

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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2019
or

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

Commission file number: 0-27275

Akamai Technologies, Inc.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

04-3432319

(I.R.S. Employer Identification No.)

145 Broadway
Cambridge, Massachusetts 02142
(Address of principle executive offices) (Zip Code)

Registrant's telephone number, including area code: (617) 444-3000

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 \$0.01 per share	AKAM	Nasdaq Global Select Market

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

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

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

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant was approximately \$12,819.9 million based on the last reported sale price of the Common Stock on the Nasdaq Global Select Market on June 28, 2019.

The number of shares outstanding of the registrant's Common Stock, par value \$0.01 per share, as of February 25, 2020: 161,881,857 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission relative to the registrant's 2020 Annual Meeting of Stockholders are incorporated by reference into Items 10, 11, 12, 13 and 14 of Part III of this annual report on Form 10-K.

AKAMAI TECHNOLOGIES, INC.
ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2019

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Forward-Looking Statements

This annual report on Form 10-K contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. These statements are subject to risks and uncertainties and are based on the beliefs and assumptions of our management as of the date hereof based on information currently available to our management. Use of words such as “believes,” “expects,” “anticipates,” “intends,” “plans,” “estimates,” “should,” “forecasts,” “if,” “continues,” “goal,” “likely” or similar expressions indicates a forward-looking statement. Forward-looking statements are not guarantees of future performance and involve risks, uncertainties and assumptions. Actual results may differ materially from the forward-looking statements we make. See “Risk Factors” elsewhere in this annual report on Form 10-K for a discussion of certain risks associated with our business. We disclaim any obligation to update any forward-looking statements as a result of new information, future events or otherwise.

PART I

Item 1. Business

Overview

Akamai provides solutions for securing, delivering and optimizing content and business applications over the Internet. At the core of our solutions is our globally-distributed Akamai Intelligent Edge Platform, which is designed to help our customers leverage the power and reach of the Internet while protecting them from malicious threats to their business. We deploy servers and technology at the “edge” of the Internet – establishing touch points on its perimeter in more than 130 countries and nearly 1,500 networks around the world. This approach affords us unique insight and visibility into traffic volumes, attack patterns, vulnerabilities and other activities across this complex cloud of networks and systems. Leveraging these insights and our position at the edge, we offer our customers solutions designed to protect them from threats and attacks, while empowering them to securely deliver their business as they engage, entertain and interact with their customers; extend their internal systems beyond their corporate perimeters to control access and better leverage the cloud; and help them operate with the scale, resiliency and security competitiveness businesses demand.

We believe that the edge is the next frontier of digital transformation – the intersection of users, digital technology and transactions, cloud computing and entertainment – and that our security, performance and delivery solutions can give our customers the competitive edge they need to capitalize on the opportunities this intersection creates.

Our Strategy

The technology landscape is rapidly evolving, driving businesses to enhance their digital capabilities to improve productivity, transform customer experiences, increase brand awareness and drive competitive advantage.

The network known as the Internet of Things, or IoT, is now connecting billions of devices that transmit large volumes of data from and within offices, hospitals, manufacturing plants, power grids, roads, schools and homes every second. We believe that new technologies like blockchain are emerging that promise to surpass the ability of current methods to process transactions more quickly and deliver data and content more securely. In addition, organizations seeking streamlined operations, digital transformation and improved cost management are increasing their reliance on servers and networks comprising the “cloud” based on the promise of agility and scale – a promise that has not always been realized.

At the same time, there are challenges and risks that have the potential to disrupt progress in every industry, compromise online experiences, and, in the most extreme cases, destroy value that took decades to build. Security threats are growing more sinister and advanced. Enterprise applications are moving from behind the firewall to the cloud while employees increasingly demand remote access from a variety of devices – which we believe makes securing access harder to achieve with just traditional perimeter defenses. More consumers are “cutting the cord” and consuming entertainment over the Internet rather than through traditional cable, and they are increasingly using mobile devices to view content and shop. Web pages are also vastly more complex than ever before with advertisements, videos, graphics and other third-party content, causing speed and reliability to suffer.

We believe that Akamai is uniquely positioned to help our customers capitalize on the opportunities and mitigate the risks presented by this dynamic environment. The Akamai Intelligent Edge Platform is architected to surround and extend a customer’s existing cloud architecture, so it can accelerate and secure cloud-based activities and workloads on a global scale, while also improving reliability and reducing cost. Our platform comprises more than 250,000 servers deployed in

approximately 3,900 locations around the world, tied together with sophisticated software and algorithms. Our software also resides on millions of end-user devices, as part of our work on client-assisted delivery for large media files. By placing integrated computing resources, data, content and security protection closer to end-users, at the edge, our technology is designed to extend our customers' existing cloud solutions to deliver superior user experiences that are bi-directional, instantaneous, rich and secure. The platform is also architected to enable us to:

- identify, absorb and block security threats;
- efficiently route traffic away from Internet trouble spots;
- help our customer implement a Zero Trust security model as described below;
- detect what devices individuals are using and optimize content delivery to them;
- secure and manage customer identity;
- provide our customers with business, technical and analytical insights into their online operations; and
- understand different types of traffic visiting websites so that customers can respond to them.

We believe that our scale, unique technology, high-quality intellectual property portfolio, industry-leading security capabilities, strong relationships with hundreds of leading telecommunications carriers and thousands of major brands on the web, and relentless and personalized attention to customer and partner needs create significant value for stockholders and provide a meaningful edge over competitors.

Our Solutions

We offer online solutions for the security, delivery and acceleration of websites and applications. Our customers include a large percentage of the world's most important brands, including hundreds of media companies, online retailers, major governments, financial institutions and other leading enterprises. Across all of these customers, our mission is to make digital experiences fast, intelligent and secure.

Cloud Security Solutions

Our Cloud Security Solutions are designed to defend websites, applications and data centers against a multitude of cyberattacks. These solutions include:

- **Kona Site Defender** – Kona Site Defender is a cloud security solution that defends against network and application layer distributed denial of service, or DDoS, attacks, web application attacks and direct-to-origin attacks. This offering provides customizable protection for enterprises that want more control over their application security.
- **Web Application Protector** – Web Application Protector is designed to safeguard web assets from web application and DDoS attacks, while improving performance. This offering provides easy-to-implement application security for organizations that do not have robust security teams or expertise.
- **Site Shield** – Site Shield provides an additional layer of defense for critical websites and web applications. Site Shield is designed to cloak websites from the public Internet, essentially removing them from Internet-accessible IP address space. This helps prevent attackers from directly targeting the application origin and forces traffic to go through our network, where attacks can be better detected and mitigated.
- **Bot Manager** – Bot Manager provides organizations with a flexible framework to better manage the wide array of bots, both helpful and malicious, accessing their websites. It offers the ability to identify bots, categorize different bots based on business or IT impact, and apply different management policies to mitigate that impact.
- **Edge DNS** – The Domain Name System, or DNS, translates human-readable domain names into numerical IP addresses to enable individuals who type in a website name to reach the desired location on the Internet. Our Edge DNS (formerly known as Fast DNS) offering is a DNS resolution solution that is designed to quickly and dependably direct individuals to our customers' websites. Crucially, we have architected this service to protect against DNS-based DDoS attacks.
- **Identity Cloud** – In January 2019, we purchased Janrain, Inc., a provider of customer identity access management solutions. Leveraging the technology we acquired, our Identity Cloud solution enables fast-to-deploy single sign-on (SSO), registration, authentication and preference management. It also enables centralized profile access management that is designed to facilitate our customers' compliance with the myriad and changing privacy-related regulatory requirements around the world.

- **Prolexic Routed** – Prolexic Routed is a DDoS scrubbing solution that is designed to protect web- and IP-based applications, entire data centers and supporting network infrastructure from DDoS attacks. It provides cloud-based security against high-bandwidth, sustained DDoS attacks as well as potentially those that target specific applications and services.
- **Client Reputation** – Client Reputation provides an additional layer of security based on Akamai’s visibility into prior malicious behavior on the Akamai network. Our algorithms use both legitimate and attack traffic to profile the behavior of attacks, clients and applications. Client Reputation assigns risk scores to every known malicious IP address and enables customers to take action on individual clients based on the assessed risk to their organizations.

Enterprise Security Solutions

Our Enterprise Security Solutions are designed to help customers move from a legacy perimeter-based approach to security to what we refer to as a “Zero Trust” security model. Zero Trust is a network security model based on a strict identity verification process. The framework dictates that only authenticated and authorized users and devices can access applications and data. At the same time, it protects those applications and users from advanced threats on the Internet. Our approach is centered on dynamically controlling access to individual applications behind the network firewall and proactively protecting users from malware using the Intelligent Edge Platform. Our key Enterprise Security Solutions include:

- **Enterprise Application Access** – Enterprise Application Access enables adaptive access to applications behind the firewall, based on identity and a multitude of dynamic security signals, without providing users access to our customer’s broader corporate network.
- **Enterprise Threat Protector** – Enterprise Threat Protector is designed to enable enterprise security teams to proactively and easily identify, block and mitigate targeted attacks such as malware, ransomware, phishing and data exfiltration that exploit DNS.

Web and Mobile Performance Solutions

The ultimate goal of our Web and Mobile Performance Solutions is to enable dynamic websites and applications to have instant response times, no matter where the user is, what device or browser they are using, or how they are connected to the Internet. This is accomplished through a variety of advanced technologies embedded in our platform, which can be thought of as a virtual, streamlined Internet built on top of the native Internet. Key offerings include:

- **Ion** – Ion is a suite of intelligent performance optimization tools and controls designed to improve user experiences on the web and iOS and Android devices. This solution continuously monitors the end-user experience to adapt in real-time to changes in content, user behavior and connectivity.
- **Dynamic Site Accelerator** – Dynamic Site Accelerator is designed to improve reliability, increase the offload of traffic from origin servers and enhance network performance while handling the specific requirements of dynamically-generated content without a costly hardware buildout. Using real-time network optimizations and advanced caching techniques, this solution is designed to accelerate and secure interactive websites; helping customers to scale to meet sudden traffic surges arising from flash sales or other events.
- **Image Manager** – To help our customers cope with the multitude and variety of devices used by their users and the complexity of preparing images for delivery over the web, Image Manager automatically optimizes online images to attain the best combination of size, quality and file format suited for each image and device and automates the creation and delivery of tailored derivative image assets.
- **CloudTest** – CloudTest helps customers prepare for business-critical traffic events or changes to their Internet-facing environment by empowering them to conduct large-scale load testing safely. The solution allows customers to conduct additional analysis of their websites in a pre-production environment. Testing capabilities include web and mobile applications with real-time analytics and customizable dashboards that allow for root cause analysis while tests are in process.
- **mPulse** – mPulse is a real user monitoring offering that provides real-time website performance data to help customers improve their digital experiences. Using advanced algorithms and data visualization tools, mPulse generates insights that enable enterprises to identify and address performance issues based on their impact on customer engagement, conversions, revenue and other key business metrics.

Media Delivery Solutions

In recent years, online and mobile gaming, as well as streaming of movies, television and live events, have come to represent a significant percentage of traffic on the Internet. An increasing number of large media companies have introduced over-the-top (often referred to as OTT) video offerings that have increased the amount of video available online. Providing solutions to optimize delivery of media content is an important part of our current and future strategy. Our Media Delivery Solutions are designed to enable enterprises to execute their digital media distribution strategies, not only by providing solutions to address their volume and global reach requirements but also by improving the end-user experience, boosting reliability and reducing the cost of Internet-related infrastructure. Our offerings include:

- **Adaptive Media Delivery** – We provide delivery solutions for video and music streaming that are designed to cope with variable connection speeds and different devices and to reach disparate locations around the world.
- **Download Media Delivery** – Our download delivery offering provides accelerated distribution for large file downloads, including games, progressive media (video and audio) files, documents and other file-based content.
- **Media Services Live** – This service helps simplify the preparation of live-streamed television, enabling our customers to reliably deliver high-quality live content to online audiences across multiple types of devices and platforms.
- **Media Analytics** – We offer a comprehensive suite of analytics tools to monitor online video viewing, while measuring audience engagement, and quality of service performance. These solutions are designed to provide actionable and relevant metrics to help businesses understand their entire media workflow from the initial introduction of media into the workstream through arrival at the device.
- **NetStorage** – NetStorage is a globally-distributed cloud storage solution for our customers' content that offers automatic geographically-dispersed replication that is architected for resiliency, high availability and real time performance optimization.

Carrier Solutions

With the growth in consumer adoption of IP-delivered television and online/mobile gaming, carriers around the world have experienced significant traffic increases, resulting in congestion across networks from aggregation to backbone to interconnection. Compounding this challenge, security and personalized services are now critical for carriers to protect and grow their revenue and subscriber bases. To address these needs, our carrier offerings are designed to help customers operate a cost-efficient network that capitalizes on traffic growth and new subscriber services by reducing the complexity of building a content delivery network, or CDN, and interconnecting access providers. Our carrier offerings include:

- **Security and Personalization Services (SPS)** – We offer an array of SPS solutions. Our SPS Secure Business offering is designed to enable carriers to sell to their small- and medium-sized business customers easy-to-deploy cyberthreat protection to prevent ransomware, phishing, botnets and zero-day malware attacks. The SPS Secure Consumer product is a cybersecurity solution designed to protect a carrier's consumer subscribers and IoT devices from phishing, viruses, ransomware and malware. The solution includes parental controls that allow subscribers to tailor Internet access for each family member from a simple web page. Our SPS Reach offering is designed to empower service providers to create in-browser messages that can reach 85% of target audiences within the first 24 hours. Multimedia messages – including surveys, videos and web pages – are delivered to subscribers' smartphones, tablets and desktop computers.
- **DNS Infrastructure** – We offer intelligent recursive DNS platforms built for effective management of DNS traffic in licensed, managed and cloud-based solutions. To improve subscriber experience, our DNS Infrastructure solutions manage subscriber preferences and enable security and personalization services that are designed for carriers.
- **Aura Managed CDN** – Aura Managed CDN is a scalable, turnkey CDN solution designed to provide carriers with CDN capabilities through an infrastructure that is maintained by Akamai. With it, an operator can leverage the same CDN techniques used by Akamai, but on servers that are dedicated to the carrier's services. Operators can deliver multi-screen video services and large objects, plus offer commercial CDN services, relying on Akamai CDN experts and technology for content provisioning, delivery and reporting.

Services and Support Solutions

Akamai provides an array of service and support offerings that are designed to assist our customers with integrating, configuring, optimizing and managing our core offerings. Once customers are deployed on our network, they can rely on our professional services experts for customized solutions, problem resolution and 24/7 technical support. Special features available to enterprises that purchase our premium support solution include a dedicated technical account team, proactive service monitoring, custom technical support handling procedures and customized training.

With the increasing focus on security threats, we also offer specialized managed security services to help our customers implement and maintain Akamai cloud security solutions. These services include 24/7 traffic monitoring, configuration assistance, technical security reviews, threat advisories and emergency support for security events.

Our Technology and Network

The Akamai Intelligent Edge Platform provides the technological underpinnings for all of our solutions. We use data generated in connection with each of our solutions to improve and augment the functionality of our overlay network and, in turn, to improve the effectiveness of our other solutions. In this approach, insights and learnings are integrated across the broader platform in support of our entire solution portfolio.

The Akamai Intelligent Edge Platform leverages more than 250,000 servers deployed in nearly 1,500 networks ranging from large, backbone network providers to medium and small Internet service providers, or ISPs, to cable modem and satellite providers to universities and other networks. By deploying servers within a wide variety of networks across more than 130 countries, we are better able to manage and control routing and delivery quality to geographically diverse users. We also have thousands of peering relationships that provide us with direct paths to end-user networks, which reduce data loss, while also potentially giving us more options for delivery at reduced cost.

To make this wide-reaching deployment effective, we use specialized technologies, such as advanced routing, load balancing, data collection and monitoring. Our intelligent routing software is designed to ensure that website visitors experience fast page loading, access to applications and content assembly wherever they are on the Internet and regardless of global or local traffic conditions. Dedicated professionals staff our network operations command center 24 hours a day, seven days a week to monitor and react to Internet traffic patterns and trends. We frequently deploy enhancements to our software globally to strengthen and improve the effectiveness of our network.

Our platform offers flexibility too. Customers can control the extent of their use of Akamai's technology to scale on demand, using as much or as little capacity of the global platform as they require, to support widely varying traffic and rapid growth without the need for expensive and complex internal infrastructure.

Customers

As of December 31, 2019, our customers included many of the world's leading corporations, including Adobe, Airbnb, Alibaba, Autodesk, Capital Group, Carnival Corporation, The Coca-Cola Company, Concur, Crate & Barrel, eBay, Electronic Arts, Epic Games, FedEx, Fidelity Investments, General Electric, Honda, IKEA, Japan Airlines, JetBlue, Lufthansa, Maersk Transportation & Logistics, Marriott, NBCUniversal, Panasonic, Panera Bread, PayPal, Philips, Qualcomm, Rabobank, Riot Games, Sony Interactive Entertainment, Spotify, Telefonica, Toshiba, Turner Broadcasting, Ubisoft, Viacom and The Washington Post. We also actively sell to government agencies. As of December 31, 2019, our public-sector customers included the Federal Aviation Administration, the U.S. Census Bureau, the U.S. Department of Defense, the U.S. Department of Labor, the U.S. Department of State and the U.S. Department of the Treasury.

No customer accounted for 10% or more of total revenue for any of the years ended December 31, 2019, 2018 and 2017. Less than 10% of our total revenue in each of the years ended December 31, 2019, 2018 and 2017 was derived from contracts or subcontracts terminable at the election of the federal government, and we do not expect such contracts to account for more than 10% of our total revenue in 2020.

Sales, Services and Marketing

We market and sell our solutions globally through our direct sales and services organization and through many channel partners including AT&T, Deutsche Telecom, IBM, Microsoft, Orange Business Services and Telefonica Group. In addition to entering into agreements with resellers, we have several other types of sales and marketing focused alliances with entities such as system integrators, application service providers, referral partners and sales agents. By aligning with these partners, we believe we are better able to market our solutions and encourage increased adoption of our technology throughout the industry.

Our sales, services and marketing professionals are based in locations across the Americas, Europe, the Middle East and Asia and focus on direct and channel sales, sales operations, professional services, account management and technical consulting. As of December 31, 2019, we had 3,639 employees in these roles.

To support our sales efforts and promote the Akamai brand, we conduct comprehensive marketing programs. Our marketing strategies include an active public relations campaign, print advertisements, online advertisements, participation at trade shows, strategic alliances, ongoing customer communication programs, training and sales support.

Competition

The market for our solutions is intensely competitive and characterized by rapidly changing technology, evolving industry standards and frequent new product and service innovations. We expect competition for our offerings to increase both from existing competitors and new market entrants. We compete primarily on the basis of:

- the performance and reliability of our solutions;
- return on investment in terms of cost savings and new revenue opportunities for our customers;
- reduced infrastructure complexity;
- sophistication and functionality of our offerings;
- scalability;
- security;
- ease of implementation and use of service;
- customer support; and
- price.

We compete with companies offering products and services that address Internet performance problems, including companies that provide Internet content delivery and hosting services, security solutions, technologies used by carriers to improve the efficiency of their systems, streaming content delivery services and equipment-based solutions for Internet performance problems, such as load balancers and server switches. Other companies offer online distribution of digital media assets through advertising-based billing or revenue-sharing models that may represent an alternative method for charging for the delivery of content and applications over the Internet. In addition, existing and potential customers may decide to purchase or develop their own hardware, software or other technology solutions rather than rely on a third-party provider like us. Our security solutions compete with those offered by both hardware and software providers, many of which are more established security vendors than we are.

We believe that we compete favorably with other companies in our industry through the global scale of the Akamai Intelligent Edge Platform, which we believe provides the most effective means of meeting the needs of enterprise customers and is unique to us. In our view, we also benefit from the superior quality of our offerings, our customer service and the information we can provide to our customers about their online operations and value.

Proprietary Rights and Licensing

Our success and ability to compete are dependent on developing and maintaining the proprietary aspects of our technology and operating without infringing on the proprietary rights of others. We rely on a combination of patent, trademark, trade secret and copyright laws and contractual restrictions to protect the proprietary aspects of our technology. As of December 31, 2019, we owned, or had exclusive rights to, more than 416 U.S. patents covering our technology as well as patents issued by other countries. Our U.S.-issued patents have terms extendable to various dates between 2020 and 2039. We do not believe that the expiration of any particular patent in the near future would be materially detrimental to our business. In October 1998, we entered into a license agreement with the Massachusetts Institute of Technology, or MIT, under which we were granted a royalty-free, worldwide exclusive right to use and sublicense the intellectual property rights of MIT under various patent applications and copyrights relating to Internet content delivery technology. We seek to limit disclosure of our intellectual

property by requiring employees and consultants with access to our proprietary information to execute confidentiality agreements with us and by restricting access to our source code.

Employees

As of December 31, 2019, we had 7,724 full-time and part-time employees. Our future success will depend in part on our ability to attract, retain and motivate highly qualified technical, managerial and other personnel for whom competition is intense. Our employees are not represented by any collective bargaining unit. We believe our relations with our employees are good, and we have been acknowledged in respected publications as an excellent place to work.

Additional Information

Akamai was incorporated in Delaware in 1998, and we have our corporate headquarters at 145 Broadway, Cambridge, Massachusetts. Our Internet website address is www.akamai.com. We make available, free of charge, on or through our Internet website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments thereto that we have filed or furnished with the Securities and Exchange Commission, or the Commission, as soon as reasonably practicable after we electronically file them with the Commission. We are not, however, including the information contained on our website, or information that may be accessed through links on our website, as part of, or incorporating such information by reference into, this annual report on Form 10-K.

Item 1A. Risk Factors

The following are important factors that could cause our actual operating results to differ materially from those indicated or suggested by forward-looking statements made in this annual report on Form 10-K or presented elsewhere by management from time to time.

We may face slowing revenue growth which could negatively impact our profitability and stock price.

The revenue growth rate we have enjoyed in recent years may not continue in future periods and could decline. Our revenue depends on continued growth in demand for our solutions and our ability to maintain the prices we charge for them. Our traditional offerings, particularly our Media and Web Performance solutions, are subject to increasing pricing pressure in certain verticals and geographies due to competition and business conditions affecting many of our customers. This has increased the difficulty of accelerating revenue growth. Our ability to increase our revenue depends on many other factors including how well we can:

- retain existing customers and sell new and additional products to them;
- attract new customers;
- develop and sell new solutions that are attractive to our current and potential customers and not easily replicable by competitors;
- address potential commoditization of our delivery-based solutions, which can lead to lower prices and loss of customers to competitors;
- counteract multi-vendor policies designed to reduce reliance on any particular provider, such as us;
- adapt to changes in our customer contracting models from a committed revenue structure to a "pay-as-you-go" approach, which would make it easier for customers to stop doing business with us;
- anticipate and react to changes in usage or adoption rates of the Internet, e-commerce and electronic devices;
- handle the impact of competition across our business;
- cope with any inability of our customers, particularly commerce, travel and media companies, to continue their operations and spending levels; and
- manage the impact of changes in general economic conditions, public health issues (for example, an outbreak of a contagious disease such as the novel coronavirus), natural disasters and public unrest.

