Compensation Committee" in the Proxy Statement.

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

The information required by this section is incorporated by reference from the information in the section entitled "Security Ownership of Certain Beneficial Owners and Management" in the Proxy Statement.

The information required by this section regarding securities authorized for issuance under equity compensation plans is incorporated by reference from the information in the section entitled "Equity Compensation Plan Information" in the Proxy Statement.

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

The information required by this section is incorporated by reference from the information in the section titled "Certain Relationships and Related Transactions" in the Proxy Statement.

Item 14. *Principal Accounting Fees and Services*

The information required by this section is incorporated by reference from the information in the section titled "Principal Accounting Fees and Services" in the Proxy Statement.

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

- **The following documents are filed as a part of this Form 10-K:**

  (1) Financial Statements:

Reference is made to the Index to Consolidated Financial Statements of Extreme Networks, Inc. under Item 8 in Part II of this Annual Report on Form 10-K.

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

  - Exhibits:

Incorporated herein by reference is a list of the Exhibits contained in the Exhibit Index immediately preceding the signature page of this Annual Report on Form 10-K.

Item 16. ***Form 10-K Summary***

None.

EXHIBIT INDEX

The exhibits listed below are required by Item 601 of Regulation S-K. Each management contract or compensatory plan or arrangement required to be filed as an exhibit to this Form 10-K has been identified.

Exhibit Number	Description of Document	Incorporated by Reference			Provided Herewith
		Form	Filing Date	Number	
2.1	Stock Purchase Agreement, dated September 12, 2013 between Enterprise Network Holdings, Inc. and Extreme Networks, Inc.	8-K	9/13/2013	2.1	
2.2†	Asset Purchase Agreement, dated as of September 13, 2016, by and between Extreme Networks, Inc. and Zebra Technologies Corporation.	8-K	9/15/2016	2.1	
2.3	Amendment No. 1 dated October 28, 2016 to the Asset Purchase Agreement, dated as of September 13, 2016, by and between Extreme Networks, Inc. and Zebra Technologies Corporation.	10-Q	2/2/2017	2.1	
2.4	Asset Purchase Agreement, dated March 7, 2017, by and between Extreme Networks, Inc. and Avaya, Inc.	8-K	3/7/2017	2.1	
2.5	Amendment No. 1, dated April 3, 2017, to the Asset Purchase Agreement, dated March 7, 2017, by and between Extreme Networks, Inc. and Avaya, Inc.	10-Q	5/4/2017	2.2	
2.6†	Asset Purchase Agreement, dated as of March 29, 2017, by and among LSI Corporation, Extreme Networks, Inc. and, solely for the purposes set forth therein, Broadcom Corporation.	8-K	3/30/2017	2.1	
2.7	Asset Purchase Agreement, dated as of October 3, 2017 between Brocade Communications Systems. Inc. and Extreme Networks, Inc.	8-K	10/3/2017	2.1	
2.8	Amendment No. 1 dated May 6, 2018 to the Asset Purchase Agreement, dated as of October 3, 2017 between Brocade Communications Systems. Inc. and Extreme Networks, Inc.	10-K	8/29/2018	2.8	
2.9	Agreement and Plan of Merger, dated June 26, 2019 by and among Extreme Networks, Inc., Clover Merger Sub, Inc. and Aerohive Networks, Inc.	8-K	6/26/2019	2.1	
3.1	Amended and Restated Certificate of Incorporation of Extreme Networks, Inc.	8-K	12/17/2010	3.2	
3.2	Amended and Restated Bylaws of Extreme Networks, Inc.	8-K	3/31/2011	3.1	
3.3	Certificate of Designation, Preferences and Rights of the Terms of the Series A Preferred Stock.	10-K	9/26/2001	3.7	
4.1	Amended and Restated Rights Agreement dated April 26, 2012 between Extreme Networks, Inc. and Computershare Shareowner Services LLC.	8-K	4/30/2012	4.1	
4.2	Amendment No. 2 to the Amended and Restated Rights Agreement effective April 30, 2014.	8-K	5/20/2014	4.1	
4.3	Amendment No. 3 to the Amended and Restated Rights Agreement effective May 14, 2015.	8-K	5/19/2015	4.1	
4.4	Amendment No. 4 to the Amended and Restated Rights Agreement effective May 5, 2016.	8-K	5/9/2016	4.1	
4.5	Amendment No. 5 to the Amended and Restated Rights Agreement effective May 31, 2017.	8-K	6/5/2017	4.1	