A slowing revenue growth rate could negatively impact our profitability and stock price.

If we are unable to continue to increase the amount of traffic we deliver over our network, it will be difficult to maintain or improve our current level of profitability without impacting our operations.

Maintaining or improving our profitability depends both on our ability to increase our revenue, even with potential challenges discussed above, and limit our expenses. We base our decisions about expense levels and investments on estimates of our future revenue and future anticipated rate of growth; however, many of our expenses are fixed cost in nature for some minimum amount of time so it may not be possible to reduce costs in a timely manner or without incurring fees to exit certain obligations early. In anticipation of higher traffic on our network, we have increased capital expenditures recently and expect to continue doing so in the near term future. As a result, increasing the amount of traffic we deliver is key to profitable revenue growth. Numerous factors can impact traffic growth including:

- the pace of introduction of OTT video delivery initiatives by our customers;
- the popularity of our customers' streaming offerings as compared to those offered by companies that do not use our solutions;
- the pace at which our customers' enterprise applications move from behind the firewall to the cloud;
- media and other customers utilizing their own data centers and implementing delivery approaches that limit or eliminate reliance on third party providers like us; and
- general economic conditions and industry pressures.

If we are unable to increase revenue and limit expenses, our results of operations would suffer. If we are required to significantly reduce expenses to maintain or improve profitability, such actions may negatively affect our ability to invest in our business for innovation, systems improvement and other initiatives.

If we are unable to compete effectively, our business will be adversely affected.

We compete in markets that are intensely competitive and rapidly changing. Our current and potential competitors vary by size, product offerings, and geographic region and range from start-ups that offer solutions competing with a discrete part of our business to large technology or telecommunications companies that offer, or may be planning to introduce, products and services that are broadly competitive with what we do. The primary competitive factors in our market are: differentiation of technology, global presence, quality of solutions, customer service, technical expertise, security, ease-of-use, breadth of services offered, price, and financial strength. Our competitors include some of our current partners and customers. Many of our current and potential competitors have substantially greater financial, technical and marketing resources, larger customer bases, broader product portfolios, longer operating histories, greater brand recognition and more established relationships in the industry than we do. As a result, some of these competitors may be able to:

- develop superior products or services;
- enter new markets more easily;
- gain greater market acceptance for their products and services;
- expand their offerings more efficiently and more rapidly;
- bundle their products that are competitive with ours with other solutions they offer in a way that makes our offerings less appealing to current and potential customers;
- more quickly adapt to new or emerging technologies and changes in customer requirements;
- take advantage of acquisition, investment and other opportunities more readily;
- offer lower prices than ours;
- spend more money on the promotion, marketing, and sales of their products and services; and
- spend more money on research and development, including offering higher salaries to talented professionals which may impact our ability to hire or retain engineering and other personnel.

Smaller and more nimble competitors may be able to:

- attract customers by offering less sophisticated versions of products and services than we provide at lower prices than those we charge;
- develop new business models that are disruptive to us;
- in some cases, use funds from recent initial public offerings or private financings to strengthen their business to enable them to better compete with us; and
- respond more quickly than we can to new or emerging technologies, changes in customer requirements, and market and industry developments, resulting in superior offerings.

Ultimately, any type of increased competition could result in price and revenue reductions, loss of customers and loss of market share, each of which could materially impact our business, profitability, financial condition, results of operations and cash flows.

If current and potential large customers shift to hardware-based or other DIY internal solutions, our business will be negatively impacted.

We are reliant on large media and other customers to direct significant amounts of traffic to our network for a significant part of our revenues. In the past, some of those customers have determined that it is better for them to employ a “do-it-yourself” or “DIY” strategy by putting in place equipment, software, and other technology solutions for content and application delivery and security protection within their internal systems instead of using Akamai solutions for some or all of their needs. Essentially, this is another form of competition for us. As the amount of money a customer spends with us increases, the risk that they will seek alternative solutions such as DIY or a multi-vendor policy likewise increases. If additional large customers shift to this model, traffic on our network and our contracted revenue commitments would decrease, which would negatively impact our business, profitability, financial condition, results of operations and cash flows.

If we do not continue to develop new solutions that are attractive to enterprises, our revenues and operating results could be adversely affected.

Innovation is important to our revenue growth and profitability. We must develop new solutions that customers want to purchase in a rapidly-changing technology environment where it can be difficult to anticipate the needs of potential customers and competitors are also developing new solutions. The process of developing new solutions is complex, lengthy, and uncertain; we must commit significant resources to developing new services or features without knowing whether our investments will result in solutions the market will accept, and we may choose to invest in business areas for which a viable market for our products does not ultimately develop. This could cause our expenses to grow more rapidly than our revenue. Similarly, trying to innovate through acquisition can be costly and with uncertain prospects for success. If we choose to cut research and development expenses to increase our profitability, investment in innovation could suffer and limit our development of new products. Failure to develop, on a cost-effective basis, innovative new or enhanced solutions that are attractive to customers and profitable to us could have a material detrimental effect on our business, results of operations, financial condition and cash flows.

We and the other companies that compete in this industry and these markets experience continually shifting business relationships, commercial focuses and business priorities, all of which occur in reaction to industry and market forces and the emergence of new opportunities. These shifts have led or could lead to our customers or partners becoming our competitors; network suppliers no longer seeking to work with us; and large technology companies that previously did not appear to show interest in the markets we seek to address entering into those markets as our competitors. With this constantly changing environment, we may face operational difficulties in adjusting to the changes or our core strategies could become obsolete. Any of these developments could harm our business.

Cybersecurity breaches and attacks on us, as well as steps we need to take to prevent them, could lead to significant costs and disruptions that harm our business, financial results and reputation.

The Akamai Intelligent Edge network transmits and stores both our and our customers' information, data, and encryption keys; customer information and data may, in turn, include individual data of and about their individual end-users. Maintaining the security of the information we hold and of our solutions, network and internal IT systems, which include hundreds of thousands of servers, is a critical issue for us and our customers. Internet-based attacks on our customers and our own network are frequent, rapidly evolving and take a variety of forms, including DDoS attacks, infrastructure attacks, botnets, malicious

file uploads, cross-site scripting, credential abuse, ransomware, bugs, viruses, worms and malicious software programs. Malicious actors also attempt to fraudulently induce employees or suppliers to disclose sensitive information through illegal electronic spamming, phishing or other tactics. In addition, unauthorized parties may attempt to gain physical access to our facilities in order to infiltrate our internal-use information systems. Cyberthreats are constantly evolving, increasing the difficulty of detecting and successfully defending against them.

Moreover, the complexities in managing the security profile of a distributed network with vast scale and geographic reach that evolves to incorporate new capabilities expose us to both known and unknown vulnerabilities. These vulnerabilities, resident in either software or configurations, may persist for extended periods of time. Similar security risks exist with respect to acquired companies, our business partners and the third-party vendors that we rely on for aspects of our information technology support services and administrative functions. As a result, we are subject to risks that the activities of our business partners and third-party vendors may adversely affect our business even if an attack or breach does not directly target our systems.

To defend against security threats to our internal IT systems and cloud-based services, we must continuously engineer more secure solutions, enhance security and reliability features, improve the deployment of software updates to address security vulnerabilities, develop mitigation technologies that help to secure customers from attacks, and maintain the digital security infrastructure that protects the integrity of our network, products, and services. This is frequently costly, with a negative impact on near-term profitability. We may need to increase our spending in the future; these costs could reduce our operating margin.

Breaches of our facilities, network, or data security could disrupt the security of our systems and business applications, impair our ability to provide solutions to our customers and protect their data, result in product development delays, compromise confidential or technical business information, thereby harming our reputation or competitive position, result in theft or misuse of our intellectual property or other assets, expose us to lawsuits, fines or other penalties under privacy laws and other regulations, require us to allocate more resources to improved technologies, or otherwise adversely affect our business. Any of these occurrences could have a material detrimental effect on our business, results of operations, financial condition and cash flows.

Evolving privacy, content and other regulations could negatively impact our profitability and business operations.

Laws and regulations that apply to the Internet related to privacy, security requirements, data localization, and restrictions on social media or other content could pose risks to our revenues, intellectual property, and customer relationships as well as increase expenses or create other disadvantages to our business. Interpretations of laws or regulations that would subject us to regulatory supervision or, in the alternative, require us to exit a line of business or a country, could lead to loss of significant revenues and have a negative impact on the quality of our solutions.

Privacy laws are rapidly proliferating, changing and evolving globally. Governments, privacy advocates and class action attorneys are increasingly scrutinizing how companies collect, process, use, store, share and transmit personal data. New laws, such as the European Union General Data Protection Regulation, or GDPR, and the California Consumer Privacy Act of 2018, or CCPA, and industry self-regulatory codes have been enacted and more laws are being considered that may affect how we use data generated from our network as well as our ability to reach current and prospective customers, understand how our solutions are being used and respond to customer requests allowed under the laws. Any perception that our business practices, our data collection activities or how our solutions operate represent an invasion of privacy, whether or not consistent with current regulations and industry practices, may subject us to public criticism (or boycotts), class action lawsuits, reputational harm, or claims by regulators, industry groups or other third parties, all of which could disrupt our business and expose us to liability. Compliance with GDPR and other laws may be administratively difficult and expensive.

Engineering efforts to build new capabilities to facilitate compliance with data localization, privacy, law enforcement access requirements, or other regulations could require us to take on substantial expense and the divert engineering resources from other projects. We might experience reduced demand for our offerings if we are unable to engineer products that meet our legal duties or help our customers meet their obligations under the GDPR, the CCPA, or other data regulations, or if the changes we implement to comply with such laws and regulations make our offerings less attractive.

Our ability to leverage the data generated by our global network of servers is important to the value of many of the solutions we offer, our operational efficiency and future product development opportunities. Our ability to use data in this way may be constrained by regulatory developments. Compliance with applicable laws and regulations regarding personal data may require changes in services, business practices, or internal systems that result in increased costs, lower revenue, reduced efficiency, or greater difficulty in competing with foreign-based firms. Compliance with data regulations might limit our

ability to innovate or offer certain features and functionality in some jurisdictions where we operate. Failure to comply with existing or new rules may result in significant penalties or orders to stop the alleged noncompliant activity, as well as negative publicity and diversion of management time and effort.

Although we take steps intended to improve the security controls across our business groups and geographies, our security controls over personal data, our training of employees and third parties on data security, and other practices we follow may not prevent the improper disclosure or misuse of customer or end user data we store and manage. Improper disclosure or misuse of personal data could harm our reputation, lead to legal exposure to end customers or end users, or subject us to liability under laws that protect personal data, resulting in increased costs or loss of revenue.

We face risks associated with global operations that could harm our business.

A significant portion of our revenue growth in recent quarters has been attributable to revenue gains outside the United States. Our operations in foreign countries subject us to risks (in addition to the regulatory risks discussed above) that may increase our costs, make our operations less efficient and require significant management attention. These risks include:

- uncertainty regarding liability for content or services;
- loss of revenues if the U.S. or foreign governments impose limitations on doing business with significant current or potential customers;
- adjusting to different employee/employer relationships and different regulations governing such relationships;
- corporate and personal liability for alleged or actual violations of laws and regulations;
- difficulty in staffing, developing and managing foreign operations as a result of distance, language and cultural differences;
- theft of intellectual property in high-risk countries where we operate;
- difficulties in transferring funds from, or converting currencies in, certain countries;
- managing the costs and processes necessary to comply with export control, sanctions, anti-corruption, data protection and competition laws and regulations;
- reliance on channel partners over which we have limited control or influence on a day-to-day basis; and
- potentially adverse tax consequences.

To continue to grow our revenues generated outside the United States, we will likely need to increase our reliance on resellers, systems integrators, and other strategic partners and to leverage those relationships to expand our distribution channels. We have not always been successful at developing these relationships due to the complexity of our solutions, our historical reliance on an internal sales force, and other factors. Our failure to maintain and increase the number and quality of relationships with channel partners, and any inability to successfully execute on the partnerships we initiate, could significantly impede our revenue growth prospects in the short and long term.

Geo-political events such as the United Kingdom's withdrawal from the European Union, commonly referred to as Brexit, may increase the likelihood of certain of these risks materializing or heighten their impact on us in affected regions. In particular, it is possible that the level of economic activity in the United Kingdom and the rest of Europe will be adversely impacted and that we will face increased regulatory and legal complexities, including those related to tax, trade, security and employee relations as a result of Brexit. Such changes could be costly and potentially disruptive to our operations and business relationships in affected regions. Trade disputes, unrest and other political activity, as well as public health issues (for example, an outbreak of a contagious disease such as the novel coronavirus), safety issues, natural disasters or general economic or political factors that disrupt our customers' businesses or our own operations could negatively impact our revenue and ability to offer services in impacted countries.

We entered into a Non-Prosecution Agreement with the U.S. Securities and Exchange Commission, or the Commission, in June 2016 in connection with resolution of an investigation relating to sales practices in a country outside the U.S. In the event we violate the terms of this Non-Prosecution Agreement, we could be subject to additional investigation or enforcement by the Commission or the Department of Justice. Although we have implemented policies and procedures designed to ensure compliance with the Non-Prosecution Agreement and relevant laws and regulations, there can be no assurance that our employees, contractors or agents will not violate our policies or applicable laws. Any such violations could result in fines and penalties, criminal sanctions against us or our employees and prohibitions on the conduct of our business and on our ability to

offer our solutions in one or more countries. They could also materially affect our brand or reputation, our global operations, any international expansion efforts, our ability to attract and retain employees, our business overall, and our financial results.

Fluctuations in foreign currency exchange rates affect our operating results in U.S. dollar terms.

Revenue generated and expenses incurred by our international subsidiaries are often denominated in the currencies of the local countries. As a result, our consolidated U.S. dollar financial statements are subject to fluctuations due to changes in exchange rates as the financial results of our international subsidiaries are translated from local currencies into U.S. dollars. In addition, our financial results are subject to changes in exchange rates that impact the settlement of transactions in non-functional currencies. While we have implemented a foreign currency hedging program to mitigate transactional exposures, there is no guarantee that such program will be effective.

Defects or disruptions in our products and IT systems could require us to increase spending on upgrading systems, diminish demand for our solutions or subject us to substantial liability.

Our solutions are highly complex and are designed to be deployed in and across numerous large and complex networks that we do not control. From time to time, we have needed to correct errors and defects in the software that underlies our platform that have given rise to service incidents or otherwise impacted our operations. We have also experienced customer dissatisfaction with the quality of some of our media delivery and other services, which has led to loss of business and could lead to loss of customers in the future. While we have robust quality control processes in place, there may be additional errors and defects in our software that may adversely affect our operations. We may not have in place adequate quality assurance procedures to ensure that we detect errors in our software in a timely manner, and we may have insufficient resources to efficiently address multiple service incidents happening simultaneously or in rapid succession. If we are unable to efficiently and cost-effectively fix errors or other problems that may be identified and improve the quality of our solutions or systems, or if there are unidentified errors that allow persons to improperly access our services or systems, we could experience loss of revenue and market share, damage to our reputation, increased expenses, delayed payments and be exposed to legal actions by our customers.

Our business relies on our data systems, traffic measurement systems, billing systems, ordering processes and other operational and financial reporting and control systems. All of these systems have become increasingly complex due to the diversification and complexity of our business, acquisitions of new businesses with different systems, and increased regulation over controls and procedures. As a result, these systems could generate errors that impact traffic measurement or invoicing, revenue recognition and financial forecasting. We will need to continue to upgrade and improve our data systems, traffic measurement systems, billing systems, ordering processes and other operational and financial systems, procedures and controls. These upgrades and improvements may be difficult and costly. If we are unable to adapt our systems and organization in a timely, efficient and cost-effective manner to accommodate changing circumstances, our business may be adversely affected.

Acquisitions and other strategic transactions we complete could result in operating difficulties, dilution, diversion of management attention and other harmful consequences that may adversely impact our business and results of operations.

We expect to continue to pursue acquisitions and other types of strategic relationships that involve technology sharing or close cooperation with other companies. Acquisitions and other complex transactions are accompanied by a number of risks, including the following:

- difficulty integrating the technologies, operations and personnel of acquired businesses;
- potential disruption of our ongoing business;
- potential distraction of management;
- diversion of business resources from core operations;
- financial consequences including an increase in operating expenses and other dilutive effects on our earnings;
- assumption of legal risks related to compliance with laws, including privacy and anti-corruption regulations;
- failure to realize synergies or other expected benefits;
- acquisition of IT systems that expose us to cybersecurity risks;
- increased accounting charges such as impairment of goodwill or intangible assets, amortization of intangible assets acquired and a reduction in the useful lives of intangible assets acquired; and

- potential unknown liabilities associated with acquired businesses.

Any inability to integrate completed acquisitions or combinations in an efficient and timely manner could have an adverse impact on our results of operations. If we use a significant portion of our available cash to pay for acquisitions that are not successful, it could harm our balance sheet and limit our flexibility to pursue other opportunities without having enjoyed the intended benefits of the acquisition. As we complete acquisitions, we may encounter difficulty in incorporating acquired technologies into our offerings while maintaining the quality standards that are consistent with our brand and reputation. If we are not successful in completing acquisitions or other strategic transactions that we may pursue in the future, we may incur substantial expenses and devote significant management time and resources without a successful result. Future acquisitions could require use of substantial portions of our available cash or result in dilutive issuances of securities.

Our failure to effectively manage our operations as our business evolves could harm us.

Our future operating results will depend on our ability to manage our operations. As a result of the diversification of our business, personnel growth, increased usage of alternative working arrangements, acquisitions and international expansion in recent years, many of our employees are now based outside of our Cambridge, Massachusetts headquarters; however, most key management decisions are made by a relatively small group of individuals based primarily at our headquarters. If we are unable to appropriately increase management depth, enhance succession planning and decentralize our decision-making at a pace commensurate with our actual or desired growth rates, we may not be able to achieve our financial or operational goals. It is also important to our continued success that we hire qualified personnel, properly train them and manage out poorly-performing personnel, all while maintaining our corporate culture and spirit of innovation. If we are not successful in these efforts, our growth and operations could be adversely affected.

Our restructuring and reorganization activities may be disruptive to our operations and harm our business.

Over the past several years, we have implemented internal restructurings and reorganizations designed to reduce the size and cost of our operations, improve operational efficiencies, enhance our ability to pursue market opportunities and accelerate our technology development initiatives. We may take similar steps in the future as we seek to realize operating synergies, optimize our operations to achieve our target operating model and profitability objectives, respond to market forces, or better reflect changes in the strategic direction of our business. Disruptions in operations may occur as a result of taking these actions. Taking these actions may also result in significant expense for us, including with respect to workforce reductions, as well as decreased productivity due to employee distraction and unanticipated employee turnover. Substantial expense or business disruptions resulting from restructuring and reorganization activities could adversely affect our operating results.

If we are unable to retain our key employees and hire and retain qualified sales, technical, marketing and support personnel, our ability to compete could be harmed.

Our future success depends upon the services of our executive officers and other key technology, sales, marketing and support personnel who have critical industry experience and relationships. There is significant competition for talented individuals in the regions in which our primary offices are located, which affects both our ability to retain key employees and hire new ones. None of our officers or key employees is bound by an employment agreement for any specific term, and members of our senior management have left Akamai over the years for a variety of reasons. The loss of the services of any of our key employees or our inability to attract and retain new talent may be disruptive to our operations and overall business.

We may need to defend against patent or copyright infringement claims, which would cause us to incur substantial costs or limit our ability to use certain technologies in the future.

As we expand our business and develop new technologies, products and services, we have become increasingly subject to intellectual property infringement and other claims and related litigation. We have also agreed to indemnify our customers and channel and strategic partners if our solutions infringe or misappropriate specified intellectual property rights; as a result, we have been and could again become involved in litigation or claims brought against customers or channel or strategic partners if our solutions or technology are the subject of such allegations. Any litigation or claims, whether or not valid, brought against us or pursuant to which we indemnify our customers or partners could result in substantial costs and diversion of resources and require us to do one or more of the following:

- cease selling, incorporating or using features, functionalities, products or services that incorporate the challenged intellectual property;
- pay substantial damages and incur significant litigation expenses;

- obtain a license from the holder of the infringed intellectual property right, which license may not be available on reasonable terms or at all; or
- redesign products or services.

If we are forced to take any of these actions, our business may be seriously harmed.

Our business will be adversely affected if we are unable to protect our intellectual property rights from unauthorized use or infringement by third parties.

We rely on a combination of patent, copyright, trademark and trade secret laws and contractual restrictions on disclosure to protect our intellectual property rights. These legal protections afford only limited protection. We have previously brought lawsuits against entities that we believed were infringing our intellectual property rights but have not always prevailed. Such lawsuits can be expensive and require a significant amount of attention from our management and technical personnel, and the outcomes are unpredictable. Monitoring unauthorized use of our solutions is difficult, and we cannot be certain that the steps we have taken or will take will prevent unauthorized use of our technology. Furthermore, we cannot be certain that any pending or future patent applications will be granted, that any future patent will not be challenged, invalidated or circumvented, or that rights granted under any patent that may be issued will provide competitive advantages to us. If we are unable to protect our proprietary rights from unauthorized use, the value of our intellectual property assets may be reduced. Although we have licensed from other parties proprietary technology covered by patents, we cannot be certain that any such patents will not be challenged, invalidated or circumvented. Such licenses may also be non-exclusive, meaning our competition may also be able to access such technology.

We rely on certain “open-source” software the use of which could result in our having to distribute our proprietary software, including our source code, to third parties on unfavorable terms, which could materially affect our business.

Certain of our offerings use software that is subject to open-source licenses. Open-source code is software that is freely accessible, usable and modifiable; however, certain open-source code is governed by license agreements, the terms of which could require users of such software to make any derivative works of the software available to others on unfavorable terms or at no cost. Because we use open-source code, we may be required to take remedial action in order to protect our proprietary software. Such action could include replacing certain source code used in our software, discontinuing certain of our products or taking other actions that could be expensive and divert resources away from our development efforts. In addition, the terms relating to disclosure of derivative works in many open-source licenses are unclear. If a court interprets one or more such open-source licenses in a manner that is unfavorable to us, we could be required to make certain of our key software available at no cost. Furthermore, open-source software may have security flaws and other deficiencies that could make our solutions less reliable and damage our business.

Our business strategy depends on the ability to source adequate transmission capacity and the servers we need to operate our network; failure to have access to those resources could lead to loss of revenue and service disruptions.