4.6	Amendment No. 6 to the Amended and Restated Rights Agreement effective May 31, 2018.	8-K	6/5/2018	4.1	
4.7	Amendment No. 7 to the Amended and Restated Rights Agreement effective May 31, 2019.				X
10.1	Form of Indemnification Agreement for directors and officers.	8-K	10/24/2011	99.1	
10.2	Lease Agreement by and between RDU Center III LLC and Extreme Networks, Inc. dated October 15, 2012.	8-K	10/19/2012	10.1	
10.3	First Amendment to Lease Agreement by and between RDU Center III LLC and Extreme Networks, Inc. dated December 31, 2012.	8-K	1/7/2013	10.1	
10.4	Office Space Lease Agreement by and between W3 Ridge Rio Robles Property LLC and Extreme Networks, Inc., dated December 31, 2012.	8-K	1/7/2013	10.2	
10.5	Enterasys Networks, Inc. 2013 Stock Plan.	8-K	11/22/2013	10.1	
10.6*	Extreme Networks, Inc. 2014 Employee Stock Purchase Plan as amended and restated June 2016.	10-K	9/6/2016	10.11	
10.7*	Amended and Restated Extreme Networks, Inc. 2013 Equity Incentive Plan.	S-8	12/01/2017	99.1	
10.8*	Form of market based restricted stock units award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-Q	1/30/2015	99.1	
10.9*	Form of restricted stock unit award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-K	9/6/2016	10.15	
10.10*	Form of performance based restricted stock unit award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-K	9/6/2016	10.16	
10.11*	Form of option award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-K	9/6/2016	10.17	
10.12*	Form of restricted stock unit award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-Q	11/2/2016	10.1	
10.13*	Form of performance based restricted stock unit award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-Q	11/2/2016	10.2	
10.14*	Form of option award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-Q	11/2/2016	10.3	
10.15*	Form of performance stock unit under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-K	9/13/2017	10.21	
10.16*	Promotion Letter between Robert Gault and Extreme Networks, Inc. dated June 2, 2015.	10-Q	4/29/2016	10.2	
10.17*	Supplemental Letter between Robert Gault and Extreme Networks, Inc. dated August 4, 2015.	10-Q	4/29/2016	10.3	
10.18*	Offer Letter, executed May 15, 2016, between Extreme Networks, Inc. and Drew Davies.	8-K	5/19/2016	10.1	
10.19*	Extreme Networks, Inc. Executive Change in Control Severance Plan Amended and Restated November 1, 2016.	10-Q	11/2/2016	10.5	
10.20*	Agreement to Participate in the Extreme Networks, Inc. Executive Change in Control Severance Plan as Amended and Restated May 4, 2016.	10-K	9/6/2016	10.26	
10.21*	Amended and Restated Offer Letter, executed August 31, 2016, between Extreme Networks, Inc. and Edward B. Meyercord.	10-K	9/6/2016	10.27	

10.22*	Extreme Networks, Inc. 2005 Equity Incentive Plan.	8-K	10/23/2009	99.3
10.23*	Form of Option Agreement Under the Extreme Networks, Inc. 2005 Equity Incentive Plan.	10-K	9/6/2016	10.30
10.24	Debt Commitment Letter, dated as of September 13, 2016, by and between Extreme Networks, Inc. and Silicon Valley Bank.	8-K	9/15/2016	10.1
10.25	Amended and Restated Credit Agreement, dated as of October 28, 2016, by and among the Company, as borrower, the several banks and other financial institutions or entities party thereto as lenders, and Silicon Valley Bank, as administrative agent and collateral agent.	10-Q	11/2/2016	10.4
10.26	First Amendment to the Amended and Restated Credit Agreement, dated as of March 2, 2017, by and among the Company, as borrower, the several banks and other financial institutions or entities party thereto as lenders, and Silicon Valley Bank, as administrative agent and collateral agent.	10-Q	5/4/2017	10.1
10.27	Second Amendment to the Amended and Restated Credit Agreement, dated as of July 14, 2017, by and among the Company, as borrower, the several banks and other financial institutions or entities party thereto as lenders, and Silicon Valley Bank, as administrative agent and collateral agent.	8-K	7/18/2017	10.1
10.28	Sublease Agreement, dated February 3, 2017, by and between the Company as sub-landlord and Yangtze Memory Technologies, Inc. as sub-tenant.	10-Q	5/4/2017	10.2
10.29	Lease for property at 6480 Via Del Oro, San Jose, California, dated November 6, 2017 between SI 64 LLC, a California limited liability company and Extreme Networks, Inc.	10-Q	2/08/2018	10.5
10.30	Lease for property at 6377 San Ignacio Avenue, San Jose, dated November 6, 2017 between SI 33, LLC a California limited liability company and Extreme Networks, Inc.	10-Q	2/08/2018	10.6
10.31*	Form of 2017 restricted stock unit award agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan.	10-K	9/13/2017	10.42
10.32	Consent Agreement, dated as of March 29, 2017, by and among LSI Corporation, Extreme Networks, Inc. and solely for the purposes set forth therein, Broadcom Corporation.	8-K	10/3/2017	10.1
10.33*	Form of Performance vesting restricted stock units agreement under Extreme Networks, Inc. 2013 Equity Incentive Plan	10-Q	11/9/2017	10.4
10.34	Third Amendment to the Amended and Restated Credit Agreement, dated as of October 26, 2017 by and among the Company, as borrower, the several banks and other financial institutional or entities party thereto as lenders, and Silicon Valley, Bank, as administrative agent and collateral agent.	8-K	10/30/2017	10.1
10.35	Credit Agreement, dated as of May 1, 2018, by and among the Company, as borrower, the several banks and other financial institutions or entities party thereto as lenders, BMO Harris Bank N.A., as an issuing lender and swingline lender, and Bank of Montreal, as administrative agent.	8-K	05/07/2018	10.1

10.36	Amendment No. 1 to Credit Agreement, dated as of June 28, 2018, by and among the Company, as borrower, the several banks and other financial institutions or entities party thereto as lenders, BMO Harris Bank N.A., as an issuing lender and swingline lender, and Bank of Montreal, as administrative agent.	10-K	8/29/2018	10.36	
10.37*	Transition and Separation Agreement dated September 18, 2018 between Extreme Networks, Inc. and Drew Davies.	10-Q	11/02/2018	10.1	
10.38	Second Amendment to the Credit Agreement and First Amendment to the Pledge Agreement Dated September 30, 2018, by and among the Company, as borrower, the several banks and other financial institutions or entities party thereto as lenders, BMO Harris Bank, N.A., as an issuing lender and swingline lender, and Bank of Montreal, as administrative agent.	10-Q	11/02/2018	10.2	
10.39*	Form of Notice of Grant and Grant Agreement for Performance Stock Option.	10-Q	11/02/2018	10.3	
10.40*	Form of Notice of Grant and Grant Agreement for Performance Vesting Restricted Stock Units.	10-Q	11/02/2018	10.4	
10.41*	Offer Letter, executed November 15, 2018, between Extreme Networks, Inc. and Remi Thomas.	8-K	11/20/2018	10.1	
10.42	Form of Indemnification Agreement for directors and officers.	10-Q	05/10/2019	10.1	
10.43	Extreme Networks, Inc. Executive Change in Control Severance Plan Amended and Restated April 30, 2019.	10-Q	05/10/2019	10.2	
10.44	Agreement to Participate in the Extreme Networks, Inc. Executive Change in Control Severance Plan.	10-Q	05/10/2019	10.3	
10.45	Commitment Letter, June 26, 2019, among Bank of Montreal, BMO Capital Markets Corp. and Extreme Networks, Inc.	8-K	06/26/2019	10.1	
10.46	Tender and Support Agreement by and among Extreme Networks, Inc., Clover Merger Sub, Inc. and certain stockholders of Aerohive Networks, Inc.	8-K	06/26/2019	99.1	
10.47	Credit Agreement, dated as of August 9, 2019, by and among Bank of Montreal and BMO Capital Markets Corp. (and the other lenders party thereto) and Extreme Networks, Inc. (and certain of its affiliates).	Schedule TO	08/09/2019	(b)(2)	
21.1	Subsidiaries of Registrant				X
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm.				X
24.1	Power of Attorney (see the signature page of this Form 10 K).				X
31.1	Section 302 Certification of Chief Executive Officer.				X
31.2	Section 302 Certification of Chief Financial Officer.				X
32.1**	Section 906 Certification of Chief Executive Officer.				X
32.2**	Section 906 Certification of Chief Financial Officer.				X