Our operations are dependent in part upon transmission capacity provided by third party telecommunications network providers and access to co-location facilities to house our servers. There can be no assurance that we are adequately prepared for unexpected increases in bandwidth demands by our customers, particularly those under cyber-attack. Failure to put in place the capacity we require to operate our business effectively could result in a reduction in, or disruption of, service to our customers and ultimately a loss of those customers. The Akamai Intelligent Edge Platform relies on hundreds of thousands of servers deployed around the world. Disruptions in our supply chain could prevent us from purchasing servers at attractive prices or at all. For example, it may be difficult to purchase servers and other equipment that are manufactured in areas that face disruptions to operations due to unrest or other political activity, public health issues (for example, an outbreak of a contagious disease such as the novel coronavirus), safety issues, natural disasters or general economic conditions. Failure to have adequate server deployment could harm the quality of our services, which could lead to the loss of customers and revenue.

Our stock price has been, and may continue to be, volatile, and your investment could lose value.

The market price of our common stock has historically been volatile. Trading prices may continue to fluctuate in response to a number of events and factors, including the following:

- quarterly variations in operating results;
- announcements by our customers related to their businesses that could be viewed as impacting their usage of our solutions;
- market speculation about whether we are a takeover target or considering a strategic transaction;
- activism by any single large stockholder or combination of stockholders;
- changes in financial estimates and recommendations by securities analysts;
- failure to meet the expectations of securities analysts;
- purchases or sales of our stock by our officers and directors;
- general economic conditions and other macro-economic factors;
- repurchases of shares of our common stock;
- successful cyber-attacks affecting our network or systems;
- performance by other companies in our industry; and
- geopolitical conditions such as acts of terrorism or military conflicts.

Furthermore, our revenue, particularly that portion attributable to usage of our solutions beyond customer commitments, can be difficult to forecast, and, as a result, our quarterly operating results can fluctuate substantially. This concern is particularly acute with respect to our media and commerce customers. We have introduced new billing models over the years, including recently offering a zero overage plan that eliminates surcharges for certain traffic. In the future, our customer contracting models may change to move away from a committed revenue structure to a "pay-as-you-go" approach, which could make it easier for customers to reduce the amount of business they do with us or leave altogether. Changes in billing models and committed revenue requirements could, therefore, create challenges with our forecasting processes. Because a significant portion of our cost structure is largely fixed in the short-term, revenue shortfalls tend to have a disproportionately negative impact on our profitability. If we announce revenue or profitability results that do not meet or exceed our guidance or make changes in our guidance with respect to future operating results, our stock price may decrease significantly as a result.

Any of these events, as well as other circumstances discussed in these Risk Factors, may cause the price of our common stock to fall. In addition, the stock market in general, and the market prices of stock of publicly-traded technology companies in particular, have experienced significant volatility that often has been unrelated to the operating performance of affected companies. These broad stock market fluctuations may adversely affect the market price of our common stock, regardless of our operating performance.

If the accounting estimates we make, and the assumptions on which we rely, in preparing our financial statements prove inaccurate, our actual results may be adversely affected.

Our financial statements have been prepared in accordance with accounting principles generally accepted in the U.S. The preparation of these financial statements requires us to make estimates and judgments about, among other things, taxes, revenue recognition, stock-based compensation costs, capitalization of internal-use software development costs, investments, contingent obligations, allowance for doubtful accounts, intangible assets, and restructuring charges. These estimates and judgments affect, among other things, the reported amounts of our assets, liabilities, revenue and expenses, the amounts of charges accrued by us, and related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances and at the time they are made. If our estimates or the assumptions underlying them are not correct, actual results may differ materially from our estimates and we may need to, among other things, accrue significant additional charges that could adversely affect our results of operations, which in turn could adversely affect our stock price. In addition, new accounting pronouncements and interpretations of accounting pronouncements have occurred and may occur in the future that could adversely affect our reported financial results.

We may have exposure to greater-than-anticipated tax liabilities.

Our future income taxes could be adversely affected by earnings being lower than anticipated in jurisdictions that have lower statutory tax rates and higher than anticipated in jurisdictions that have higher statutory tax rates, or changes in tax laws, regulations, or accounting principles, as well as certain discrete items such as equity-related compensation. We have recorded certain tax reserves to address potential exposures involving our income tax and sales and use tax positions. These potential tax liabilities result from the varying application of statutes, rules, regulations and interpretations by different jurisdictions. We are currently subject to tax audits in various jurisdictions including the Commonwealth of Massachusetts. In the second quarter of 2018, we filed an appeal with the Massachusetts Appellate Tax Board contesting adverse audit findings relating to our eligibility to claim certain tax benefits and exemptions. The appeal hearing was held in late 2019. If the outcome of this appeal and other audits are adverse to us, our reserves may not be adequate to cover our total actual liability, and we would need to take a financial charge. Although we believe our estimates, our reserves and the positions we have taken in all jurisdictions are reasonable, the ultimate tax outcome may differ from the amounts recorded in our financial statements and may materially affect our financial results in the period or periods for which such determination is made.

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results or prevent fraud. As a result, our stockholders could lose confidence in our financial reporting, which could harm our business and the trading price of our common stock.

We have complied with Section 404 of the Sarbanes-Oxley Act of 2002 by assessing, strengthening and testing our system of internal controls. Even though we concluded our internal control over financial reporting and disclosure controls and procedures were effective as of the end of the period covered by this report, we need to continue to maintain our processes and systems and adapt them to changes as our business evolves and we rearrange management responsibilities and reorganize our business. This continuous process of maintaining and adapting our internal controls and complying with Section 404 is expensive and time-consuming and requires significant management attention. We cannot be certain that our internal control measures will continue to provide adequate control over our financial processes and reporting and ensure compliance with Section 404. Furthermore, as our business changes, including by expanding our operations in different markets, increasing reliance on channel partners and completing acquisitions, our internal controls may become more complex and we will be required to expend significantly more resources to ensure our internal controls remain effective. Failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm our operating results or cause us to fail to meet our reporting obligations. If we or our independent registered public accounting firm identify material weaknesses, the disclosure of that fact, even if quickly remediated, could reduce the market's confidence in our financial statements and harm our stock price.

Any failure to meet our debt obligations would damage our business.

As of the date of this report, we had total par value of \$1,150.0 million of convertible senior notes outstanding due in 2027 and we had total par value of \$1,150.0 million of convertible senior notes outstanding due in 2025. We also entered into a credit facility in May 2018 that provides for an initial \$500.0 million in revolving loans; under specified circumstances, we would be able to borrow an additional \$500.0 million thereunder. Our ability to repay any amounts we borrow under our credit facility, refinance the notes, make cash payments in connection with conversions of the notes or repurchase the notes in the event of a fundamental change (as defined in the applicable indenture governing the notes) will depend on market conditions and our future performance, which is subject to economic, financial, competitive and other factors beyond our control. We also may not use the cash we have raised through future borrowing under the credit facility or the issuance of the convertible senior notes in an optimally productive and profitable manner. If we are unable to remain profitable or if we use more cash than we generate in the future, our level of indebtedness at such time could adversely affect our operations by increasing our vulnerability to adverse changes in general economic and industry conditions and by limiting or prohibiting our ability to obtain additional financing for additional capital expenditures, acquisitions and general corporate and other purposes. In addition, if we are unable to make cash payments upon conversion of the notes, we would be required to issue significant amounts of our common stock, which would be dilutive to the stock of existing stockholders. If we do not have sufficient cash to repurchase the notes following a fundamental change, we would be in default under the terms of the notes, which could seriously harm our business. Although the terms of our credit facility include certain financial ratios that potentially limit our future indebtedness, the terms of the notes do not do so. If we incur significantly more debt, this could intensify the risks described above.

We may issue additional shares of our common stock or instruments convertible into shares of our common stock and thereby materially and adversely affect the market price of our common stock.

Our Board of Directors has the authority to issue additional shares of our common stock or other instruments convertible into, or exchangeable or exercisable for, shares of our common stock. If we issue additional shares of our common stock or instruments convertible into, or exchangeable or exercisable for, shares of our common stock, it may materially and adversely affect the market price of our common stock.

Our sales to government clients subject us to risks including early termination, audits, investigations, sanctions and penalties.

We have customer contracts with the U.S. government, as well as foreign, state and local governments and their respective agencies. Such government entities often have the right to terminate these contracts at any time, without cause. There is increased pressure for governments and their agencies, both domestically and internationally, to reduce spending. Most of our government contracts are subject to legislative approval of appropriations to fund the expenditures under these contracts. These factors combine to potentially limit the revenue we derive from government contracts in the future. Additionally, government contracts generally have requirements that are more complex than those found in commercial enterprise agreements and therefore are more costly to comply with. Such contracts are also subject to audits and investigations that could result in civil and criminal penalties and administrative sanctions, including termination of contracts, refund of a portion of fees received, forfeiture of profits, suspension of payments, fines and suspensions or debarment from future government business.

Litigation may adversely impact our business.

From time to time, we are or may become involved in various legal proceedings relating to matters incidental to the ordinary course of our business, including patent, commercial, product liability, breach of contract, employment, class action, whistleblower and other litigation and claims, and governmental and other regulatory investigations and proceedings. In addition, under our charter, we could be required to indemnify and advance expenses to our directors and officers in connection with their involvement in certain actions, suits, investigations and other proceedings. Such matters can be time-consuming, divert management's attention and resources and cause us to incur significant expenses. Furthermore, because litigation is inherently unpredictable and may not be covered by insurance, there can be no assurance that the results of any litigation matters will not have an adverse impact on our business, results of operations, financial condition or cash flows.

Global climate change and related natural resource conservation regulations could adversely impact our business.

The long-term effects of climate change on the global economy and our industry in particular remain unknown. Changes in weather where we operate may increase the costs of powering and cooling computer hardware we use to develop software and provide cloud-based services. Catastrophic natural disasters could negatively impact our office locations. In response to concerns about global climate change, governments may adopt new regulations affecting the use of fossil fuels or requiring the use of alternative fuel sources. Our deployed network of servers consumes significant energy resources, including those generated by the burning of fossil fuels. While we have invested in projects to support renewable energy development, our customers, investors and other stakeholders may require us to take more steps to demonstrate that we are taking ecologically responsible measures in operating our business. The costs and any expenses we may incur to make our network more energy-efficient and comply with any new regulations could make us less profitable in future periods. Failure to comply with applicable laws and regulations or other requirements imposed on us could lead to fines, lost revenue and damage to our reputation.

Because we currently do not intend to pay dividends, stockholders will benefit from an investment in our common stock only if it appreciates in value.

We currently intend to retain our future earnings, if any, for use in the operation of our business and do not expect to pay any cash dividends in the foreseeable future on our common stock. As a result, the success of an investment in our common stock will depend upon any future appreciation in its value. There is no guarantee that our common stock will appreciate in value or even maintain the price at which stockholders have purchased their shares.

Provisions of our charter, by-laws and Delaware law may have anti-takeover effects that could prevent a change in control even if the change in control would be beneficial to our stockholders.

Provisions of our charter, by-laws and Delaware law could make it more difficult for a third party to control or acquire us, even if doing so would be beneficial to our stockholders. These provisions include:

- a classified board structure that is being phased out over time, with approximately two-thirds of our Board of Directors up for re-election this year;
- our Board of Directors has the right to elect directors to fill a vacancy created by the expansion of the Board of Directors or the resignation, death or removal of a director;
- stockholders must provide advance notice to nominate individuals for election to the Board of Directors or to propose matters that can be acted upon at a stockholders' meeting; and
- our Board of Directors may issue, without stockholder approval, shares of undesignated preferred stock.

Further, as a Delaware corporation, we are also subject to certain Delaware anti-takeover provisions. Under Delaware law, a corporation may not engage in a business combination with any holder of 15% or more of its capital stock unless the holder has held the stock for three years or, among other things, the board of directors has approved the transaction. Our Board of Directors could rely on Delaware law to prevent or delay an acquisition of us.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our headquarters is located in Cambridge, Massachusetts where we lease approximately 653,000 square feet. We also have offices in other locations in the United States and other countries, the largest of which are in Santa Clara, California; Bangalore, India; and Krakow, Poland. All of our facilities are leased. We believe our facilities are sufficient to meet our needs for the foreseeable future and, if needed, additional space will be available at a reasonable cost.

Item 3. Legal Proceedings

We are party to litigation that we consider routine and incidental to our business. We do not currently expect the results of any of these litigation matters to have a material effect on our business, results of operations, financial condition or cash flows.

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

Our common stock, par value \$0.01 per share, trades under the symbol “AKAM” on the NASDAQ Global Select Market.

As of February 25, 2020, there were 218 holders of record of our common stock.

We have never paid or declared any cash dividends on shares of our common stock or other securities and do not anticipate paying or declaring any cash dividends in the foreseeable future. We currently intend to retain all future earnings, if any, for use in the operation of our business.

Issuer Purchases of Equity Securities

The following is a summary of our repurchases of our common stock in the fourth quarter of 2019 (in thousands, except share and per share data):

Period ⁽¹⁾	Total Number of Shares Purchased ⁽²⁾	Average Price Paid per Share ⁽³⁾	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs ⁽⁴⁾	Approximate Dollar Value of Shares that May Yet be Purchased Under Plans or Programs ⁽⁴⁾
October 1, 2019 – October 31, 2019	227,274	\$ 90.24	227,274	\$ 787,703
November 1, 2019 – November 30, 2019	232,835	86.88	232,835	767,475
December 1, 2019 – December 31, 2019	22,818	87.39	22,818	765,481
Total	482,927	\$ 88.48	482,927	\$ 765,481

(1) Information is based on settlement dates of repurchase transactions.

(2) Consists of shares of our common stock, par value \$0.01 per share.

(3) Includes commissions paid.

(4) Effective November 2018, the Board authorized a \$1.1 billion repurchase program through December 2021.

During the year ended December 31, 2019, we repurchased 4.0 million shares of our common stock for an aggregate of \$334.5 million.

Item 6. Selected Financial Data

The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and related notes, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and other financial data included elsewhere in this annual report on Form 10-K. The consolidated statements of income and balance sheet data for all periods presented is derived from the audited consolidated financial statements included elsewhere in this annual report on Form 10-K or in prior year annual reports on Form 10-K on file with the Commission.

The following table sets forth selected financial data for the last five fiscal years (in thousands, except per share data):

Year ended December 31,	2019	2018	2017	2016	2015
Revenue	\$ 2,893,617	\$ 2,714,474	\$ 2,489,035	\$ 2,347,988	\$ 2,197,448
Total costs and operating expenses	2,344,699	2,351,975	2,174,746	1,881,478	1,731,298
Income from operations	548,918	362,499	314,289	466,510	466,150
Net income	478,035	298,373	222,766	320,727	321,406
Basic net income per share	2.94	1.78	1.30	1.83	1.80
Diluted net income per share	2.90	1.76	1.29	1.82	1.78
Cash, cash equivalents and marketable securities	2,372,378	2,101,171	1,279,528	1,616,329	1,524,235
Total assets	7,006,886	5,461,770	4,648,916	4,432,190	4,181,684
Convertible senior notes – Due 2019	—	686,552	662,913	640,087	624,288
Convertible senior notes – Due 2025	912,719	874,080	—	—	—
Convertible senior notes – Due 2027	927,072	—	—	—	—
Long-term operating lease liabilities	692,181	—	—	—	—
Other long-term liabilities	123,620	185,121	166,840	156,329	110,319
Total stockholders’ equity	3,657,958	3,191,860	3,362,469	3,270,218	3,120,848

During the year ended December 31, 2019, we adopted accounting guidance that requires companies to present assets and liabilities arising from leases on the consolidated balance sheet. The guidance was applied prospectively beginning January 1, 2019. Accordingly, assets arising from leases are presented above in Total assets in 2019 only. In addition, liabilities arising from leases are presented in Operating lease liabilities in 2019 only.

See Note 2 to our consolidated financial statements included elsewhere in this annual report on Form 10-K for more details regarding new accounting pronouncements.

Prior period information as of and for the years ended December 31, 2017 and 2016 has been restated for the adoption of the new accounting standard for revenue recognition, which we adopted on January 1, 2018. Under this standard, the way revenue is recognized changed for some of our contracts with customers and primarily impacts the timing of recognizing revenue from a small number of licensed software customers. As a result of the new standard we also began capitalizing certain commission and incentive payments. The financial data as of and for the year ended December 31, 2015 has not been restated for the new accounting standard.

During the years presented in the table above, various acquisitions occurred, the results of which are presented prospectively from the date of acquisition. These acquisitions may impact the comparability of the consolidated financial data presented above. See Note 8 to our consolidated financial statements included elsewhere in this annual report on Form 10-K for more details regarding these acquisitions.

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

This Management’s Discussion and Analysis of Financial Condition and Results of Operations, or MD&A, should be read in conjunction with our consolidated financial statements and notes thereto that appear elsewhere in this annual report on Form 10-K. See “Risk Factors” elsewhere in this annual report on Form 10-K for a discussion of certain risks associated with our business. The following discussion contains forward-looking statements. The forward-looking statements do not include the potential impact of any mergers, acquisitions, divestitures or other events that may be announced after the date hereof.

Overview

We provide solutions for securing, delivering and optimizing content and business applications over the Internet. The key factors that influence our financial success are our ability to build on recurring revenue commitments for our security and performance offerings, increase media traffic on our network, effectively managing the prices we charge for our solutions, develop new products and carefully manage our capital spending and other expenses.

Revenue

For most of our solutions, our customers commit to contracts having terms of a year or longer, which allows us to have a consistent and predictable base level of revenue. In addition to a base level of revenue, we are also dependent on media customers where usage of our solutions is more variable. As a result, our revenue is impacted by the amount of media and software download traffic we serve on our network, the rate of adoption of gaming, social media and video platform offerings, the timing and variability of customer-specific one-time events and the impact of seasonal variations on our business. The ability to expand our product portfolio and to effectively manage the prices we charge for our solutions are also key factors impacting our revenue growth.

We have observed the following trends related to our revenue in recent years:

- Increased sales of our security solutions have made a significant contribution to revenue growth. We plan to continue to invest in this area with a focus on further enhancing our product portfolio and extending our go-to-market capabilities.
- We have experienced increases in the amount of traffic delivered for customers that use our solutions for video, gaming and software downloads, contributing to an increase in our revenue in 2019 as compared to 2018.
- We have increased committed recurring revenue from our solutions by increasing sales of incremental solutions to our existing customers and adding new customers; however, we have also experienced slower revenue growth in recent quarters particularly in our web performance solutions. We expect the trend of slower revenue growth to continue in 2020 as our commerce customers continue to experience financial pressure and we face more contract renewals with large media and other customers in 2020 as compared to 2019.
- The prices paid by some of our customers have declined, particularly in the context of contract renewals and large media consolidations, reflecting the impact of competition and volume discounts. Our revenue would have been higher absent these price declines.
- In recent years, revenue from our international operations has been growing at a faster pace than from our U.S. operations, particularly in terms of new customer acquisition and cross-selling of incremental solutions. Because we publicly report in U.S. dollars, if the dollar continues to strengthen, our reported revenue results will be negatively impacted.
- We have experienced variations in certain types of revenue from quarter to quarter. In particular, we typically experience higher revenue in the fourth quarter of each year for some of our solutions as a result of holiday season activity. In addition, we experience quarterly variations in revenue attributable to, among other things, the nature and timing of software and gaming releases by our customers; whether there are large live sporting or other events that increase the amount of media traffic on our network; and the frequency and timing of purchases of custom solutions.

Expenses

Our level of profitability is also impacted by our expenses, including direct costs to support our revenue such as bandwidth and co-location costs. We have observed the following trends related to our profitability in recent years:

- Our profitability improved in 2019 as compared to 2018 due to higher revenue as well as the effects of cost savings and efficiency initiatives we have undertaken. We expect to continue to undertake efforts intended to improve the efficiency of operations. If we are able to continue our efficiency efforts such that our rate of revenue growth exceeds our expense growth rate, we anticipate overall profitability improvement in 2020 as compared to 2019.

- Network bandwidth costs represent a significant portion of our cost of revenue. Historically, we have been able to mitigate increases in these costs by reducing our network bandwidth costs per unit and investing in internal-use software development to improve the performance and efficiency of our network. Our total bandwidth costs may increase in the future as a result of expected higher traffic levels and serving more traffic from higher cost regions. We will need to continue to effectively manage our bandwidth costs to maintain current levels of profitability.
- Co-location costs are also a significant portion of our cost of revenue. By improving our internal-use software and managing our hardware deployments to enable us to use servers more efficiently, we have been able to manage the growth of co-location costs. We expect to continue to scale our network in the future and will need to continue to effectively manage our co-location costs to maintain current levels of profitability.
- Payroll and related costs stabilized in 2019 as compared to prior years. We expect to continue to manage our headcount and payroll costs in the future to focus investments on certain areas of the business while maintaining efficient operations in others. We expect to continue to hire employees in support of our strategic initiatives, but do not expect overall headcount to increase significantly in 2020.
- Depreciation and amortization expense related to our network equipment decreased during 2019 as compared to 2018. We implemented software and hardware initiatives to manage our global network more efficiently; as a result, the expected average useful life of our network assets, primarily servers, increased from four years to five years, effective January 1, 2019. We expect to continue to invest in our network in 2020, which will increase our capital expenditures and resulting depreciation expense.

We report our revenue in two divisions: the Web Division and the Media and Carrier Division. Revenue by division is a customer-focused reporting view that reflects revenue from customers that are managed by the division. As the purchasing patterns and required account expertise of customers change over time, we may reassign a customer from one division to another. In 2019, we reassigned some of our customers from the Media and Carrier Division to the Web Division and revised historical results in order to reflect the most recent categorization and to provide a comparable view for all periods presented.

Results of Operations

The following sets forth, as a percentage of revenue, consolidated statements of income data for the years indicated:

	2019	2018	2017
Revenue	100.0 %	100.0 %	100.0 %
Costs and operating expenses:			
Cost of revenue (exclusive of amortization of acquired intangible assets shown below)	34.1	35.1	35.2
Research and development	9.0	9.1	8.9
Sales and marketing	18.1	19.1	19.3
General and administrative	17.8	21.1	20.5
Amortization of acquired intangible assets	1.3	1.2	1.2
Restructuring charge	0.6	1.0	2.2
Total costs and operating expenses	80.9	86.6	87.3
Income from operations	19.1	13.4	12.7
Interest income	1.2	1.0	0.7
Interest expense	(1.7)	(1.6)	(0.8)
Other (expense) income, net	—	(0.1)	—
Income before provision for income taxes	18.6	12.7	12.6
Provision for income taxes	(1.8)	(1.6)	(3.7)
Loss from equity method investment	—	—	—
Net income	16.8 %	11.1 %	8.9 %

Revenue

Revenue during the periods presented is as follows (in thousands):

	For the Years Ended December 31,				For the Years Ended December 31,			
	2019	2018	% Change	% Change at Constant Currency	2018	2017	% Change	% Change at Constant Currency
Web Division	\$ 1,566,401	\$ 1,448,644	8.1%	9.4%	\$ 1,448,644	\$ 1,307,641	10.8%	10.3%
Media and Carrier Division	1,327,216	1,265,830	4.8	6.1	1,265,830	1,181,394	7.2	6.7
Total revenue	\$ 2,893,617	\$ 2,714,474	6.6%	7.8%	\$ 2,714,474	\$ 2,489,035	9.1%	8.6%

The increase in our revenue in 2019 as compared to 2018 was primarily the result of higher media traffic volumes, including from our large Internet platform customers, and continued strong growth in sales of our Cloud Security Solutions. Cloud Security Solutions revenue for the year ended December 31, 2019 was \$848.7 million, compared to \$658.7 million for the year ended December 31, 2018, which represents a 28.8% increase. The increase in our revenue in 2018 as compared to 2017 was primarily the result of higher media traffic volumes, increased sales of our new product offerings and continued strong growth in our Cloud Security Solutions. Cloud Security Solutions revenue for the year ended December 31, 2018 was \$658.7 million, compared to \$487.6 million for the year ended December 31, 2017, which represents a 35.1% increase.