101.INS	Inline XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.	X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.	X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.	X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.	X
101.LAB	InlineXBRL Taxonomy Extension Label Linkbase Document.	X
101. PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X
104	Cover page from the Company's Annual Report on Form 10-K for the year ended June 30, 2019 formatted in Inline XBRL (included in Exhibit 101)	X

* Indicates management or board of directors contract or compensatory plan or arrangement.

** Exhibits 32.1 and 32.2 are being furnished and shall not filed or a part of a registration statement or prospectus for purposes of sections 11 or 12 of the Securities Act of 1933, as amended; are deemed not to be "filed" for purposes of section 18 of the Securities Exchange Act of 1934, as amended; and (the "Exchange Act"), or otherwise are not subject to the liability of that section, nor shall such exhibits be deemed to be incorporated by reference in any registration statement or other document filed under these sections, .the Securities Act of 1933, as amended, or the Exchange Act, except as otherwise specifically stated in such filing.

† This filing excludes schedules and exhibits pursuant to Item 601(b)(2) of Regulation S-K, which the registrant agrees to furnish supplementally to the SEC upon request by the SEC.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on August 29, 2019.

EXTREME NETWORKS, INC.
(Registrant)

By: /s/ REMI THOMAS

Remi Thomas
Executive Vice President, Chief Financial Officer,
(Principal Accounting Officer)
August 29, 2019

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Remi Thomas, his true and lawful attorneys-in-fact, with full power of substitution, for him in any and all capacities, to sign any amendments to this report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact or their substitute or substitutes may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the date indicated:

/s/ JOHN C. SHOEMAKER	/s/ EDWARD B. MEYERCORD III
John C. Shoemaker **Chairman of the Board** **August 29, 2019**	**Edward B. Meyercord III** **President and Chief Executive Officer, Director** **(Principal Executive Officer)** **August 29, 2019**
/s/ REMI THOMAS	/s/ CHARLES CARINALLI
Remi Thomas **Executive Vice President, Chief Financial Officer** **(Principal Accounting Officer)** **August 29, 2019**	**Charles Carinalli** **Director** **August 29, 2019**
/s/ KATHLEEN M. HOLMGREN	/s/ EDWARD H. KENNEDY
Kathleen M. Holmgren **Director** **August 29, 2019**	**Edward H. Kennedy** **Director** **August 29, 2019**
/s/ RAJ KHANNA	
Raj Khanna **Director** **August 29, 2019**	

Exhibit A

AMENDMENT NO. 7 TO
AMENDED AND RESTATED RIGHTS AGREEMENT

This Amendment No. 7 (*"**Amendment No. 7**"*) amends the Amended and Restated Rights Agreement dated as of April 26, 2012, as amended to date. This Amendment No. 7 is effective as of May 31, 2019 (the "***Amendment No. 7 Effective Date***"), by and between Extreme Networks, Inc., a Delaware company (the *"**Company**"*), and Computershare Inc., a Delaware corporation, successor-in-interest to Computershare Shareowner Services LLC, as rights agent (the *"**Rights Agent**"*). Capitalized terms used herein but not defined herein shall have the meanings given to them in the Rights Agreement (as defined below).

RECITALS

A. The Company and the Rights Agent entered into that certain Amended and Restated Rights Agreement, dated as of April 26, 2012, as amended by Amendment No. 1 dated April 30, 2013, Amendment No. 2 dated May 19, 2014, Amendment No. 3 dated May 14, 2015, Amendment No. 4 dated May 5, 2016, Amendment No. 5 dated May 9, 2017 and Amendment No. 6 dated June 1, 2018 (collectively referred to herein as the *"**Rights Agreement**"*).

B. The Board of Directors of the Company has determined that it is desirable and in the best interests of the Company and its shareholders for the Company to amend the Rights Agreement in order to extend the term of the Rights Agreement to May 31, 2020.

C. Accordingly, the parties hereto desire to amend the Rights Agreement to extend the term of the Rights Agreement to May 31, 2020 pursuant to the terms of this Amendment No. 7.

D. The Company has delivered to the Rights Agent a certificate from an appropriate officer of the Company stating that this Amendment No. 7 complies with Section 27 of the Rights Agreement, and has directed the Rights Agent to amend the Rights Agreement as set forth herein.

NOW, THEREFORE, in consideration of the promises and the mutual agreements herein set forth, the parties hereto hereby agree as follows:

1. Clause (i) of Section 7(a) of the Rights Agreement is hereby amended to read in its entirety as follows: "May 31, 2020 (the *"**Final Expiration Date**"),"*.

2. The Rights Agreement, including all exhibits attached thereto, is hereby amended such that all references to the date May 31, 2019 are hereby amended to reference the date May 31, 2020.

3. This Amendment No. 7 shall be deemed to be a contract made under the laws of the State of Delaware and for all purposes shall be governed by and construed in accordance with the laws of such State applicable to contracts to be made and performed entirely within such State; provided, however, that all provisions regarding the

rights, duties and obligations of the Rights Agent shall be governed by and construed in accordance with the laws of the State of New York applicable to contracts made and to be performed entirely within such State.

4. This Amendment No. 7 may be executed in any number of counterparts and each of such counterparts shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument. A signature to this Amendment No. 7 executed and/or transmitted electronically shall have the same authority, effect, and enforceability as an original signature.

5. If any term, provision, covenant or restriction of this Amendment No.7 and/or the Rights Agreement, as amended by this Amendment No. 7, is held by a court of competent jurisdiction or other authority to be invalid, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions of this Amendment No. 7 and/or the Rights Agreement, as amended by this Amendment No. 7, shall remain in full force and effect and shall in no way be affected, impaired or invalidated; provided, however, that if any such excluded term, provision, covenant or restriction shall adversely affect the rights, immunities, duties or obligations of the Rights Agent, the Rights Agent shall be entitled to resign immediately.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties hereto have caused this Amendment No. 7 to the Rights Agreement to be duly executed as of the latest date below.

EXTREME NETWORKS, INC.	COMPUTERSHARE INC.
By: /s/ Katy Motiey	By: /s/ David L. Adamson
Title: Chief Administrative Officer	Title: Senior Vice President
Date: August 20, 2019	Date: August 21, 2019

Exhibit 21.1

EXTREME NETWORKS, INC.