The increase in Web Division revenue for 2019 as compared to 2018 was primarily the result of increased sales of both new and existing Cloud Security Solutions to this customer base. The increase in Web Division revenue in 2018 as compared to 2017 was due to increased purchases of new solutions and upgrades to existing services by this customer base. Increased sales of our Cloud Security Solutions to Web Division customers, in particular our Kona Site Defender, Prolexic and managed security solutions, as well as our new Bot Manager offering were a principal contributor to our overall revenue growth in 2018.

The increase in Media and Carrier Division revenue for 2019 as compared to 2018, as well as 2018 as compared to 2017, was primarily the result of increased customer traffic volumes from video delivery and gaming customers and sales of Cloud Security Solutions to this customer base.

Revenue derived in the U.S. and internationally during the periods presented is as follows (in thousands):

	For the Years Ended December 31,				For the Years Ended December 31,			
	2019	2018	% Change	% Change at Constant Currency	2018	2017	% Change	% Change at Constant Currency
U.S.	\$ 1,694,211	\$ 1,683,272	0.6%	0.6%	\$ 1,683,272	\$ 1,637,198	2.8%	2.8%
International	1,199,406	1,031,202	16.3	19.6	1,031,202	851,837	21.1	19.7
Total revenue	\$ 2,893,617	\$ 2,714,474	6.6%	7.8%	\$ 2,714,474	\$ 2,489,035	9.1%	8.6%

The U.S. growth rate for 2019 was negatively impacted by a reduction in prices paid by some of our customers, partially offset by an increase in revenue from our large Internet platform customers, as these customers are based in the U.S. For the year ended December 31, 2019, approximately 41% of our revenue was derived from our operations located outside of the U.S., compared to 38% for the year ended December 31, 2018, and 34% for the year ended December 31, 2017. No single country outside of the U.S. accounted for 10% or more of revenue during any of these periods.

Internationally, during 2019 and 2018, we continued to see strong revenue growth from our operations in the Asia-Pacific region. Changes in foreign currency exchange rates negatively impacted our revenue by \$33.9 million in 2019 as compared to 2018, and positively impacted our revenue by \$11.2 million in 2018 as compared to 2017.

Cost of Revenue

Cost of revenue consisted of the following for the periods presented (in thousands):

	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Bandwidth fees	\$ 165,335	\$ 154,853	6.8 %	\$ 154,853	\$ 168,092	(7.9)%
Co-location fees	127,024	128,082	(0.8)	128,082	130,181	(1.6)
Network build-out and supporting services	101,135	88,543	14.2	88,543	75,209	17.7
Payroll and related costs	248,146	238,920	3.9	238,920	216,760	10.2
Stock-based compensation, including amortization of prior capitalized amounts	51,607	45,765	12.8	45,765	36,677	24.8
Depreciation of network equipment	125,589	150,458	(16.5)	150,458	143,825	4.6
Amortization of internal-use software	168,788	146,864	14.9	146,864	105,093	39.7
Total cost of revenue	\$ 987,624	\$ 953,485	3.6 %	\$ 953,485	\$ 875,837	8.9 %
As a percentage of revenue	34.1%	35.1%		35.1%	35.2%	

The increase in total cost of revenue for 2019 as compared to 2018 was primarily due to increases in:

- amortization of internal-use software as we continued to release internally-developed software onto our network related to new product launches and significant enhancements to our existing services;
- network build-out and supporting service costs due to investments in network expansion;
- bandwidth fees to support the increase in traffic served on our network; and
- payroll and related costs due to increased hiring to support revenue growth.

These increases were partially offset by lower depreciation expense of network equipment of \$31.5 million for the year ended December 31, 2019, due to software and hardware initiatives we implemented to manage our global network more efficiently, resulting in an increase in the expected average useful life of our network assets, primarily servers, from four to five years effective January 1, 2019.

The increase in total cost of revenue for 2018 as compared to 2017 was primarily due to increases in amortization of internal-use software as we continued to release internally-developed software onto our network related to new product launches and significant enhancements to our existing services throughout 2017 and 2018; payroll and related costs, as well as stock-based compensation, due to increased hiring in our services team in 2017 to support revenue growth; and amounts paid for network build-out and supporting services related to installation fees and investments in our network. These increases were partially offset by decreases in our bandwidth and co-location fees as we have been able to more effectively manage our network and reduce our costs.

During 2020, we plan to continue to focus our efforts on expanding our operating margins, including continuing to manage our bandwidth and co-location costs. We do anticipate amortization of internal-use software development costs to increase in 2020 as we plan to continue making investments in our network with the expectation that our customer base will continue to expand and that we will continue to deliver more traffic to existing customers.

Research and Development Expenses

Research and development expenses consisted of the following for the periods presented (in thousands):

	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Payroll and related costs	\$ 382,084	\$ 365,713	4.5%	\$ 365,713	\$ 322,604	13.4%
Stock-based compensation	49,685	44,034	12.8	44,034	38,863	13.3
Capitalized salaries and related costs	(183,282)	(174,373)	5.1	(174,373)	(148,998)	17.0
Other expenses	12,878	10,791	19.3	10,791	9,965	8.3
Total research and development	\$ 261,365	\$ 246,165	6.2%	\$ 246,165	\$ 222,434	10.7%
<i>As a percentage of revenue</i>	<i>9.0%</i>	<i>9.1%</i>		<i>9.1%</i>	<i>8.9%</i>	

The increases in research and development expenses for 2019 as compared to 2018, as well as 2018 as compared to 2017, were due to increases in payroll and related costs, including stock-based compensation, as a result of headcount growth to support investments in new product development and network scaling, and as a result of employees joining us through acquisitions. These increases were partially offset by increases in capitalized salaries and related costs due to continued investment in internal-use software deployed on our network.

Research and development costs are expensed as incurred, other than certain internal-use software development costs eligible for capitalization. Capitalized development costs consist of payroll and related costs for personnel and external consulting expenses involved in the development of internal-use software used to deliver our services and operate our network. For the years ended December 31, 2019, 2018 and 2017, we capitalized \$33.7 million, \$31.9 million and \$26.8 million, respectively, of stock-based compensation. These capitalized internal-use software development costs are amortized to cost of revenue over their estimated useful lives, which is generally two years, but can be up to seven years based on the software developed and its expected useful life.

We expect research and development costs to increase in 2020 as we maintain our focus on innovation; however, we do not expect these costs to increase as a percentage of revenue.

Sales and Marketing Expenses

Sales and marketing expenses consisted of the following for the periods presented (in thousands):

	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Payroll and related costs	\$ 382,570	\$ 388,320	(1.5)%	\$ 388,320	\$ 342,719	13.3 %
Stock-based compensation	62,149	64,372	(3.5)	64,372	60,247	6.8
Marketing programs and related costs	52,787	41,796	26.3	41,796	48,551	(13.9)
Other expenses	26,377	22,865	15.4	22,865	30,005	(23.8)
Total sales and marketing	\$ 523,883	\$ 517,353	1.3 %	\$ 517,353	\$ 481,522	7.4 %
<i>As a percentage of revenue</i>	<i>18.1%</i>	<i>19.1%</i>		<i>19.1%</i>	<i>19.3%</i>	

The increase in sales and marketing expenses for 2019 as compared to 2018 was primarily due to increased spending for marketing programs and other expenses primarily for a customer conference that took place during 2019 that did not take place in 2018, partially offset by a decrease in payroll and related costs and stock-based compensation due to reduced headcount in the marketing organization. The increase in sales and marketing expenses for 2018 as compared to 2017 was primarily due to growth in payroll and related costs from headcount increases in 2017 to support our divisions' go-to-market strategies in pursuit of growth opportunities.

During 2020 we do not expect significant increases in sales and marketing expenses as we plan to continue to carefully manage costs in an our efforts to refine and optimize our go-to-market efforts and improve operating margins.

General and Administrative Expenses

General and administrative expenses consisted of the following for the periods presented (in thousands):

	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Payroll and related costs	\$ 194,232	\$ 188,635	3.0 %	\$ 188,635	\$ 194,199	(2.9)%
Stock-based compensation	52,826	53,514	(1.3)	53,514	44,884	19.2
Depreciation and amortization	78,587	80,014	(1.8)	80,014	76,128	5.1
Facilities-related costs	90,674	86,107	5.3	86,107	80,452	7.0
Provision for doubtful accounts	1,924	2,672	(28.0)	2,672	3,209	(16.7)
Acquisition-related costs	1,920	2,868	(33.1)	2,868	23,373	(87.7)
License of patent	(8,855)	(17,146)	(48.4)	(17,146)	(16,421)	4.4
Legal and stockholder matter costs	10,000	23,091	(56.7)	23,091	—	100.0
Endowment of Akamai Foundation	—	50,000	(100.0)	50,000	—	100.0
Professional fees and other expenses	94,785	104,312	(9.1)	104,312	103,341	0.9
Total general and administrative	\$ 516,093	\$ 574,067	(10.1)%	\$ 574,067	\$ 509,165	12.7 %
<i>As a percentage of revenue</i>	<i>17.8%</i>	<i>21.1%</i>		<i>21.1%</i>	<i>20.5%</i>	

The decrease in general and administrative expenses for 2019 as compared to 2018 was primarily due to:

- a one-time endowment contribution to the Akamai Foundation in 2018;
- a reduction in legal and stockholder matter costs related to matters in 2018 that did not recur in 2019; and
- and a decrease in other expenses due to a decrease in non-income tax reserves.

These decreases were partially offset by cessation of payments to us under the terms of a litigation settlement agreement with Limelight Networks, Inc., or Limelight.

Our general and administrative expenses increased in 2018 as compared to 2017 primarily due to the one-time endowment contribution to the Akamai Foundation, legal and stockholder matter costs related to a settlement charge from our litigation with Limelight, amounts paid to professional service providers for advisory services provided in connection with a non-routine stockholder matter and higher stock-based compensation expense, primarily due to performance-based awards that experienced higher achievement in 2018 as compared to 2017.

General and administrative expenses for 2019 and 2018 are broken out by category as follows (in thousands):

	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Global functions	\$198,077	\$ 197,377	0.4 %	\$ 197,377	\$ 201,539	(2.1)%
<i>As a percentage of revenue</i>	6.8%	7.3%		7.3%	8.1%	
Infrastructure	307,500	308,915	(0.5)	308,915	297,465	3.8
<i>As a percentage of revenue</i>	10.6%	11.4%		11.4%	12.0%	
Other	10,516	67,775	(84.5)	67,775	10,161	567.0
Total general and administrative expenses	\$ 516,093	\$ 574,067	(10.1)%	\$ 574,067	\$ 509,165	12.7 %
<i>As a percentage of revenue</i>	17.8%	21.1%		21.1%	20.5%	

Global functions expense includes payroll, stock-based compensation and other employee-related costs for administrative functions, including finance, purchasing, order entry, human resources, legal, information technology and executive personnel, as well as third-party professional service fees. Infrastructure expense includes payroll, stock-based compensation and other employee-related costs for our network infrastructure functions, as well as facility rent expense, depreciation and amortization of facility and IT-related assets, software and software-related costs, business insurance and taxes. Our network infrastructure function is responsible for network planning, sourcing, architecture evaluation and platform security. Other expense includes acquisition-related costs, provision for doubtful accounts, legal settlements, non-routine stockholder matter costs, the endowment of the Akamai Foundation, transformation costs and the licensing of a patent.

During 2020, we plan to continue to focus our efforts on expanding our operating margins and, in particular, assessing opportunities to reduce third-party spending and increase automation of manual tasks.

Amortization of Acquired Intangible Assets

(in thousands)	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Amortization of acquired intangible assets	\$ 38,581	\$ 33,311	15.8%	\$ 33,311	\$ 30,904	7.8%
<i>As a percentage of revenue</i>	1.3%	1.2%		1.2%	1.2%	

The increase in amortization of acquired intangible assets in 2019 as compared to 2018, as well as 2018 as compared to 2017, was the result of amortization of assets related to our recent acquisitions.

Based on acquired intangible assets as of December 31, 2019, future amortization is expected to be approximately \$41.0 million, \$36.2 million, \$31.0 million, \$23.9 million and \$16.6 million for the years ending December 31, 2020, 2021, 2022, 2023 and 2024, respectively.

Restructuring Charge

(in thousands)	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Restructuring charge	\$ 17,153	\$ 27,594	(37.8)%	\$ 27,594	\$ 54,884	(49.7)%
As a percentage of revenue	0.6%	1.0%		1.0%	2.2%	

The restructuring charge in 2019 was primarily the result of management actions to focus on investments with the potential to accelerate revenue growth. The restructuring charge relates to certain headcount reductions and software charges for software not yet placed into service that will not be implemented due to this action.

The restructuring charge in 2018 was primarily the result of management actions intended to re-balance investments to focus on long-term growth and scale. The restructuring charge relates to certain headcount reductions and software charges for software not yet placed into service that will not be implemented due to this action.

The restructuring charge in 2017 was primarily the result of management actions intended to shift focus to more critical areas of the business and away from products that have not seen expected commercial success. The restructuring was also intended to facilitate cost efficiencies and savings. The restructuring charge relates to certain headcount and facility reductions and certain capitalized internal-use software charges for software not yet placed into service that will not be completed and implemented due to this action.

In addition to the actions described above, we have also recognized restructuring charges for redundant employees, facilities and contracts associated with completed acquisitions.

We expect to incur additional restructuring charges of \$4.0 million to \$7.0 million in 2020 as a result of the action committed to in the fourth quarter of 2019.

Non-Operating Income (Expense)

(in thousands)	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Interest income	\$ 34,355	\$ 26,940	27.5 %	\$ 26,940	\$ 17,855	50.9 %
As a percentage of revenue	1.2 %	1.0 %		1.0 %	0.7 %	
Interest expense	\$ (49,364)	\$ (43,202)	14.3 %	\$ (43,202)	\$ (18,839)	129.3 %
As a percentage of revenue	(1.7)%	(1.6)%		(1.6)%	(0.8)%	
Other (expense) income, net	\$ (1,428)	\$ (3,148)	(54.6)%	\$ (3,148)	\$ 887	(454.9)%
As a percentage of revenue	— %	(0.1)%		(0.1)%	— %	

For the periods presented, interest income primarily consists of interest earned on invested cash balances and marketable securities. The increase to interest income in 2019 as compared to 2018 was primarily the result of increased cash, cash equivalents and marketable securities balances as a result of our August 2019 issuance of \$1,150.0 million in par value of convertible senior notes due 2027. The increase to interest income in 2018 as compared to 2017 was primarily the result of increased cash, cash equivalents and marketable securities balances as a result of our May 2018 issuance of \$1,150.0 million in par value of convertible senior notes due 2025.

Interest expense is related to our debt transactions, which are described in Note 11 to the consolidated financial statements included elsewhere in this annual report on Form 10-K. The increase to interest expense for 2019 as compared to 2018 was primarily due to the August 2019 issuance of \$1,150.0 million in par value of convertible senior notes due 2027, which bear regular interest of 0.375%, but have an effective interest rate of 3.1% due to the conversion feature. The increase to interest expense for 2018 as compared to 2017 was primarily due to the May 2018 issuance of \$1,150.0 million in par value of convertible senior notes due 2025, which bear regular interest of 0.125%, but have an effective interest rate of 4.26% due to the conversion feature.

Other (expense) income, net for the years ended December 31, 2019, 2018 and 2017 primarily represents net foreign exchange gains and losses mainly due to foreign currency exchange rate fluctuations on intercompany and other non-functional currency transactions. Other (expense) income, net may fluctuate in the future based on changes in foreign currency exchange rates or other events. Other (expense) income, net also includes gains and losses from certain equity investments.

Provision for Income Taxes

(in thousands)	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Provision for income taxes	\$ 53,350	\$ 44,716	19.3%	\$ 44,716	\$ 91,426	(51.1)%
As a percentage of revenue	1.8%	1.6%		1.6%	3.7%	
Effective income tax rate	10.0%	13.0%		13.0%	29.1%	

The increase in the provision for income taxes for 2019 as compared to 2018 was mainly due to an increase in profit before taxes and an increase in the valuation allowance recorded against deferred tax assets related to state credits. These amounts were partially offset by the composition of income from foreign jurisdictions that is taxed at lower rates and the release of certain tax reserves related to the expiration of local statutes of limitations.

The decrease in the provision for income taxes for 2018 as compared to 2017 was mainly due to the reduction in the U.S. federal statutory tax rate from 35.0% to 21.0% as part of the U.S. Tax Cuts and Jobs Act, or TCJA, that was enacted in December 2017, an increase in the excess tax benefit related to stock-based compensation and the net impact of the TCJA recorded in 2017. These amounts were partially offset by an intercompany sale of intellectual property and an increase in non-deductible executive compensation.

For the year ended December 31, 2019, our effective income tax rate was lower than the federal statutory tax rate due to the release of certain tax reserves related to the expiration of local statutes of limitations, foreign income taxed at lower rates, the excess tax benefit related to stock-based compensation and the benefit of the U.S. federal, state and foreign research and development credits. These amounts were partially offset by the valuation allowance recorded against deferred tax assets related to state tax credits, non-deductible executive compensation, an intercompany sale of intellectual property and state income taxes.

For the year ended December 31, 2018, our effective income tax rate was lower than the federal statutory tax rate due to foreign income taxed at lower rates, the excess tax benefit related to stock-based compensation, a decrease in the provisional amount of the one-time transition tax that was recorded in 2017, the release of certain tax reserves related to the expiration of local statutes of limitations and the benefit of U.S. federal, state and foreign research and development credits. These amounts were partially offset by an intercompany sale of intellectual property and state income taxes.

For the year ended December 31, 2017, our effective income tax rate was lower than the federal statutory tax rate due to foreign income taxed at lower rates, the re-measurement of deferred taxes at lower tax rates expected to be in place upon realization due to the TCJA, which was enacted in December 2017, the impact of the release of the acquisition-related reserve due to the expiration of the local statute of limitations and the benefit of U.S. federal, state and foreign research and development credits. These amounts were partially offset by a provisional charge for the one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings taken as part of the TCJA, the effects of stock-based compensation in accordance with authoritative guidance for share-based payments and state income taxes.

Our effective income tax rate may fluctuate between fiscal years and from quarter to quarter due to items arising from discrete events, such as tax benefits from the disposition of employee equity awards, tax law changes and settlements of tax audits and assessments. Our effective income tax rate is also impacted by, and may fluctuate in any given period because of, the composition of income in foreign jurisdictions where tax rates differ depending on the local statutory rates.

Refer to Note 19 to the consolidated financial statements included elsewhere in this annual report on Form 10-K for additional information regarding unrecognized tax benefits that, if recognized, would impact the effective income tax rate in the next 12 months and the potential impact that current litigation related to an adverse audit finding could have on our results of operations.

Loss from Equity Method Investment

(in thousands)	For the Years Ended December 31,			For the Years Ended December 31,		
	2019	2018	% Change	2018	2017	% Change
Loss from equity method investment	\$ 1,096	\$ —	100.0%	\$ —	\$ —	—%
As a percentage of revenue	—%	—%		—%	—%	

During 2019, we started recognizing our share of earnings from our previously announced investment with Mitsubishi UFJ Financial Group, or MUFG. Our investment with MUFG established a joint venture, GO-NET, to offer a new blockchain-based online payment network. We recorded a loss of \$1.1 million dollars which reflects our share of the losses incurred by GO-NET. We expect to record additional losses in 2020 and beyond as GO-NET continues executing on the early stages of its business plan.

Non-GAAP Financial Measures

In addition to providing financial measurements based on generally accepted accounting principles in the United States of America, or GAAP, we provide additional financial metrics that are not prepared in accordance with GAAP, or non-GAAP financial measures. Management uses non-GAAP financial measures, in addition to GAAP financial measures, to understand and compare operating results across accounting periods, for financial and operational decision making, for planning and forecasting purposes, to measure executive compensation and to evaluate our financial performance. These non-GAAP financial measures are non-GAAP income from operations, non-GAAP operating margin, non-GAAP net income, non-GAAP net income per share, Adjusted EBITDA, Adjusted EBITDA margin, capital expenditures and impact of foreign currency exchange rates, as discussed below.

Management believes that these non-GAAP financial measures reflect our ongoing business in a manner that allows for meaningful comparisons and analysis of trends in the business, as they facilitate comparing financial results across accounting periods and to those of peer companies. Management also believes that these non-GAAP financial measures enable investors to evaluate our operating results and future prospects in the same manner as management. These non-GAAP financial measures may exclude expenses and gains that may be unusual in nature, infrequent or not reflective of our ongoing operating results.

The non-GAAP financial measures do not replace the presentation of our GAAP financial measures and should only be used as a supplement to, not as a substitute for, our financial results presented in accordance with GAAP.

The non-GAAP adjustments, and our basis for excluding them from non-GAAP financial measures, are outlined below:

- **Amortization of acquired intangible assets** – We have incurred amortization of intangible assets, included in our GAAP financial statements, related to various acquisitions we have made. The amount of an acquisition's purchase price allocated to intangible assets and term of its related amortization can vary significantly and are unique to each acquisition; therefore, we exclude amortization of acquired intangible assets from our non-GAAP financial measures to provide investors with a consistent basis for comparing pre- and post-acquisition operating results.
- **Stock-based compensation and amortization of capitalized stock-based compensation** – Although stock-based compensation is an important aspect of the compensation paid to our employees, the grant date fair value varies based on the stock price at the time of grant, varying valuation methodologies, subjective assumptions and the variety of award types. This makes the comparison of our current financial results to previous and future periods difficult to interpret; therefore, we believe it is useful to exclude stock-based compensation and amortization of capitalized stock-based compensation from our non-GAAP financial measures in order to highlight the performance of our core business and to be consistent with the way many investors evaluate our performance and compare our operating results to peer companies.
- **Acquisition-related costs** – Acquisition-related costs include transaction fees, advisory fees, due diligence costs and other direct costs associated with strategic activities. In addition, subsequent adjustments to our initial estimated amounts of contingent consideration and indemnification associated with specific acquisitions are included within acquisition-related costs. These amounts are impacted by the timing and size of the acquisitions. We exclude acquisition-related costs from our non-GAAP financial measures to provide a useful comparison of our operating results to prior periods and to our peer companies because such amounts vary significantly based on the magnitude of our acquisition transactions and do not reflect our core operations.