SUBSIDIARY LIST

June 2019

Name	Location
Extreme Networks, Inc.	Delaware
Extreme Networks IHC, Inc.	Delaware
Extreme Networks Delaware LLC	Delaware
Enterasys Networks, Inc.	Delaware
Extreme Federal, Inc.	Delaware
Extreme Networks Canada	Canada
Extreme Networks International (Cayman)	Cayman
Extreme Networks EMEA (Cayman)	Cayman
Extreme Networks Australia PTY, Ltd.	Australia
Extreme Networks Singapore Pte. Ltd.	Singapore
Extreme Networks Korea Ltd.	Korea
Extreme Networks India Private Limited	India
Extreme Networks Hong Kong Limited	Hong Kong
Extreme Networks China Ltd. (Hong Kong)	Hong Kong
Extreme Networks Technology Co. (Beijing) Ltd	China
Extreme Networks Mauritius	Mauritius
Extreme Networks KK (Japan)	Japan
Extreme Networks APAC Sdn Bhd.	Malaysia
Extreme Networks Do Brasil, Ltda.	Brazil
Extreme Networks Mexico, SA de CV	Mexico
Extreme Networks Chile, Ltda	Chile
Extreme Networks SARL (France)	France
Extreme Networks Spain, SL	Spain
Extreme Networks SRL (Italy)	Italy
Extreme Networks GmbH (Germany)	Germany
Extreme Networks Switzerland GmbH	Switzerland
Extreme Networks UK Technology Limited	United Kingdom
Extreme Networks Netherlands BV	Netherlands
Extreme Networks Rus LLC	Russia
Summit CV (Netherlands)	Netherlands
IHC Networks AB (Sweden)	Sweden
Extreme Networks Ireland Limited	Ireland
Extreme Networks s.r.o.	Czech Republic
Extreme Networks Ireland Holding Ltd.	Ireland
Extreme Networks Ireland Ops Limited	Ireland

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Extreme Networks, Inc.:

We consent to the incorporation by reference in the registration statements (Nos. 333-192507, 333-165268, 333-112831, 333-105767, 333-76798, 333-65636, 333-58634, 333-55644, 333-131705, 333-201456, 333-83729, 333-215648, 333-221876, 333-229582 and 333-233164) on Form S-8 of Extreme Networks, Inc. and subsidiaries of our report dated August 29, 2019, with respect to the consolidated balance sheets of Extreme Networks, Inc. as of June 30, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, stockholders' equity, and cash flows for each of the years in the three-year period ended June 30, 2019, and the related notes (collectively, the "consolidated financial statements"), and the effectiveness of internal control over financial reporting as of June 30, 2019, which report appears in the June 30, 2019 annual report on Form 10-K of Extreme Networks, Inc.

/s/KPMG LLP

Raleigh, North Carolina
August 29, 2019

Exhibit 31.1

SECTION 302 CERTIFICATION OF EDWARD B. MEYERCORD III
AS CHIEF EXECUTIVE OFFICER

I, Edward B. Meyercord III, certify that:

1. I have reviewed this Form 10-K of Extreme Networks, 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 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 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 function):

   (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:August 29, 2019

/s/ EDWARD B. MEYERCORD III
Edward B. Meyercord III
President and Chief Executive Officer

Exhibit 31.2

SECTION 302 CERTIFICATION OF REMI THOMAS
AS CHIEF FINANCIAL OFFICER

I, Remi Thomas, certify that:

1. I have reviewed this Form 10-K of Extreme Networks, 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 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 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 function):
   (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:August 29, 2019

/s/ REMI THOMAS

Remi Thomas
Executive Vice President, Chief Financial Officer
(Principal Accounting Officer)

Exhibit 32.1

CERTIFICATION OF EDWARD B. MEYERCORD III AS CHIEF EXECUTIVE OFFICER, PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Extreme Networks, Inc. on Form 10-K for the period ended June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, in the capacities and on the date specified below, hereby certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

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

/s/ EDWARD B. MEYERCORD III
Edward B. Meyercord III
President and Chief Executive Officer
August 29, 2019

Exhibit 32.2

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

In connection with the Annual Report of Extreme Networks, Inc. on Form 10-K for the period ended June 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, in the capacities and on the date specified below, hereby certifies, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

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

/s/ REMI THOMAS

Remi Thomas
Executive Vice President, Chief Financial Officer
(Principal Accounting Officer)
August 29, 2019