- **Restructuring charges** – We have incurred restructuring charges that are included in our GAAP financial statements, primarily related to workforce reductions and estimated costs of exiting facility lease commitments. We exclude these items from our non-GAAP financial measures when evaluating our continuing business performance as such items vary significantly based on the magnitude of the restructuring action and do not reflect expected future operating expenses. In addition, these charges do not necessarily provide meaningful insight into the fundamentals of current or past operations of our business.
- **Amortization of debt discount and issuance costs and amortization of capitalized interest expense** – In August 2019, we issued \$1,150 million of convertible senior notes due 2027 with a coupon interest rate of 0.375%. In May 2018, we issued \$1,150 million of convertible senior notes due 2025 with a coupon interest rate of 0.125%. In February 2014, we issued \$690 million of convertible senior notes due 2019 with a coupon interest rate of 0%. The imputed interest rates of these convertible senior notes were 3.10%, 4.26% and 3.20%, respectively. This is a result of the debt discounts recorded for the conversion features that are required to be separately accounted for as equity under GAAP, thereby reducing the carrying values of the convertible debt instruments. The debt discounts are amortized as interest expense together with the issuance costs of the debt. The interest expense excluded from our non-GAAP results is comprised of these non-cash components and is excluded from management's assessment of our operating performance because management believes the non-cash expense is not representative of ongoing operating performance.
- **Gains and losses on investments** – We have recorded gains and losses from the disposition, changes to fair value and impairment of certain investments. We believe excluding these amounts from our non-GAAP financial measures is useful to investors as the types of events giving rise to them are not representative of our core business operations and ongoing operating performance.
- **Legal and stockholder matter costs** – We have incurred losses related to the settlement of legal matters and costs from professional service providers related to a non-routine stockholder matter. We believe excluding these amounts from our non-GAAP financial measures is useful to investors as the types of events giving rise to them are not representative of our core business operations.
- **Endowment of Akamai Foundation** – During the second quarter of 2018, we incurred a charge to endow the Akamai Foundation. We believe excluding this amount from non-GAAP financial measures is useful to investors as this one-time event is not representative of our core business operations.
- **Transformation costs** – We have incurred professional services fees associated with internal transformation programs designed to improve operating margins and that are part of a planned program intended to significantly change the manner in which business is conducted. We believe excluding these amounts from our non-GAAP financial measures is useful to investors as the types of events and activities giving rise to them occur infrequently and are not representative of our core business operations and ongoing operating performance.
- **Income and losses from equity method investment** – We record income or losses on our share of earnings and losses of our equity method investment. We exclude such income and losses because we lack control over the operations of the investment and the related income and losses are not representative of our core business operations.
- **Income tax effect of non-GAAP adjustments and certain discrete tax items** – The non-GAAP adjustments described above are reported on a pre-tax basis. The income tax effect of non-GAAP adjustments is the difference between GAAP and non-GAAP income tax expense. Non-GAAP income tax expense is computed on non-GAAP pre-tax income (GAAP pre-tax income adjusted for non-GAAP adjustments) and excludes certain discrete tax items (such as recording or releasing of valuation allowances), if any. We believe that applying the non-GAAP adjustments and their related income tax effect allows us to highlight income attributable to our core operations.

The following table reconciles GAAP income from operations to non-GAAP income from operations and non-GAAP operating margin for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Income from operations	\$ 548,918	\$ 362,499	314,289
Amortization of acquired intangible assets	38,581	33,311	30,904
Stock-based compensation	187,140	183,813	164,308
Amortization of capitalized stock-based compensation and capitalized interest expense	34,438	28,603	19,953
Restructuring charge	17,153	27,594	54,884
Acquisition-related costs	1,920	2,868	23,374
Legal and stockholder matter costs	10,000	23,091	—
Endowment of Akamai Foundation	—	50,000	—
Transformation costs	5,527	7,730	—
Non-GAAP income from operations	<u>\$ 843,677</u>	<u>\$ 719,509</u>	<u>\$ 607,712</u>
GAAP operating margin	19%	13%	13%
Non-GAAP operating margin	29%	27%	24%

The following table reconciles GAAP net income to non-GAAP net income for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Amortization of acquired intangible assets	38,581	33,311	30,904
Stock-based compensation	187,140	183,813	164,308
Amortization of capitalized stock-based compensation and capitalized interest expense	34,438	28,603	19,953
Restructuring charge	17,153	27,594	54,884
Acquisition-related costs	1,920	2,868	23,374
Legal and stockholder matter costs	10,000	23,091	—
Endowment of Akamai Foundation	—	50,000	—
Transformation costs	5,527	7,730	—
Amortization of debt discount and issuance costs	45,857	41,958	18,839
Loss (gain) on investments	60	1,481	(450)
Loss from equity method investment	1,096	—	—
Income tax effect of above non-GAAP adjustments and certain discrete tax items	(80,488)	(86,391)	(82,817)
Non-GAAP net income	<u>\$ 739,319</u>	<u>\$ 612,431</u>	<u>\$ 451,761</u>

The following table reconciles GAAP net income per diluted share to non-GAAP net income per diluted share for the years ended December 31, 2019, 2018 and 2017 (shares in thousands):

	2019	2018	2017
GAAP net income per diluted share	\$ 2.90	\$ 1.76	\$ 1.29
Amortization of acquired intangible assets	0.23	0.20	0.18
Stock-based compensation	1.14	1.09	0.95
Amortization of capitalized stock-based compensation and capitalized interest expense	0.21	0.17	0.12
Restructuring charge	0.10	0.16	0.32
Acquisition-related costs	0.01	0.02	0.14
Legal and stockholder matter costs	0.06	0.14	—
Endowment of Akamai Foundation	—	0.30	—
Transformation costs	0.03	0.05	—
Amortization of debt discount and issuance costs	0.28	0.25	0.11
Loss (gain) on investments	—	0.01	—
Loss from equity method investment	0.01	—	—
Income tax effect of above non-GAAP adjustments and certain discrete tax items	(0.49)	(0.51)	(0.48)
Non-GAAP net income per diluted share ⁽¹⁾	<u>\$ 4.49</u>	<u>\$ 3.62</u>	<u>\$ 2.62</u>
Shares used in per share calculations	164,573	169,188	172,711

(1) May not foot due to rounding

Non-GAAP net income per diluted share is calculated as non-GAAP net income divided by diluted weighted average common shares outstanding. GAAP diluted weighted average common shares outstanding are adjusted in non-GAAP per share calculations for the shares that would be delivered to us pursuant to the note hedge transactions entered into in connection with the issuance of our convertible senior notes. Under GAAP, shares delivered under hedge transactions are not considered offsetting shares in the fully-diluted share calculation until they are delivered. However, we would receive a benefit from the note hedge transactions and would not allow the dilution to occur, so management believes that adjusting for this benefit provides a meaningful view of net income per share. Unless and until our weighted average stock price is greater than \$95.10, the initial conversion price of the convertible senior notes due 2025, or \$116.18, the initial conversion price of the convertible senior notes due 2027, there will be no difference between our GAAP and non-GAAP diluted weighted average common shares outstanding.

We consider Adjusted EBITDA to be another important indicator of the operational strength and performance of our business and a good measure of our historical operating trends. Adjusted EBITDA eliminates items that we do not consider to be part of our core operations. We define Adjusted EBITDA as GAAP net income excluding the following items: interest income; income taxes; depreciation and amortization of tangible and intangible assets; stock-based compensation; amortization of capitalized stock-based compensation; acquisition-related costs; restructuring charges; gains and losses on legal settlements; costs from professional service providers related to a non-routine stockholder matter; costs incurred related to the endowment of the Akamai Foundation; transformation costs; foreign exchange gains and losses; interest expense; amortization of capitalized interest expense; certain gains and losses on investments; gains and losses from equity method investments; and other non-recurring or unusual items that may arise from time to time. Adjusted EBITDA margin represents Adjusted EBITDA stated as a percentage of revenue.

The following table reconciles GAAP net income to Adjusted EBITDA and Adjusted EBITDA margin for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Amortization of acquired intangible assets	38,581	33,311	30,904
Stock-based compensation	187,140	183,813	164,308
Amortization of capitalized stock-based compensation and capitalized interest expense	34,438	28,603	19,953
Restructuring charge	17,153	27,594	54,884
Acquisition-related costs	1,920	2,868	23,374
Legal and stockholder matter costs	10,000	23,091	—
Interest income	(34,355)	(26,940)	(17,855)
Endowment of Akamai Foundation	—	50,000	—
Transformation costs	5,527	7,730	—
Amortization of debt discount and issuance costs	49,364	43,202	18,839
Provision for income taxes	53,350	44,716	91,426
Depreciation and amortization	367,655	372,606	321,456
Loss (gain) on investments	60	1,481	(450)
Loss from equity method investment	1,096	—	—
Other expense (income), net	1,368	1,667	(437)
Adjusted EBITDA	\$ 1,211,332	\$ 1,092,115	\$ 929,168
Adjusted EBITDA margin	42%	40%	37%

Impact of Foreign Currency Exchange Rates

Revenue and earnings from our international operations have historically been an important contributor to our financial results. Consequently, our financial results have been impacted, and management expects they will continue to be impacted, by fluctuations in foreign currency exchange rates. For example, when the local currencies of our foreign subsidiaries weaken, generally our consolidated results stated in U.S. dollars are negatively impacted.

Because exchange rates are a meaningful factor in understanding period-to-period comparisons, management believes the presentation of the impact of foreign currency exchange rates on revenue and earnings enhances the understanding of our financial results and evaluation of performance in comparison to prior periods. The dollar impact of changes in foreign currency exchange rates presented is calculated by translating current period results using monthly average foreign currency exchange rates from the comparative period and comparing them to the reported amount. The percentage change at constant currency presented is calculated by comparing the prior period amounts as reported and the current period amounts translated using the same monthly average foreign currency exchange rates from the comparative period.

Liquidity and Capital Resources

To date, we have financed our operations primarily through public and private sales of debt and equity securities and cash generated by operations. As of December 31, 2019, our cash, cash equivalents and marketable securities, which primarily consisted of corporate bonds and U.S. government agency obligations, totaled \$2.4 billion. Factoring in our outstanding convertible senior notes of \$2.3 billion, our net cash at December 31, 2019 was \$72.4 million. We place our cash investments in instruments that meet high-quality credit standards, as specified in our investment policy. Our investment policy also limits the amount of our credit exposure to any one issue or issuer and seeks to manage these assets to achieve our goals of preserving principal and maintaining adequate liquidity at all times.

Changes in cash, cash equivalents and marketable securities are dependent upon changes in, among other things, working capital items such as accounts receivable, deferred revenue, accounts payable and various accrued expenses, as well as changes in our capital and financial structure due to common stock repurchases, debt repurchases and issuances, purchases and sales of marketable securities and similar events. We believe our strong balance sheet and cash position are important competitive

differentiators that provide the financial flexibility necessary to make investments at opportune times. We expect to continue to evaluate strategic investments to strengthen our business.

As of December 31, 2019, we had cash and cash equivalents of \$255.4 million held in accounts outside the U.S. The TCJA establishes a territorial tax system in the U.S., which provides companies with the potential ability to repatriate earnings with minimal U.S. federal income tax impact beginning in 2018. As a result, our liquidity is not materially impacted by the amount of cash and cash equivalents held in accounts outside the U.S.

Cash Provided by Operating Activities

(in thousands)	For the Years Ended December 31,		
	2019	2018	2017
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Non-cash reconciling items included in net income	683,132	679,648	590,249
Changes in operating assets and liabilities	(102,863)	30,306	(12,032)
Net cash flows provided by operating activities	\$ 1,058,304	\$ 1,008,327	\$ 800,983

The increase in cash provided by operating activities for 2019 as compared to 2018 was primarily due to increased profitability in 2019, partially offset by the timing of cash collections from customers, an increase of \$28.8 million in cash paid for income taxes and timing of collections and payments of other working capital items.

The increase in cash provided by operating activities for 2018 as compared to 2017 was primarily due to increased profitability in 2018, lower cash paid for income taxes due to a lower U.S. federal statutory tax rate due to the application of the TCJA during 2018 and the timing of collections and payments of other working capital items. The increase in cash provided by operating activities for 2018 as compared to 2017 was partially offset by a one-time contribution to the Akamai Foundation of \$50.0 million, as well as higher annual bonus payouts in the first quarter of 2018 as compared to 2017 due to increased headcount from hiring in 2017.

Cash Used in Investing Activities

(in thousands)	For the Years Ended December 31,		
	2019	2018	2017
Cash paid for acquired businesses, net of cash acquired	\$ (165,329)	\$ (79)	\$ (369,073)
Purchases of property and equipment and capitalization of internal-use software development costs	(562,077)	(405,741)	(414,778)
Net marketable securities activity	(904,919)	(98,647)	326,272
Other investing activities	(35,609)	(2,066)	(1,586)
Net cash used in investing activities	\$ (1,667,934)	\$ (506,533)	\$ (459,165)

The increase in cash used in investing activities in 2019 as compared to 2018 was primarily driven by an increase in purchases of marketable securities with the proceeds from our August 2019 issuance of convertible senior notes, cash paid for acquired companies in 2019, increased capital expenditures and cash invested in an equity method investment.

The increase in cash used in investing activities in 2018 as compared to 2017 was driven by marketable securities activities. In 2017, we did not reinvest all proceeds from sales and maturities of our marketable securities which created a cash inflow in that year. The increase in cash used in investing activities in 2018 as compared to 2017 was partially offset by the cash paid in 2017 for the acquisitions of Nominum, Inc. and Soasta, Inc.

Cash (Used in) Provided by Financing Activities

<i>(in thousands)</i>	For the Years Ended December 31,		
	2019	2018	2017
Activity related to convertible senior notes	\$ 318,554	\$ 990,390	\$ —
Activity related to stock-based compensation	(18,154)	(1,697)	(2,715)
Repurchases of common stock	(334,519)	(750,000)	(361,194)
Other financing activities	(1,558)	(5,085)	(1,096)
Net cash (used in) provided by financing activities	\$ (35,677)	\$ 233,608	\$ (365,005)

The change in net cash used in or provided by financing activities in 2019 as compared to 2018 was due to our repayment of \$690 million of aggregate principal of convertible notes in 2019, partially offset by a decrease in shares repurchased under our repurchase programs.

The change in net cash used in or provided by financing activities during 2018 as compared to 2017 was the result of our issuance of convertible senior notes issued in May 2018 and related note hedge and warrant transactions. The increase was partially offset by an increase in shares repurchased under our repurchase programs.

In February 2016, the Board of Directors authorized a \$1.0 billion share repurchase program that was effective from February 2016 through December 2018. In March 2018, the Board of Directors increased the share repurchase authorization by \$416.7 million, such that the amount that was authorized and available for repurchase in 2018 was \$750.0 million. Subsequently, effective November 2018, the Board of Directors authorized an additional \$1.1 billion repurchase program through December 2021. Our goal for the share repurchase programs is to offset the dilution created by our employee equity compensation programs and provide the flexibility to return capital to shareholders as business and market conditions warrant.

During 2019, 2018 and 2017, we repurchased 4.0 million, 10.2 million and 6.9 million shares of our common stock, respectively, at an average price per share of \$82.90, \$73.54 and \$52.59, respectively. These repurchases have contributed to a decrease to shares outstanding over the past three years.

Convertible Senior Notes

In August 2019, we issued \$1,150.0 million in par value of convertible senior notes due 2027 and entered into related convertible note hedge and warrant transactions. We intend to use the net proceeds of the offering for share repurchases, working capital and general corporate purposes, including potential acquisitions and other strategic transactions.

In May 2018, we issued \$1,150.0 million in par value of convertible senior notes due 2025 and entered into related convertible note hedge and warrant transactions. We used a portion of the net proceeds to repay at maturity all of our \$690.0 million outstanding aggregate principle amount of convertible senior notes due in 2019. In addition, we have used and expect to continue to use the remaining net proceeds of the offering for share repurchases, working capital and general corporate purposes, including potential acquisitions and other strategic transactions.

In February 2014, we issued \$690.0 million in par value of convertible senior notes due 2019 and entered into related convertible note hedge and warrant transactions. The notes were classified as a current liability on our consolidated balance sheet as of December 31, 2018. We repaid the full \$690.0 million in principal amount of the notes in cash in February 2019, as the notes matured and no conversions occurred.

The terms of the notes and the hedge and warrant transactions are discussed more fully in Note 11 to the consolidated financial statements included elsewhere in this annual report on Form 10-K.

Revolving Credit Facility

In May 2018, we entered into a \$500.0 million, five-year revolving credit agreement, or the Credit Agreement. Borrowings under the facility may be used to finance working capital needs and for general corporate purposes. The facility provides for an initial \$500.0 million in revolving loans. Under specified circumstances, the facility can be increased to up to \$1.0 billion in aggregate principal amount.

Borrowings under the Credit Agreement bear interest, at our option, at a base rate plus a spread of 0.00% to 0.25% or an adjusted LIBOR rate plus a spread of 0.875% to 1.25%, in each case with such spread being determined based on our consolidated leverage ratio specified in the Credit Agreement. Regardless of what amounts, if any, are outstanding under the Credit Agreement, we are also obligated to pay an ongoing commitment fee on undrawn amounts at a rate of 0.075% to 0.15%, with such rate being based on our consolidated leverage ratio specified in the Credit Agreement.

The Credit Agreement contains customary representations and warranties, affirmative and negative covenants and events of default. Principal covenants include a maximum consolidated leverage ratio and a minimum consolidated interest coverage ratio. There were no outstanding borrowings under the Credit Agreement as of December 31, 2019.

Liquidity Outlook

Based on our present business plan, we expect our current cash, cash equivalents and marketable securities balances and our forecasted cash flows from operations to be sufficient to meet our foreseeable cash needs for at least the next 12 months. Our foreseeable cash needs, in addition to our recurring operating costs, include our expected capital expenditures, investments in information technology and facility expansion, opportunistic business acquisitions, anticipated share repurchases, lease and purchase commitments and settlements of other long-term liabilities.

Contractual Obligations, Contingent Liabilities and Commercial Commitments

The following table presents our contractual obligations and commercial commitments, as of December 31, 2019, for the next five years and thereafter (in thousands):

	Payments Due by Period				
	Total	Less than 12 Months	12 to 36 Months	36 to 60 Months	More than 60 Months
Operating lease obligations: ⁽¹⁾					
Real estate arrangements	\$ 907,441	\$ 77,961	\$ 154,960	\$ 141,971	\$ 532,549
Co-location arrangements	116,346	63,514	27,153	10,984	14,695
Bandwidth agreements	113,243	83,124	28,598	1,431	90
Open vendor purchase orders	225,813	190,042	31,525	3,882	364
Convertible senior notes	2,300,000	—	—	—	2,300,000
Total contractual obligations	\$ 3,662,843	\$ 414,641	\$ 242,236	\$ 158,268	\$ 2,847,698

(1) Excludes \$13.7 million of obligations for operating leases that have not yet commenced. See Note 12 to our consolidated financial statements included elsewhere in this annual report on Form 10-K for additional information.

In accordance with the authoritative guidance for accounting for uncertainty in income taxes, as of December 31, 2019, we had unrecognized tax benefits of \$32.6 million, including \$7.8 million of accrued interest and penalties. We believe that it is reasonably possible that \$2.8 million of our unrecognized tax benefits will be recognized by the end of 2020. The settlement period for the remaining amount of the unrecognized tax benefits is unknown.

Letters of Credit

As of December 31, 2019, we had outstanding \$7.4 million in irrevocable letters of credit issued by us in favor of third party beneficiaries, primarily related to facility leases. These irrevocable letters of credit, which are not included in the table of contractual obligations above, are unsecured and are expected to remain in effect, in some cases, until 2026.

Off-Balance Sheet Arrangements

We have entered into indemnification agreements with third parties, including vendors, customers, landlords, our officers and directors, shareholders of acquired companies, joint venture partners and third parties to which we license technology. Generally, these indemnification agreements require us to reimburse losses suffered by a third party due to various events, such as lawsuits arising from patent or copyright infringement or our negligence. These indemnification obligations are considered off-balance sheet arrangements in accordance with the authoritative guidance for guarantor's accounting and disclosure requirements for guarantees, including indirect guarantees of indebtedness of others. See Note 13 to our consolidated financial statements included elsewhere in this annual report on Form 10-K for further discussion of these indemnification agreements. The fair value of guarantees issued or modified during 2019 and 2018 was determined to be immaterial.

Legal Matters

We are party to litigation that we consider routine and incidental to our business. We do not currently expect the results of any of these litigation matters to have a material effect on our business, results of operations, financial condition or cash flows.

Significant Accounting Policies and Estimates

See Note 2 to the consolidated financial statements included elsewhere in this annual report on Form 10-K for information regarding recent and newly adopted accounting pronouncements.

Application of Critical Accounting Policies and Estimates

Overview

Our MD&A is based upon our consolidated financial statements, which have been prepared in accordance with GAAP. These principles require us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenue and expenses, cash flow and related disclosure of contingent assets and liabilities. Our estimates include those related to revenue recognition, accounts receivable and related reserves, valuation and impairment of marketable securities, capitalized internal-use software development costs, goodwill and acquired intangible assets, income tax reserves, impairment and useful lives of long-lived assets and stock-based compensation. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances at the time such estimates are made. Actual results may differ from these estimates. For a complete description of our significant accounting policies, see Note 2 to our consolidated financial statements included elsewhere in this annual report on Form 10-K.

Definitions

We define our critical accounting policies as those policies that require us to make subjective estimates and judgments about matters that are uncertain and are likely to have a material impact on our consolidated financial statements. Our estimates are based upon assumptions and judgments about matters that are highly uncertain at the time an accounting estimate is made and applied and require us to assess a range of potential outcomes.

Review of Critical Accounting Policies and Estimates

Revenue Recognition

Our contracts with customers sometimes include promises to transfer multiple services to a customer. Determining whether services are distinct performance obligations often requires the exercise of judgment by management. Advanced features that enhance a main product or service and are highly interrelated are generally not considered distinct; rather, they are combined with the service they relate to into one performance obligation. Different determinations related to combining services into performance obligations could result in differences in the timing and amount of revenue recognized in a period.

Determination of the standalone selling price, or SSP, also requires the exercise of judgment by management. SSP is based on observable inputs such as the price we charge for the service when sold separately, or the discounted list price per management's approved price list. In cases where services are not sold separately or price list rates are not available, a cost-plus-margin approach or adjusted market approach is used to determine SSP. Changes to SSP could result in differences in the allocation of transaction price among performance obligations, which could result in differences in the timing and amount of revenue recognized in a period.

From time to time, we enter into contracts to sell services or license technology to unrelated enterprises at or about the same time that we enter into contracts to purchase products or services from the same enterprises. Consideration payable to a customer is reviewed as part of the transaction price. If the payment to the customer does not represent payment for a distinct service, revenue is recognized only up to the net amount of consideration after customer payment obligations are considered. Different determinations on whether a payment represents a distinct service could result in differences in the amount of revenue recognized.

We may also resell the licenses or services of third parties. If we are acting as an agent in an arrangement with a customer to provide third party services, the transaction price reflects only the net amount to which we will be entitled, after accounting for payments made to the third party responsible for satisfying the performance obligation. Different determinations on whether we are acting as an agent or a principal could change the amount of revenue recognized.

Accounts Receivable and Related Reserves

Trade accounts receivable are recorded at the invoiced amounts and do not bear interest. In addition to trade accounts receivable, our accounts receivable balance includes unbilled accounts that represent revenue recorded for customers that is typically billed within one month. We record reserves against our accounts receivable balance. These reserves primarily consist of allowances for doubtful accounts. Increases and decreases in the allowance for doubtful accounts are included as a component of general and administrative expense in the consolidated statements of income.

Estimates are used in determining our reserves and are based upon our review of outstanding balances on a customer-specific, account-by-account basis. The allowance for doubtful accounts is based upon a review of customer receivables from prior sales with collection issues where we no longer believe that the customer has the ability to pay for prior services provided. We perform ongoing credit evaluations of our customers. If such an evaluation indicates that payment is no longer reasonably assured for services provided, any future services provided to that customer will result in creation of a cash basis reserve until we receive consistent payments.

Valuation and Impairment of Marketable Securities

We measure the fair value of our financial assets and liabilities at the end of each reporting period. Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. We have certain financial assets and liabilities recorded at fair value (principally cash equivalents and short- and long-term marketable securities) that have been classified as Level 1, 2 or 3 within the fair value hierarchy. Fair values determined by Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities that we can access at the reporting date. Fair values determined by Level 2 inputs utilize data points other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Fair values determined by Level 3 inputs are based on unobservable data points for the asset or liability.

Marketable securities are considered to be impaired when a decline in fair value below cost basis is determined to be other-than-temporary. We periodically evaluate whether a decline in fair value below cost basis is other-than-temporary by considering available evidence regarding these investments including, among other factors, the duration of the period that, and extent to which, the fair value is less than cost basis; the financial health of, and business outlook for, the issuer, including industry and sector performance and operational and financing cash flow factors; overall market conditions and trends; and our intent and ability to retain our investment in the security for a period of time sufficient to allow for an anticipated recovery in market value. Once a decline in fair value is determined to be other-than-temporary, a write-down is recorded and a new cost basis in the security is established. Assessing the above factors involves inherent uncertainty. Write-downs, if recorded, could be materially different from the actual market performance of marketable securities in our portfolio if, among other things, relevant information related to our investments and marketable securities was not publicly available or other factors not considered by us would have been relevant to the determination of impairment.

Impairment and Useful Lives of Long-Lived Assets

We review our long-lived assets, such as property and equipment and acquired intangible assets, for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. Events that would trigger an impairment review include a change in the use of the asset or forecasted negative cash flows related to the asset. When such events occur, we compare the carrying amount of the asset to the undiscounted expected future cash flows related to the asset. If this comparison indicates that impairment is present, the amount of the impairment is calculated as the difference between the carrying amount and the fair value of the asset. If a readily determinable market price does not exist, fair value is

estimated using discounted expected cash flows attributable to the asset. The estimates required to apply this accounting policy include forecasted usage of the long-lived assets, the useful lives of these assets and expected future cash flows. Changes in these estimates could materially impact results from operations.

Goodwill and Acquired Intangible Assets

We test goodwill for impairment on an annual basis, as of December 31, or more frequently if events or changes in circumstances indicate that the asset might be impaired. We have concluded that we have one reporting unit and that our chief operating decision maker is our chief executive officer and the executive management team. We have assigned the entire balance of goodwill to our one reporting unit. The fair value of the reporting unit was based on our market capitalization as of each of December 31, 2019 and 2018, and it was substantially in excess of the carrying value of the reporting unit at each date.

Acquired intangible assets consist of completed technologies, customer relationships, trademarks and trade names, non-compete agreements and acquired license rights. We engaged third party valuation specialists to assist us with the initial measurement of the fair value of acquired intangible assets. Acquired intangible assets, other than goodwill, are amortized over their estimated useful lives based upon the estimated economic value derived from the related intangible assets.

Income Taxes

Our provision for income taxes is comprised of a current and a deferred portion. The current income tax provision is calculated as the estimated taxes payable or refundable on tax returns for the current year. The deferred income tax provision is calculated for the estimated future tax effects attributable to temporary differences and carryforwards by using expected tax rates in effect in the years during which the differences are expected to reverse or the carryforwards are expected to be realized.

We currently have net deferred tax assets, comprised of net operating loss, or NOL, carryforwards, tax credit carryforwards and deductible temporary differences. Our management periodically weighs the positive and negative evidence to determine if it is more-likely-than-not that some or all of the deferred tax assets will be realized. In determining our net deferred tax assets and valuation allowances, annualized effective tax rates and cash paid for income taxes, management is required to make judgments and estimates about domestic and foreign profitability, the timing and extent of the utilization of NOL carryforwards, applicable tax rates, transfer pricing methodologies and tax planning strategies. Judgments and estimates related to our projections and assumptions are inherently uncertain; therefore, actual results could differ materially from our projections.

We have recorded certain tax reserves to address potential exposures involving our income tax positions. These potential tax liabilities result from the varying application of statutes, rules, regulations and interpretations by different taxing jurisdictions. Our estimate of the value of our tax reserves contains assumptions based on past experiences and judgments about the interpretation of statutes, rules and regulations by taxing jurisdictions. It is possible that the costs of the ultimate tax liability or benefit from these matters may be more or less than the amount that we estimated.

Uncertainty in income taxes is recognized in our consolidated financial statements using a two-step process to determine the amount of tax benefit to be recognized. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination. If the tax position is deemed more-likely-than-not to be sustained based on technical merit, the tax position is then assessed to determine the amount of benefit to recognize in the financial statements. The amount of the benefit that may be recognized is the largest amount that we believe has a greater than 50% likelihood of being realized upon ultimate settlement.

Accounting for Stock-Based Compensation

We issue stock-based compensation awards including stock options, restricted stock units and deferred stock units. We measure the fair value of these awards at the grant date and recognize such fair value as expense over the vesting period. We have selected the Black-Scholes option pricing model to determine the fair value of stock option awards and the Monte Carlo simulation model to determine the fair value of market-based restricted stock unit awards. Determining the fair value of stock-based awards at the grant date requires judgment, including estimating the expected life of the stock awards and the volatility of the underlying common stock. Our assumptions may differ from those used in prior periods. Changes to the assumptions may have a significant impact on the fair value of stock-based awards, which could have a material impact on our financial statements. Judgment is also required in estimating the number of stock-based awards that are expected to be forfeited. Should our actual forfeiture rates differ significantly from our estimates, our stock-based compensation expense and results of operations could be materially impacted. In addition, for awards that vest and become exercisable only upon achievement of specified performance conditions, we make judgments and estimates each quarter about the probability that such performance

conditions will be met or achieved. Changes to the estimates we make from time to time may have a significant impact on our stock-based compensation expense and could materially impact our result of operations.

Capitalized Internal-Use Software Costs

We capitalize salaries and related costs, including stock-based compensation, of employees and consultants who devote time to the development of internal-use software development projects, as well as interest expense related to our senior convertible notes. Capitalization begins during the application development stage, once the preliminary project stage has been completed. If a project constitutes an enhancement to previously-developed software, we assess whether the enhancement creates additional functionality to the software, thus qualifying the work incurred for capitalization. Once the project is available for general release, capitalization ceases and we estimate the useful life of the asset and begin amortization. We periodically assess whether triggering events are present to review internal-use software for impairment. Changes in our estimates related to internal-use software would increase or decrease operating expenses or amortization recorded during the period.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Interest Rate Risk

Our portfolio of cash equivalents and short- and long-term investments is maintained in a variety of securities, including U.S. government agency obligations, high-quality corporate debt securities, commercial paper, mutual funds and money market funds. The majority of our investments are classified as available-for-sale securities and carried at fair market value with cumulative unrealized gains or losses recorded as a component of accumulated other comprehensive loss within stockholders' equity. A sharp rise in interest rates could have an adverse impact on the fair market value of certain securities in our portfolio. We do not currently hedge our interest rate exposure and do not enter into financial instruments for trading or speculative purposes.

Foreign Currency Risk

Growth in our international operations will incrementally increase our exposure to foreign currency fluctuations as well as other risks typical of international operations that could impact our business, including, but not limited to, differing economic conditions, changes in political climate, differing tax structures and other regulations and restrictions.

Transaction Exposure

Foreign exchange rate fluctuations may adversely impact our consolidated results of operations as exchange rate fluctuations on transactions denominated in currencies other than functional currencies result in gains and losses that are reflected in our consolidated statements of income. We enter into short-term foreign currency forward contracts to offset foreign exchange gains and losses generated by the re-measurement of certain assets and liabilities recorded in non-functional currencies. Changes in the fair value of these derivatives, as well as re-measurement gains and losses, are recognized in our consolidated statements of income within other (expense) income, net. Foreign currency transaction gains and losses from these forward contracts were determined to be immaterial during the years ended December 31, 2019, 2018 and 2017. We do not enter into derivative financial instruments for trading or speculative purposes.

Translation Exposure

To the extent the U.S. dollar weakens against foreign currencies, the translation of these foreign currency-denominated transactions will result in increased revenue and operating expenses. Conversely, our revenue and operating expenses will decrease when the U.S. dollar strengthens against foreign currencies.

Foreign exchange rate fluctuations may also adversely impact our consolidated financial condition as the assets and liabilities of our foreign operations are translated into U.S. dollars in preparing our consolidated balance sheet. These gains or losses are recorded as a component of accumulated other comprehensive loss within stockholders' equity.

Credit Risk

Concentrations of credit risk with respect to accounts receivable are limited to certain customers to which we make substantial sales. Our customer base consists of a large number of geographically dispersed customers diversified across numerous industries. We believe that our accounts receivable credit risk exposure is limited. As of December 31, 2019 and 2018, no customer had an accounts receivable balance of 10% or more of our accounts receivable. We believe that at December 31, 2019, the concentration of credit risk related to accounts receivable was insignificant.

Item 8. Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Akamai Technologies, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Akamai Technologies, Inc. and its subsidiaries (the “Company”) as of December 31, 2019 and 2018, and the related consolidated statements of income, comprehensive income, stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2019, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

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

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Massachusetts Appellate Tax Board Appeal

As described in Note 19 to the consolidated financial statements, the Company is currently involved in litigation related to certain adverse audit determinations. In the second quarter of 2018, the Company filed an appeal with the Massachusetts Appellate Tax Board contesting the adverse audit findings related to certain tax benefits and exemptions. The appeal hearing was held in late 2019 and the Company awaits the judge's determination. Management has determined that it is more-likely-than-not that it will prevail, and no reserve has been recorded related to these controversies. However, over the next 12 months, management's current assumptions and positions could change based on audit determinations and other events impacting management's analysis. As disclosed by management, such events, if resolved unfavorably, could significantly impact the Company's effective income tax rate and results of operations. Management has estimated that an adverse ruling related to the Massachusetts controversy could result in a gross income tax charge of approximately \$35.0 million, which could be partially offset by certain state tax credits of \$25.0 million which are not currently benefited as a result of the Company's valuation allowance assessment.

The principal considerations for our determination that performing procedures related to the Massachusetts Appellate Tax Board appeal is a critical audit matter are there was significant judgment by management when determining the Company's uncertain tax position relative to the Massachusetts Appellate Tax Board appeal, including a high degree of estimation uncertainty relative to numerous and complex tax laws and assessment of judicial precedent. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate management's judgments. Also, the evaluation of audit evidence available to support the Massachusetts Appellate Tax Board appeal required significant auditor judgment as the nature of the evidence is often highly subjective and the audit effort involved the use of professionals with specialized skill and knowledge to assist in evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the Company's identification and recognition of the liability for uncertain tax positions, including controls over the evaluation of the technical merits of the Company's appeal and evaluation of numerous and complex tax laws and judicial precedent relevant to the appeal. These procedures also included, among others, 1) evaluating the reasonableness of management's assessment that it is more-likely-than-not the Company will prevail in the Massachusetts Appellate Tax Board matter, including the potential for an unfavorable outcome of the appeal, and 2) professionals with specialized skill and knowledge were used to assist in the evaluation of management's assessment of the technical merits of the tax position, including evaluating the reasonableness of management's assessment of whether the tax position is more-likely-than not of being sustained and the application of relevant tax laws and assessment of the judicial precedent.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
February 28, 2020

We have served as the Company's auditor since 1998.

AKAMAI TECHNOLOGIES, INC.
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	December 31, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 393,745	\$ 1,036,455
Marketable securities	1,143,249	855,650
Accounts receivable, net of reserves of \$1,880 and \$1,534 at December 31, 2019 and 2018, respectively	551,943	479,889
Prepaid expenses and other current assets	142,676	163,360
Total current assets	2,231,613	2,535,354
Marketable securities	835,384	209,066
Property and equipment, net	1,152,153	910,618
Operating lease right-of-use assets	758,450	—
Acquired intangible assets, net	179,431	168,348
Goodwill	1,600,265	1,487,404
Deferred income tax assets	76,528	34,913
Other assets	173,062	116,067
Total assets	<u>\$ 7,006,886</u>	<u>\$ 5,461,770</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 138,946	\$ 99,089
Accrued expenses	334,861	328,304
Deferred revenue	71,223	69,083
Convertible senior notes	—	686,552
Operating lease liabilities	139,463	—
Other current liabilities	8,843	27,681
Total current liabilities	693,336	1,210,709
Deferred revenue	4,368	4,557
Deferred income tax liabilities	29,187	19,624
Convertible senior notes	1,839,791	874,080
Operating lease liabilities	692,181	—
Other liabilities	90,065	160,940
Total liabilities	3,348,928	2,269,910
Commitments and contingencies (Note 13)		
Stockholders' equity:		
Preferred stock, \$0.01 par value; 5,000,000 shares authorized; 700,000 shares designated as Series A Junior Participating Preferred Stock; no shares issued or outstanding	—	—
Common stock, \$0.01 par value; 700,000,000 shares authorized; 162,000,843 and 162,904,550 shares issued and outstanding at December 31, 2019 and 2018, respectively	1,620	1,629
Additional paid-in capital	3,653,486	3,670,033
Accumulated other comprehensive loss	(45,144)	(48,912)
Retained earnings (accumulated deficit)	47,996	(430,890)
Total stockholders' equity	3,657,958	3,191,860
Total liabilities and stockholders' equity	<u>\$ 7,006,886</u>	<u>\$ 5,461,770</u>

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

AKAMAI TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF INCOME

	For the Years Ended December 31,		
	2019	2018	2017
<i>(in thousands, except per share data)</i>			
Revenue	\$ 2,893,617	\$ 2,714,474	\$ 2,489,035
Costs and operating expenses:			
Cost of revenue (exclusive of amortization of acquired intangible assets shown below)	987,624	953,485	875,837
Research and development	261,365	246,165	222,434
Sales and marketing	523,883	517,353	481,522
General and administrative	516,093	574,067	509,165
Amortization of acquired intangible assets	38,581	33,311	30,904
Restructuring charge	17,153	27,594	54,884
Total costs and operating expenses	2,344,699	2,351,975	2,174,746
Income from operations	548,918	362,499	314,289
Interest income	34,355	26,940	17,855
Interest expense	(49,364)	(43,202)	(18,839)
Other (expense) income, net	(1,428)	(3,148)	887
Income before provision for income taxes	532,481	343,089	314,192
Provision for income taxes	(53,350)	(44,716)	(91,426)
Loss from equity method investment	(1,096)	—	—
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Net income per share:			
Basic	\$ 2.94	\$ 1.78	\$ 1.30
Diluted	\$ 2.90	\$ 1.76	\$ 1.29
Shares used in per share calculations:			
Basic	162,706	167,312	171,559
Diluted	164,573	169,188	172,711

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

AKAMAI TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<i>(in thousands)</i>	For the Years Ended December 31,		
	2019	2018	2017
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Other comprehensive income (loss):			
Foreign currency translation adjustments	(1,020)	(27,585)	36,151
Change in unrealized gain (loss) on investments, net of income tax (provision) benefit of \$(666), \$(200) and \$245 for the years ended December 31, 2019, 2018 and 2017, respectively	4,788	603	(406)
Other comprehensive income (loss)	3,768	(26,982)	35,745
Comprehensive income	\$ 481,803	\$ 271,391	\$ 258,511

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

AKAMAI TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)	For the Years Ended December 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	440,674	434,520	372,313
Stock-based compensation	187,140	183,813	164,308
Provision (benefit) for deferred income taxes	933	2,339	(7,244)
Amortization of debt discount and issuance costs	45,857	41,958	18,839
Restructuring-related software charge	3,784	4,940	31,965
Other non-cash reconciling items, net	4,744	12,078	10,068
Changes in operating assets and liabilities, net of effects of acquisitions:			
Accounts receivable	(64,471)	(30,445)	(50,054)
Prepaid expenses and other current assets	11,689	(4,132)	(28,968)
Accounts payable and accrued expenses	8,769	42,238	33,232
Deferred revenue	(13,547)	(919)	2,938
Other current liabilities	(17,230)	9,422	16,378
Other non-current assets and liabilities	(28,073)	14,142	14,442
Net cash provided by operating activities	1,058,304	1,008,327	800,983
Cash flows from investing activities:			
Cash paid for acquisitions, net of cash acquired	(165,329)	(79)	(369,073)
Cash paid for equity method investment	(36,008)	—	—
Purchases of property and equipment	(359,667)	(217,609)	(254,146)
Capitalization of internal-use software development costs	(202,410)	(188,132)	(160,632)
Purchases of short-and long-term marketable securities	(1,990,148)	(873,697)	(326,497)
Proceeds from sales of short-and long-term marketable securities	856	16,569	219,916
Proceeds from maturities of short-and long-term marketable securities	1,084,373	758,481	432,853
Other non-current assets and liabilities	399	(2,066)	(1,586)
Net cash used in investing activities	(1,667,934)	(506,533)	(459,165)
Cash flows from financing activities:			
Proceeds from the issuance of convertible senior notes	1,135,629	1,132,185	—
Proceeds from the issuance of warrants	185,150	119,945	—
Purchase of note hedge related to convertible senior notes	(312,225)	(261,740)	—
Repayment of convertible senior notes	(690,000)	—	—
Proceeds related to the issuance of common stock under stock plans	57,112	62,608	55,680
Employee taxes paid related to net share settlement of stock-based awards	(75,266)	(64,305)	(58,395)
Repurchases of common stock	(334,519)	(750,000)	(361,194)
Other non-current assets and liabilities	(1,558)	(5,085)	(1,096)
Net cash (used in) provided by financing activities	(35,677)	233,608	(365,005)
Effects of exchange rate changes on cash and cash equivalents	2,466	(12,844)	12,990
Net (decrease) increase in cash and cash equivalents	(642,841)	722,558	(10,197)
Cash, cash equivalents and restricted cash at beginning of year	1,036,987	314,429	324,626
Cash, cash equivalents and restricted cash at end of year	\$ 394,146	\$ 1,036,987	\$ 314,429

AKAMAI TECHNOLOGIES, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS, continued

(in thousands)	For the Years Ended December 31,		
	2019	2018	2017
Supplemental disclosure of cash flow information:			
Cash paid for income taxes, net of refunds received in the years ended December 31, 2019, 2018 and 2017 of \$3,731, \$18,501 and \$6,750, respectively	\$ 73,898	\$ 45,129	\$ 91,640
Cash paid for interest expense	1,438	639	—
Cash paid for operating lease liabilities	153,818		
Non-cash activities:			
Operating lease right-of-use assets obtained in exchange for operating lease liabilities	529,376		
Purchases of property and equipment and capitalization of internal-use software development costs included in accounts payable and accrued expenses	88,238	54,867	27,209
Capitalization of stock-based compensation	35,905	34,785	28,851
Reconciliation of cash, cash equivalents and restricted cash:			
Cash and cash equivalents	\$ 393,745	\$ 1,036,455	\$ 313,382
Restricted cash	401	532	1,047
Cash, cash equivalents and restricted cash	<u>\$ 394,146</u>	<u>\$ 1,036,987</u>	<u>\$ 314,429</u>

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

AKAMAI TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Additional Paid-in Capital	Treasury Stock	Accumulated Other Comprehensive Loss	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity
	Shares	Amount					
<i>(in thousands, except share data)</i>							
Balance at January 1, 2017	173,254,797	\$ 1,733	\$ 4,239,588	\$ —	\$ (57,675)	\$ (913,428)	\$ 3,270,218
Issuance of common stock upon the exercise of stock options and vesting of restricted and deferred stock units, net of shares withheld for employee taxes	2,453,961	24	(40,562)				(40,538)
Issuance of common stock under employee stock purchase plan	1,052,684	11	42,291				42,302
Stock-based compensation			193,170				193,170
Repurchases of common stock	(6,868,118)			(361,194)			(361,194)
Treasury stock retirement		(69)	(361,125)	361,194			—
Net income						222,766	222,766
Foreign currency translation adjustment					36,151		36,151
Change in unrealized gain on investments, net of tax					(406)		(406)
Balance at December 31, 2017	169,893,324	1,699	4,073,362	—	(21,930)	(690,662)	3,362,469
Cumulative-effect adjustment to accumulated deficit related to adoption of new accounting pronouncement						(38,601)	(38,601)
Issuance of common stock upon the exercise of stock options and vesting of restricted and deferred stock units, net of shares withheld for employee taxes	2,235,212	22	(56,566)				(56,544)
Issuance of common stock under employee stock purchase plan	973,975	10	50,678				50,688
Stock-based compensation			218,416				218,416
Equity component of convertible senior notes, net of deferred tax of \$4,971 and issuance costs of \$4,418			275,836				275,836
Issuance of warrants related to convertible senior notes			119,945				119,945
Purchase of note hedge related to convertible senior notes			(261,740)				(261,740)
Repurchases of common stock	(10,197,961)			(750,000)			(750,000)
Treasury stock retirement		(102)	(749,898)	750,000			—
Net income						298,373	298,373
Foreign currency translation adjustment					(27,585)		(27,585)
Change in unrealized gain on investments, net of tax					603		603
Balance at December 31, 2018	162,904,550	\$ 1,629	\$ 3,670,033	\$ —	\$ (48,912)	\$ (430,890)	\$ 3,191,860

AKAMAI TECHNOLOGIES, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY, continued

	Common Stock		Additional Paid- in Capital	Treasury Stock	Accumulated Other Comprehensive Loss	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity
	Shares	Amount					
<i>(in thousands, except share data)</i>							
Balance at December 31, 2018	162,904,550	\$ 1,629	\$ 3,670,033	\$ —	\$ (48,912)	\$ (430,890)	\$ 3,191,860
Cumulative-effect adjustment to accumulated deficit related to adoption of new accounting pronouncement						851	851
Issuance of common stock upon the exercise of stock options and vesting of restricted and deferred stock units, net of shares withheld for employee taxes	2,251,840	22	(72,350)				(72,328)
Issuance of common stock under employee stock purchase plan	879,648	9	53,680				53,689
Stock-based compensation			222,857				222,857
Equity component of convertible senior notes, net of deferred tax of \$23,170 and issuance costs of \$2,880			240,820				240,820
Issuance of warrants related to convertible senior notes			185,150				185,150
Purchase of note hedge related to convertible senior notes			(312,225)				(312,225)
Repurchases of common stock	(4,035,195)			(334,519)			(334,519)
Treasury stock retirement		(40)	(334,479)	334,519			—
Net income						478,035	478,035
Foreign currency translation adjustment					(1,020)		(1,020)
Change in unrealized gain on investments, net of tax					4,788		4,788
Balance at December 31, 2019	162,000,843	\$ 1,620	\$ 3,653,486	\$ —	\$ (45,144)	\$ 47,996	\$ 3,657,958

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

AKAMAI TECHNOLOGIES, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Nature of Business and Basis of Presentation

Akamai Technologies, Inc. (the "Company") provides solutions for securing, delivering and optimizing content and business applications over the Internet. Its globally-distributed platform comprises more than 250,000 servers across more than 130 countries. The Company was incorporated in Delaware in 1998 and is headquartered in Cambridge, Massachusetts. The Company currently operates in one industry segment: providing cloud services for delivering, optimizing and securing content and business applications over the Internet.

The accompanying consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries. All intercompany transactions and balances have been eliminated in the accompanying consolidated financial statements.

2. Summary of Significant Accounting Policies

Use of Estimates

The Company prepares its consolidated financial statements in conformity with accounting principles generally accepted in the United States of America. These principles require management to make estimates, judgments and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and the amounts disclosed in the related notes to the consolidated financial statements. Actual results and outcomes may differ materially from management's estimates, judgments and assumptions. Significant estimates, judgments and assumptions used in these financial statements include, but are not limited to, those related to revenue, accounts receivable and related reserves, valuation and impairment of investments and marketable securities, valuation and useful lives of acquired intangible assets, useful lives and realizability of long-lived assets, capitalized internal-use software development costs, income tax reserves and accounting for stock-based compensation. Estimates are periodically reviewed in light of changes in circumstances, facts and experience. The effects of material revisions in estimates are reflected in the consolidated financial statements prospectively from the date of the change in estimate.

Newly-Adopted Accounting Pronouncements

Leases

In February 2016, the Financial Accounting Standards Board ("FASB") issued guidance that requires companies to present assets and liabilities arising from leases on the consolidated balance sheet. The updated standard aims to increase transparency and comparability among organizations by requiring lessees to recognize right of use ("ROU") assets and lease liabilities on the balance sheet and disclose key information about leasing arrangements. The Company adopted this standard on January 1, 2019 on a modified retrospective basis by applying the new standard to its lease portfolio as of January 1, 2019, while continuing to apply legacy guidance in the comparative periods.

The Company elected to use the package of practical expedients available under the transition provisions of the guidance, which allows companies to not reassess prior conclusions related to contracts containing leases, lease classification and capitalization of initial direct costs. The Company also elected not to apply the hindsight practical expedient related to its lease transactions.

Adoption of the standard required the Company to record ROU assets and lease liabilities for its operating leases related to real estate and co-location arrangements. The operating leases resulted in the recognition of ROU assets and lease liabilities of \$362.2 million and \$394.1 million, respectively, as of January 1, 2019. The adoption of the standard also resulted in elimination of deferred rent liabilities of \$31.7 million, as of January 1, 2019; such amounts are now recorded as a reduction of the ROU asset. The standard did not have an impact on the Company's results of operations or cash flows.

Stranded Tax Effects Resulting from U.S. Tax Cuts and Jobs Act

In February 2018, the FASB issued guidance that allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the U.S. Tax Cuts and Jobs Act ("TCJA") that was enacted in 2017. This guidance was effective for the Company on January 1, 2019. The adoption of this new accounting guidance resulted in the reclassification of \$0.9 million of income tax benefits resulting from the TCJA from accumulated other comprehensive loss to

retained earnings (accumulated deficit). The adoption of this new accounting guidance did not have an impact on the Company's results of operations or cash flows.

Cash, Cash Equivalents and Marketable Securities

Cash and cash equivalents consist of cash held in bank deposit accounts and short-term, highly-liquid investments with remaining maturities of three months or less at the date of purchase. Marketable securities consist of corporate, government and other securities. Securities having remaining maturities of less than one year from the date of the balance sheet are classified as short-term, and those with maturities of more than one year from the date of the balance sheet are classified as long-term in the consolidated balance sheet.

The Company classifies its debt securities with readily determinable market values as available-for-sale. These investments are classified as marketable securities on the consolidated balance sheets and are carried at fair market value, with unrealized gains and losses considered to be temporary in nature and reported as accumulated other comprehensive loss, a separate component of stockholders' equity. The Company reviews all investments for reductions in fair value that are other-than-temporary. When such reductions occur, the cost of the investment is adjusted to fair value through recording a loss on investments in the consolidated statements of income. Gains and losses on investments are calculated on the basis of specific identification.

Marketable securities are considered to be impaired when a decline in fair value below cost basis is determined to be other-than-temporary. The Company periodically evaluates whether a decline in fair value below cost basis is other-than-temporary by considering available evidence regarding these investments including, among other factors: the duration of the period that, and extent to which, the fair value is less than cost basis; the financial health and business outlook of the issuer, including industry and sector performance and operational and financing cash flow factors; overall market conditions and trends; and the Company's intent and ability to retain its investment in the security for a period of time sufficient to allow for an anticipated recovery in market value. Once a decline in fair value is determined to be other-than-temporary, a write-down is recorded and a new cost basis in the security is established. Assessing the above factors involves inherent uncertainty. Write-downs, if recorded, could be materially different from the actual market performance of marketable securities in the Company's portfolio if, among other things, relevant information related to the marketable securities was not publicly available or other factors not considered by the Company would have been relevant to the determination of impairment.

Accounts Receivable and Related Reserves

The Company's accounts receivable balance includes unbilled amounts that represent revenue recorded for customers that are typically billed monthly in arrears. The Company records reserves against its accounts receivable balance. These reserves primarily consist of allowances for doubtful accounts. Increases and decreases in the allowance for doubtful accounts are included as a component of general and administrative expense in the consolidated statements of income. Estimates are used in determining the Company's reserves and are based upon the Company's review of outstanding balances on a customer-specific, account-by-account basis. The allowance for doubtful accounts is based upon a review of customer receivables from prior sales with collection issues where the Company no longer believes that the customer has the ability to pay for services previously provided. The Company also performs ongoing credit evaluations of its customers. If such an evaluation indicates that payment is no longer reasonably assured for services provided, any future services provided to that customer will result in the creation of a cash-basis reserve until the Company receives consistent payments. The Company does not have any off-balance sheet credit exposure related to its customers.

Incremental Costs to Obtain a Contract with a Customer

The Company capitalizes incremental costs associated with obtaining customer contracts, specifically certain commission and incentive payments. The Company pays commissions and incentives up-front based on contract value upon signing a new arrangement with a customer and upon renewal and upgrades of existing contracts with customers if the renewal and upgrades result in an incremental increase in contract value. To the extent commissions and incentives are earned, the expenses, including estimated payroll taxes, are deferred on the Company's consolidated balance sheet and amortized over the expected life of the customer arrangement on a straight-line basis. The Company also incurs commission expense on an ongoing basis based upon revenue recognized. In these cases, no incremental costs are deferred, as the commissions are earned and expensed in the same period for which the associated revenue is recognized.

Based on the nature of the Company's unique technology and services, and the rate at which the Company continually enhances and updates its technology, the expected life of the customer arrangement is determined to be approximately 2.5 years. Amortization is primarily included in sales and marketing expense in the consolidated statements of income. The current portion

of deferred commission and incentive payments is included in prepaid expenses and other current assets, and the long-term portion is included in other assets on the Company's consolidated balance sheets.

Concentrations of Credit Risk

The amounts reflected in the consolidated balance sheets for accounts receivable, other current assets, accounts payable, accrued liabilities and other current liabilities approximate fair values due to their short-term maturities. The Company maintains the majority of its cash, cash equivalents and marketable securities with major financial institutions that the Company believes to be of high credit standing. The Company believes that, as of December 31, 2019, its concentration of credit risk related to cash equivalents and marketable securities was not significant.

Concentrations of credit risk with respect to accounts receivable are primarily limited to certain customers to which the Company makes substantial sales. The Company's customer base consists of a large number of geographically-dispersed customers diversified across several industries. To reduce risk, the Company routinely assesses the financial strength of its customers. Based on such assessments, the Company believes that its accounts receivable credit risk exposure is limited. For the years ended December 31, 2019, 2018 and 2017, no customer accounted for more than 10% of total revenue. As of December 31, 2019 and 2018, no customer had an accounts receivable balance greater than 10% of total accounts receivable. The Company believes that, as of December 31, 2019, its concentration of credit risk related to accounts receivable was not significant.

Fair Value of Financial Measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. The Company has certain financial assets and liabilities recorded at fair value, principally cash equivalents and short- and long-term marketable securities that have been classified as Level 1, 2 or 3 within the fair value hierarchy. Fair values determined by Level 1 inputs utilize quoted prices (unadjusted) in active markets for identical assets or liabilities that the Company can access at the reporting date. Fair values determined by Level 2 inputs utilize data points other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. Fair values determined by Level 3 inputs are based on unobservable data points for the asset or liability.

Property and Equipment

Property and equipment are recorded at cost, net of accumulated depreciation and amortization. Property and equipment generally include purchases of items with a per-unit value greater than \$1,000 and an estimated useful life greater than one year. Depreciation and amortization are computed on a straight-line basis over the estimated useful lives of the assets. Leasehold improvements are amortized over the shorter of the related lease terms or their estimated useful lives.

The Company periodically reviews the estimated useful lives of property and equipment. Changes to the estimated useful lives are recorded prospectively from the date of the change. Upon retirement or sale, the cost of the assets disposed of and the related accumulated depreciation are removed from the accounts, and any resulting gain or loss is included in income from operations. Repairs and maintenance costs are expensed as incurred.

The Company has implemented software and hardware initiatives to manage its global network more efficiently and, as a result, the expected average useful life of its network assets, primarily servers, increased from four years to five years, effective January 1, 2019. These changes decreased depreciation expense by \$31.5 million and increased net income by \$26.1 million, or \$0.16 per share, for the year ended December 31, 2019.

Operating Leases

The Company enters into operating leases for real estate assets related to office space and co-location assets related to space or racks at co-location facilities and related equipment for its servers and other networking equipment. The Company determines if an arrangement contains a lease at the inception of a contract by assessing whether there is an identified asset and whether the contract conveys the right to control the use of the identified asset in exchange for consideration and the right to obtain the economic benefits from the use of the identified asset.

Upon commencement of a lease, the Company records a ROU asset that represents the Company's right to use the underlying asset for the lease term and a lease liability that represents an obligation to make lease payments arising from the lease. ROU assets and lease liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. Lease payments are discounted at the lease commencement date. As the Company's leases do not provide an implicit rate,

an incremental borrowing rate has been applied based on the Company's credit-adjusted risk-free rate. The incremental borrowing rate at January 1, 2019 (the date the new lease standard was adopted) was used to calculate the present value of the Company's lease portfolio as of that date.

The Company often enters into contracts that contain both lease and non-lease components. Real estate non-lease components include real estate taxes, insurance, maintenance, parking and other operating costs. Co-location non-lease components include utilities and other operating costs. As of January 1, 2019, the Company includes both lease and non-lease components of fixed costs in its lease arrangements as a single lease component. Variable costs, such as utilities based on actual usage, are not included in the measurement of ROU assets and lease liabilities but are expensed when the event determining the amount of variable consideration to be paid occurs.

The Company's lease terms often include renewal options and, particularly in the case of co-location arrangements, may include evergreen provisions. The Company's ROU assets and lease liabilities generally do not include the options to extend, or terminate, unless it is reasonably certain that the Company will exercise these options. The Company has elected to exclude leases for certain networking equipment with terms of 12 months or less from its ROU assets and lease liabilities on its consolidated balance sheet.

Lease expense is recognized on a straight-line basis over the expected lease term.

Equity Method Investments

The Company accounts for equity investments in which it has significant influence, but not a controlling financial interest, using the equity method of accounting. Under the equity method of accounting, investments are initially recorded at cost, less impairment, and subsequently adjusted to recognize the Company's share of earnings or losses.

In February 2019, the Company and Mitsubishi UFJ Financial Group ("MUFG") announced the establishment of a joint venture, the Global Open Network, Inc. ("GO-NET"), and their plans to offer a new blockchain-based online payment network. The Company's 20% stake in GO-NET is accounted for using the equity method. As of December 31, 2019, the Company's \$34.7 million investment is included in other assets on the consolidated balance sheet. The Company recorded a loss of \$1.1 million during the year ended December 31, 2019 which reflects its share of the losses incurred by GO-NET during the period. Subsequent to the establishment of the joint venture, Akamai recorded revenue of \$11.6 million for services provided to GO-NET.

Goodwill, Acquired Intangible Assets and Long-Lived Assets

Goodwill is the amount by which the cost of acquired net assets in a business combination exceeds the fair value of the net identifiable assets on the date of purchase and is carried at its historical cost. The Company tests goodwill for impairment on an annual basis or more frequently if events or changes in circumstances indicate that the asset might be impaired. The Company performs its impairment test of goodwill as of December 31 each year. As of December 31, 2019, 2018 and 2017, the fair value of the Company's reporting unit was substantially in excess of the carrying value. The tests did not result in an impairment to goodwill during the years ended December 31, 2019, 2018 and 2017.

Acquired intangible assets consist of completed technologies, customer relationships, trademarks and trade names, non-compete agreements and acquired license rights. Acquired intangible assets, other than goodwill, are amortized over their estimated useful lives based upon the estimated economic value derived from the related intangible asset.

Long-lived assets, including property and equipment and acquired intangible assets, are reviewed for impairment whenever events or changes in circumstances, such as service discontinuance, technological obsolescence, significant decreases in the Company's market capitalization, facility closures, or work-force reductions indicate that the carrying amount of the long-lived asset may not be recoverable. When such events occur, the Company compares the carrying amount of the asset to the undiscounted expected future cash flows related to the asset. If this comparison indicates that an impairment is present, the amount of the impairment is calculated as the difference between the carrying amount and the fair value of the asset.

Contract Liabilities

Contract liabilities primarily represent payments received from customers for which the related performance obligations have not yet been satisfied. These balances consist of the unearned portion of monthly service fees and integration fees and prepayments made by customers for future periods. The current and long-term portions of the Company's contract liabilities are included in deferred revenue in the respective sections of the Company's consolidated balance sheets.

Revenue Recognition

The Company primarily derives revenue from the sale of services to customers executing contracts having terms of one year or longer. Services included in the Company's contracts consist of its core services – the delivery of content, applications and software over the Internet – as well as security solutions and professional services. Revenue is recognized upon transfer of control of promised services in an amount that reflects the consideration the Company expects to receive in exchange for those services.

The Company enters into contracts that may include various combinations of these services, which are generally capable of being distinct and accounted for as separate performance obligations. These contracts generally commit the customer to a minimum of monthly, quarterly or annual levels of usage and specify the rate at which the customer must pay for actual usage above the stated minimum. Based on the typical structure of the Company's contracts, which are generally for monthly recurring services that are essentially the same over time and have the same pattern of transfer to the customer, most performance obligations represent a promise to deliver a series of distinct services over time.

The Company's contracts with customers sometimes include promises to deliver multiple services to a customer. Determining whether services are distinct performance obligations often requires the exercise of judgment by management. For example, advanced features that enhance a service and are highly interrelated are generally not considered distinct; rather, they are combined with the service they relate to into one performance obligation. Different determinations related to combining services into performance obligations could result in differences in the timing and amount of revenue recognized in a period.

Generally, the transaction price in a contract is equal to the committed price stated in the contract, less any discounts or rebates. The Company's typical contracts qualify for series accounting and the pricing terms generally do not require estimation of the transaction price beyond the reporting period. As a result, any incremental fees generated as a result of usage or "bursting" over committed contract levels are recorded in the period to which the services relate. The amount of consideration recognized for usage above contract minimums is limited to the amount the Company expects to be entitled to receive in exchange for providing the services. Once the transaction price has been determined, the Company allocates such price among all performance obligations in the contract on a relative standalone selling price ("SSP") basis.

Determination of SSP requires the exercise of judgment by management. SSP is based on observable inputs such as the price the Company charges for the service when sold separately, or the discounted list price per management's approved price list. In cases where services are not sold separately or price list rates are not available, a cost-plus-margin approach or adjusted market approach is used to determine SSP.

Most content delivery and security services represent stand-ready obligations that are satisfied over time as the customer simultaneously receives and consumes the benefits provided by the Company. Accordingly, revenue for those services is recognized over time, generally ratably over the term of the arrangement due to consistent monthly traffic commitments that expire each period. Any bursting over given commitments is recognized in the period in which the traffic was served. For services that involve traffic consumption, revenue is recognized in an amount that reflects the level of traffic served to a customer in a given period. For custom arrangements, other methods may be used as a measure of progress towards satisfying the performance obligations.

Some of the Company's services are satisfied at a point in time, such as one-time professional services contracts, integration services and most license sales where the primary obligation is delivery of the license at the start of the term. In these cases, revenue is recognized at the point in time of delivery or satisfaction of the performance obligation.

From time to time, the Company enters into contracts to sell its services or license its technology to unrelated enterprises at or about the same time that it enters into contracts to purchase products or services from the same enterprises. Consideration payable to a customer is reviewed as part of the transaction price. If the payment to the customer does not represent payment for a distinct service, revenue is recognized only up to the net amount of consideration after customer payment obligations are considered. The Company may also resell the licenses or services of third parties. If the Company is acting as an agent in an arrangement with a customer to provide third party services, the transaction price reflects only the net amount to which the Company will be entitled, after accounting for payments made to the third party responsible for satisfying the performance obligation.

Cost of Revenue

Cost of revenue consists primarily of fees paid to network providers for bandwidth and to third-party network data centers for housing servers, also known as co-location costs. Cost of revenue also includes employee costs for services delivery and network operation, build-out and support of the Company's network; network storage costs; cost of software licenses; depreciation of

network equipment used to deliver the Company's services; amortization of network-related internal-use software; and costs for the production of live events streamed by the Company for customers. The Company enters into contracts for bandwidth with third-party network providers with terms typically ranging from several months to five years. These contracts generally commit the Company to pay minimum monthly fees plus additional fees for bandwidth usage above the committed level. In some circumstances, Internet service providers ("ISPs") make rack space available for the Company's servers and access to their bandwidth at a discount or no cost. In exchange, the ISP and its customers benefit by receiving content through a local Company server resulting in better content delivery. The Company does not consider these relationships to represent the culmination of an earnings process. Accordingly, the Company does not recognize as revenue the value to the ISPs associated with the use of the Company's servers, nor does the Company recognize as expense the value of the rack space and bandwidth received at discounted or no cost.

Research and Development Costs and Capitalized Internal-Use Software

Research and development costs consist primarily of payroll and related personnel costs for the design, development, deployment, testing and enhancement of the Company's services and network. Costs incurred in the development of the Company's services are expensed as incurred, except certain internal-use software development costs eligible for capitalization.

Capitalized costs include external consulting fees, payroll and payroll-related costs and stock-based compensation for employees in the Company's development and information technology groups who are directly associated with, and who devote time to, the Company's internal-use software projects. Capitalization begins when the planning stage is complete and the Company commits resources to the software project and continues during the application development stage. Capitalization ceases when the software has been tested and is ready for its intended use. Costs incurred during the planning, training and post-implementation stages of the software development life-cycle are expensed as incurred. The Company amortizes completed internal-use software that is used on its network to cost of revenue over its estimated useful life.

Accounting for Stock-Based Compensation

The Company recognizes compensation costs for all stock-based payment awards made to employees based upon the awards' grant-date fair value. The stock-based payment awards include stock options, restricted stock units, deferred stock units and employee stock purchases related to the Company's employee stock purchase plan.

For stock options, the Company has selected the Black-Scholes option-pricing model to determine the fair value of stock option awards. For stock awards with market-based vesting conditions, the Company uses a Monte Carlo simulation to determine the fair value of the award. For stock options, restricted stock units and deferred stock units that contain only a service-based vesting feature, the Company recognizes compensation cost on a straight-line basis over the award's vesting period. For awards with a performance condition-based vesting feature, the Company recognizes compensation cost on a graded-vesting basis over the award's expected vesting period, commencing when achievement of the performance condition is deemed probable. In addition, for awards that vest and become exercisable only upon achievement of specified performance conditions, the Company makes judgments and estimates each quarter about the probability that such performance conditions will be met or achieved. Any changes to those estimates that the Company makes from time to time may have a significant impact on the stock-based compensation expense recorded and could materially impact the Company's results of operations.

Foreign Currency Translation and Forward Currency Contracts

The assets and liabilities of the Company's subsidiaries are translated at the applicable exchange rate as of the balance sheet date, and revenue and expenses are translated at an average rate over the period. Resulting currency translation adjustments are recorded as a component of accumulated other comprehensive loss, a separate component of stockholders' equity. Gains and losses on inter-company and other non-functional currency transactions are recorded in other (expense) income, net.

The Company enters into short-term foreign currency forward contracts to offset foreign exchange gains and losses generated by the re-measurement of certain assets and liabilities recorded in non-functional currencies. Changes in the fair value of these derivatives, as well as re-measurement gains and losses, are recognized in current earnings in other (expense) income, net. As of December 31, 2019 and 2018, the fair value of the forward currency contracts and the underlying net gains for the years ended December 31, 2019, 2018 and 2017 were immaterial.

The Company's foreign currency forward contracts may be exposed to credit risk to the extent that its counterparties are unable to meet the terms of the agreements. The Company seeks to minimize counterparty credit (or repayment) risk by entering into transactions only with major financial institutions of investment grade credit rating.

Income Taxes

The Company's provision for income taxes is comprised of a current and a deferred portion. The current income tax provision is calculated as the estimated taxes payable or refundable on tax returns for the current year. The deferred income tax provision is calculated as the estimated future tax effects attributable to temporary differences and carryforwards using expected tax rates in effect in the years during which the differences are expected to reverse or the carryforwards are expected to be realized.

The Company currently has net deferred tax assets consisting of net operating loss ("NOL") carryforwards, tax credit carryforwards and deductible temporary differences. Management periodically weighs the positive and negative evidence to determine if it is more-likely-than-not that some or all of the deferred tax assets will be realized.

The Company has recorded certain tax reserves to address potential exposures involving its income tax positions. These potential tax liabilities result from the varying application of statutes, rules, regulations and interpretations by different taxing jurisdictions. The Company's estimate of the value of its tax reserves contains assumptions based on past experiences and judgments about the interpretation of statutes, rules and regulations by taxing jurisdictions. It is possible that the costs of the ultimate tax liability or benefit from these matters may be more or less than the amount the Company estimated.

Uncertainty in income taxes is recognized in the Company's consolidated financial statements using a two-step process. First, the tax position must be evaluated to determine the likelihood that it will be sustained upon external examination. If the tax position is deemed more-likely-than-not to be sustained based on technical merit, the tax position is then assessed to determine the amount of benefit to recognize in the financial statements. The amount of the benefit that may be recognized is the largest amount that has a greater than 50% likelihood of being realized upon ultimate settlement.

Recent Accounting Pronouncements

Credit Losses on Financial Instruments

In June 2016, the FASB issued guidance that introduces a new methodology for accounting for credit losses on financial instruments, including available-for-sale debt securities. The guidance establishes a new "expected loss model" that requires entities to estimate current expected credit losses on financial instruments by using all practical and relevant information. Any expected credit losses are to be reflected as allowances rather than reductions in the amortized cost of available-for-sale debt securities. This guidance will be effective for the Company on January 1, 2020. The Company has determined the adoption of this new standard will not have a material impact to its consolidated financial statements.

Fair Value Disclosure

In August 2018, the FASB issued guidance that changes fair value measurement disclosure requirements. This guidance will be effective for the Company on January 1, 2020. The Company has determined the adoption of this new standard will not have a material impact to its consolidated financial statements.

Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract

In August 2018, the FASB issued guidance that addresses a customer's accounting for implementation costs incurred in a cloud computing arrangement that is a service contract. The guidance aligns the accounting for costs incurred to implement a cloud computing arrangement that is a service arrangement with the guidance for capitalizing costs associated with developing or obtaining internal-use software. This guidance will be effective for the Company on January 1, 2020. The Company has determined the adoption of this new standard will not have a material impact to its consolidated financial statements.

3. Fair Value Measurements

The following is a summary of available-for-sale marketable securities held as of December 31, 2019 and 2018 (in thousands):

As of December 31, 2019	Amortized Cost	Gross Unrealized		Aggregate Fair Value	Classification on Balance Sheet	
		Gains	Losses		Short-Term Marketable Securities	Long-Term Marketable Securities
Certificates of deposit	\$ 150,000	\$ —	\$ —	\$ 150,000	\$ 150,000	\$ —
Commercial paper	73,829	23	(7)	73,845	73,845	—
Corporate bonds	1,368,668	1,840	(378)	1,370,130	753,538	616,592
U.S. government agency obligations	369,475	80	(74)	369,481	165,623	203,858
	<u>\$ 1,961,972</u>	<u>\$ 1,943</u>	<u>\$ (459)</u>	<u>\$ 1,963,456</u>	<u>\$ 1,143,006</u>	<u>\$ 820,450</u>
As of December 31, 2018						
Certificates of deposit	\$ 40,000	\$ —	\$ (7)	\$ 39,993	\$ 39,993	\$ —
Commercial paper	282,996	—	(50)	282,946	282,946	—
Corporate bonds	685,653	1	(4,309)	681,345	482,088	199,257
U.S. government agency obligations	50,876	—	(404)	50,472	50,472	—
	<u>\$ 1,059,525</u>	<u>\$ 1</u>	<u>\$ (4,770)</u>	<u>\$ 1,054,756</u>	<u>\$ 855,499</u>	<u>\$ 199,257</u>

The Company offers certain eligible employees the ability to participate in a non-qualified deferred compensation plan. The mutual funds held by the Company that are associated with this plan are classified as restricted trading securities. These securities are not included in the available-for-sale securities table above but are included in marketable securities in the consolidated balance sheets.

Unrealized gains and unrealized temporary losses on investments classified as available-for-sale are included within accumulated other comprehensive loss in the consolidated balance sheets. Upon realization, those amounts are reclassified from accumulated other comprehensive income to interest income in the consolidated statements of income. As of December 31, 2019, the Company held for investment corporate bonds with a fair value of \$35.9 million, which are classified as available-for-sale marketable securities and have been in a continuous unrealized loss position for more than 12 months. The immaterial unrealized losses related to these corporate bonds are included in accumulated other comprehensive income as of December 31, 2019. The unrealized losses are attributable to changes in interest rates. Based on the evaluation of available evidence, the Company does not believe any unrealized losses represent other than temporary impairments.

The following table details the fair value measurements within the fair value hierarchy of the Company's financial assets and liabilities as of December 31, 2019 and 2018 (in thousands):

	Total Fair Value	Fair Value Measurements at Reporting Date Using		
		Level 1	Level 2	Level 3
As of December 31, 2019				
<i>Cash Equivalents and Marketable Securities:</i>				
Money market funds	\$ 50,779	\$ 50,779	\$ —	\$ —
Certificates of deposit	150,000	—	150,000	—
Commercial paper	73,845	—	73,845	—
Corporate bonds	1,370,130	—	1,370,130	—
U.S. government agency obligations	369,481	—	369,481	—
Mutual funds	15,177	15,177	—	—
	<u>\$ 2,029,412</u>	<u>\$ 65,956</u>	<u>\$ 1,963,456</u>	<u>\$ —</u>
As of December 31, 2018				
<i>Cash Equivalents and Marketable Securities:</i>				
Money market funds	\$ 380,260	\$ 380,260	\$ —	\$ —
Certificates of deposit	39,993	39,993	—	—
Commercial paper	282,946	—	282,946	—
Corporate bonds	681,345	—	681,345	—
U.S. government agency obligations	50,472	—	50,472	—
Mutual funds	10,016	10,016	—	—
	<u>\$ 1,445,032</u>	<u>\$ 430,269</u>	<u>\$ 1,014,763</u>	<u>\$ —</u>
<i>Liabilities:</i>				
Contingent consideration obligation related to completed acquisitions	\$ (6,300)	\$ —	\$ —	\$ (6,300)

As of December 31, 2019 and 2018, the Company grouped money market and mutual funds using a Level 1 valuation because market prices for such investments are readily available in active markets. As of December 31, 2018, the Company also included brokered certificates of deposit using Level 1 valuation as market prices for these investments were readily available in active markets. As of December 31, 2019 and 2018, the Company grouped commercial paper, U.S. government agency obligations and corporate bonds using a Level 2 valuation because quoted prices for similar assets in active markets (or identical assets in an inactive market) are available. As of December 31, 2019, the Company also included bank certificates of deposit using Level 2 valuation because quoted prices for similar assets in active markets (or identical assets in an inactive market) are available. The Company did not have any transfers of assets or liabilities between Level 1 and Level 2 of the fair value measurement hierarchy during the years ended December 31, 2019 and 2018.

When developing fair value estimates, the Company maximizes the use of observable inputs and minimizes the use of unobservable inputs. When available, the Company uses quoted market prices to measure fair value. The valuation technique used to measure fair value for the Company's Level 1 and Level 2 assets is a market approach, using prices and other relevant information generated by market transactions involving identical or comparable assets. If market prices are not available, the fair value measurement is based on models that use primarily market-based parameters including yield curves, volatilities, credit ratings and currency rates. In certain cases where market rate assumptions are not available, the Company is required to make judgments about assumptions market participants would use to estimate the fair value of a financial instrument.

The valuation technique used to measure the fair value of the Company's Level 3 liabilities, which consist of contingent consideration related to the acquisition of Cyberfend, Inc. ("Cyberfend") in 2016, was primarily an income-based approach. The significant unobservable input used in the fair value measurement of the contingent consideration is the likelihood of achieving development milestones to integrate the acquired technology into the Company's technology as well as achieving certain post-closing financial results.

Contractual maturities of the Company's available-for-sale marketable securities held as of December 31, 2019 and 2018 were as follows (in thousands):

	December 31, 2019	December 31, 2018
Due in 1 year or less	\$ 1,143,006	\$ 855,499
Due after 1 year through 5 years	820,450	199,257
	<u>\$ 1,963,456</u>	<u>\$ 1,054,756</u>

The following table reflects the activity for the Company's major classes of liabilities measured at fair value using Level 3 inputs for the years ended December 31, 2019 and 2018 (in thousands):

	2019	2018
Beginning balance	\$ (6,300)	\$ (8,631)
Fair value adjustment to contingent consideration included in general and administrative expense	—	(1,835)
Cash paid upon achievement of milestone	6,300	4,166
Ending balance	<u>\$ —</u>	<u>\$ (6,300)</u>

4. Accounts Receivable

Net accounts receivable consisted of the following as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	December 31, 2018
Trade accounts receivable	\$ 396,204	\$ 337,445
Unbilled accounts receivable	157,619	143,978
Gross accounts receivable	553,823	481,423
Allowance for doubtful accounts and other reserves	(1,880)	(1,534)
Accounts receivable, net	<u>\$ 551,943</u>	<u>\$ 479,889</u>

A summary of activity in the accounts receivable reserves for the years ended December 31, 2019, 2018 and 2017 is as follows (in thousands):

	2019	2018	2017
Beginning balance	\$ 1,534	\$ 1,281	\$ 925
Charges to income from operations	5,116	3,824	3,407
Collections from customers previously reserved and other	(4,770)	(3,571)	(3,051)
Ending balance	<u>\$ 1,880</u>	<u>\$ 1,534</u>	<u>\$ 1,281</u>

Charges to income from operations primarily represents charges to bad debt expense for increases in the allowance for doubtful accounts.

5. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	December 31, 2018
Prepaid income taxes	\$ 26,143	\$ 47,196
Prepaid sales and other taxes	16,213	10,751
Prepaid equipment and software maintenance	18,114	21,876
Deferred commissions	45,009	41,955
Other prepaid expenses	19,593	22,871
Other current assets	17,604	18,711
Total	\$ 142,676	\$ 163,360

Incremental Costs to Obtain a Contract with a Customer

The following table summarizes the deferred costs associated with obtaining customer contracts, specifically commission and incentive payments, as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	December 31, 2018
Deferred costs included in prepaid and other current assets	\$ 45,009	\$ 41,955
Deferred costs included in other assets	25,698	26,338
Total deferred costs	\$ 70,707	\$ 68,293

During the years ended December 31, 2019, 2018 and 2017, the Company recognized \$44.3 million, \$45.0 million and \$37.6 million, respectively, of amortization expense related to deferred commissions. Amortization expense related to deferred commissions is primarily included in sales and marketing expense in the consolidated statements of income.

6. Property and Equipment

Property and equipment consisted of the following as of December 31, 2019 and 2018 (in thousands except years):

	December 31, 2019	December 31, 2018	Estimated Useful Life
Computer and networking equipment	\$ 1,469,293	\$ 1,301,604	3-7
Purchased software	90,450	73,888	3-10
Furniture and fixtures	65,683	54,057	1-7
Office equipment	38,178	29,309	3-5
Leasehold improvements	235,279	184,700	1-15
Internal-use software	1,132,180	944,279	2-7
Property and equipment, gross	3,031,063	2,587,837	
Accumulated depreciation and amortization	(1,878,910)	(1,677,219)	
Property and equipment, net	\$ 1,152,153	\$ 910,618	

Depreciation and amortization expense on property and equipment and capitalized internal-use software for the years ended December 31, 2019, 2018 and 2017 was \$402.1 million, \$401.2 million and \$341.4 million, respectively. During the years ended December 31, 2019, 2018 and 2017, the Company capitalized \$35.9 million, \$34.8 million and \$28.9 million, respectively, of stock-based compensation related to employees who developed and enhanced internal-use software applications.

During the years ended December 31, 2019 and 2018, the Company wrote off \$166.7 million and \$208.0 million, respectively, of property and equipment, gross, along with the associated accumulated depreciation and amortization. The

write-offs were primarily related to computer and networking equipment and internal-use software no longer in use. These assets had been substantially depreciated and amortized. In addition, the Company wrote off \$3.8 million and \$4.9 million, primarily of internal-use software as a result of certain restructuring efforts during the year ended December 31, 2019 and December 31, 2018, respectively.

7. Goodwill and Acquired Intangible Assets

The changes in the carrying amount of goodwill for the years ended December 31, 2019 and 2018 were as follows (in thousands):

	2019	2018
Beginning balance	\$ 1,487,404	\$ 1,498,688
Acquisition of Janrain, Inc.	92,188	—
Acquisition of Exceda	14,712	—
Acquisition of ChameleonX, Ltd.	7,069	—
Measurement period adjustments related to acquisitions completed in prior years	—	(6,667)
Foreign currency translation	(1,108)	(4,617)
Ending balance	\$ 1,600,265	\$ 1,487,404

Acquired intangible assets that are subject to amortization consisted of the following as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019			December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Completed technologies	\$ 153,722	\$ (94,088)	\$ 59,634	\$ 145,091	\$ (81,587)	\$ 63,504
Customer-related intangible assets	279,684	(163,155)	116,529	245,710	(144,786)	100,924
Non-compete agreements	830	(529)	301	700	(306)	394
Trademarks and trade names	7,600	(4,633)	2,967	7,200	(3,674)	3,526
Acquired license rights	490	(490)	—	490	(490)	—
Total	\$ 442,326	\$ (262,895)	\$ 179,431	\$ 399,191	\$ (230,843)	\$ 168,348

Aggregate expense related to amortization of acquired intangible assets for the years ended December 31, 2019, 2018 and 2017 was \$38.6 million, \$33.3 million and \$30.9 million, respectively. Based on the Company's acquired intangible assets as of December 31, 2019, aggregate expense related to amortization of acquired intangible assets is expected to be approximately \$41.0 million, \$36.2 million, \$31.0 million, \$23.9 million and \$16.6 million for the years ending December 31, 2020, 2021, 2022, 2023 and 2024, respectively.

8. Business Acquisitions

Acquisition-related costs were \$1.9 million, \$1.0 million and \$5.5 million during the years ended December 31, 2019, 2018 and 2017, respectively, and are included in general and administrative expense in the consolidated statements of income. Pro forma results of operations for the acquisitions completed in the years ended December 31, 2019 and 2017 have not been presented because the effects of the acquisitions, individually and in the aggregate, are not material to the Company's consolidated financial results. Revenue and earnings attributable to acquired operations since the dates of their acquisitions are included in the Company's consolidated statements of income and not presented separately because they are not material.

2019 Acquisitions*ChameleonX*

On November 10, 2019, the Company acquired ChameleonX, Ltd. ("ChameleonX"), an Israel-based company with a solution designed to detect when a website contains or links to malware that causes end user data to be compromised, for \$11.9 million in cash. The acquisition is expected to further strengthen the Company's security solutions portfolio. The Company allocated \$7.1 million of the cost of the acquisition to goodwill and \$6.1 million to a technology-related identifiable intangible asset with an average useful life of 7.1 years. The value of the goodwill is primarily attributable to synergies related to the integration of ChameleonX technology onto the Company's platform as well as a trained technical workforce. The total amount of goodwill related to the acquisition of ChameleonX expected to be deductible for tax purposes is \$7.1 million.

Exceda

On November 1, 2019, in a series of stock and asset purchase transactions, the Company acquired the operations of a group of companies known as Exceda, a vendor of content delivery network ("CDN") and web security services and, collectively, the Company's largest channel partner in Latin America, for \$32.7 million in cash. The acquisition is expected to enable the Company to expand its Latin America business more quickly, better enable existing and new partners and improve experiences for more customers. The Company allocated \$14.7 million of the cost of the acquisition to goodwill and \$16.5 million to identifiable intangible assets, primarily customer-related. The total weighted average useful life of the intangible assets acquired from Exceda is 8.1 years. The value of the goodwill is primarily attributable to synergies related to the scale of the combined teams as well as Exceda's trained technical workforce. The total amount of goodwill related to the acquisition of Exceda expected to be deductible for tax purposes is \$14.7 million.

The Company acquired various obligations as part of the acquisition for which it is indemnified. The total obligations recorded, with corresponding indemnification asset, totaled \$20.0 million.

Janrain

In January 2019, the Company acquired Janrain, Inc. ("Janrain"), a provider of customer identity and access management solutions, for \$123.6 million in cash. The Company is incorporating the Janrain technology into its Intelligent Edge Platform. The Company finalized its allocation of purchase price in the fourth quarter of 2019. Included in the final allocation are measurement period adjustments, primarily related deferred tax assets. The adjustment increased the deferred tax asset and reduced goodwill by \$7.5 million. The following table presents the final allocation of the purchase price for Janrain (in thousands):

Total purchase consideration	\$	123,632
Allocation of the purchase consideration:		
Cash	\$	2,223
Accounts receivable		7,318
Prepaid expenses and other current assets		838
Identifiable intangible assets		26,930
Goodwill		92,188
Deferred tax asset		12,622
Other assets		87
Total assets acquired		<u>142,206</u>
Accounts payable		(1,642)
Accrued liabilities		(2,596)
Deferred revenue		(14,336)
Total liabilities assumed		<u>(18,574)</u>
Net assets acquired	\$	<u>123,632</u>

The value of the goodwill can be attributed to a number of business factors, including a trained technical and sales workforce and cost synergies expected to be realized. The total amount of goodwill related to the acquisition of Janrain expected to be deductible for tax purposes is \$46.8 million.

The following were the identified intangible assets acquired and their respective weighted average useful lives (in thousands, except years):

	Gross Carrying Amount	Weighted Average Useful Life
Completed technologies	\$ 9,000	7.9
Customer-related intangible assets	17,700	13.9
Trademarks	200	1.9
Non-compete agreements	30	1.9
Total	\$ 26,930	

The total weighted average amortization period for the intangible assets acquired from Janrain is 11.8 years. The intangible assets are being amortized based upon the pattern in which the economic benefits of the intangible assets are being utilized.

2017 Acquisitions

Nominum

On November 27, 2017, the Company acquired Nominum, Inc. ("Nominum"), a provider of domain name system ("DNS") and enterprise security solutions, for \$180.3 million in cash. The acquisition added complementary capabilities to the Company's portfolio of security offerings while expanding the Company's distribution to carriers that serve enterprise customers. The following table presents the final allocation of the purchase price for Nominum (in thousands):

Total purchase consideration	\$ 180,327
Allocation of the purchase consideration:	
Cash	\$ 8,455
Accounts receivable	9,845
Prepaid expenses and other current assets	1,082
Identifiable intangible assets	33,200
Goodwill	129,876
Fixed assets	1,570
Deferred tax assets	16,080
Other assets	19
Total assets acquired	200,127
Accounts payable	(1,501)
Accrued liabilities	(3,471)
Deferred revenue	(14,828)
Total liabilities assumed	(19,800)
Net assets acquired	\$ 180,327

The value of the goodwill can be attributed to a number of business factors, including a trained technical and sales workforce and cost synergies expected to be realized. The total amount of goodwill related to the acquisition of Nominum expected to be deductible for tax purposes is \$54.1 million.

The following were the identified intangible assets acquired and their respective weighted average useful lives (in thousands, except years):

	Gross Carrying Amount	Weighted Average Useful Life
Completed technologies	\$ 7,200	2.2
Customer-related intangible assets	24,700	6.5
Trademarks	1,100	3.7
Non-compete agreements	200	1.5
Total	\$ 33,200	

The total weighted average amortization period for the intangible assets acquired from Nominum is 5.4 years. The intangible assets are being amortized based upon the pattern in which the economic benefits of the intangible assets are being utilized.

Soasta

On April 6, 2017, the Company acquired Soasta, Inc. ("Soasta"), a leader in digital performance management, for \$199.3 million in cash. The acquisition has allowed the Company to offer solutions designed to provide greater visibility into the business impact of customers' website and application optimization strategies. The following table presents the final allocation of the purchase price for Soasta (in thousands):

Total purchase consideration	\$ 199,280
Allocation of the purchase consideration:	
Cash	\$ 1,935
Accounts receivable	4,109
Prepaid expenses and other current assets	4,384
Identifiable intangible assets	49,900
Goodwill	122,794
Deferred tax assets	31,206
Total assets acquired	214,328
Accounts payable	(1,119)
Accrued liabilities	(4,366)
Deferred revenue	(9,563)
Total liabilities assumed	(15,048)
Net assets acquired	\$ 199,280

The value of the goodwill can be attributed to a number of business factors, including a trained technical and sales workforce and cost synergies expected to be realized. The total amount of goodwill related to the acquisition of Soasta expected to be deductible for tax purposes is \$36.4 million.

The following were the identified intangible assets acquired and their respective weighted average useful lives (in thousands, except years):

	Gross Carrying Amount	Weighted Average Useful Life
Completed technologies	\$ 18,800	4.1
Customer-related intangible assets	28,200	4.6
Trademarks	2,400	4.9
Non-compete agreements	500	1.9
Total	\$ 49,900	

The total weighted average amortization period for the intangible assets acquired from Soasta is 4.4 years. The intangible assets are being amortized based upon the pattern in which the economic benefits of the intangible assets are being utilized.

9. Accrued Expenses and Other Liabilities

Accrued expenses consisted of the following as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	December 31, 2018
Payroll and other related benefits	\$ 190,721	\$ 180,301
Bandwidth and co-location	65,213	76,184
Income tax payable	40,337	36,536
Property, use and other taxes	30,904	23,042
Professional service fees	1,775	2,169
Other accrued expenses	5,911	10,072
Total	\$ 334,861	\$ 328,304

Other liabilities consisted of the following as of December 31, 2019 and 2018 (in thousands):

	December 31, 2019	December 31, 2018
Deferred rent	\$ —	\$ 42,566
Uncertain tax positions	31,207	63,976
Other long-term liabilities	58,858	54,398
Total	\$ 90,065	\$ 160,940

10. Restructuring

During the fourth quarter of 2019, management committed to an action to restructure certain parts of the Company to focus on investments with the potential to accelerate revenue growth. As a result, certain headcount reductions were necessary and certain capitalized internal-use software charges were realized for software not yet placed into service that will not be completed and implemented due to this action. The Company incurred expenses of \$10.2 million for the year ended December 31, 2019 and expects to incur an additional \$4.0 million to \$7.0 million in the first quarter of 2020 for severance and related benefits and facility exit costs related to this action.

During the fourth quarter of 2018, management committed to an action to restructure certain parts of the Company with the intent of re-balancing investments to ensure long-term growth and scale. As a result, certain headcount reductions were necessary and certain capitalized internal-use software charges were realized for software not yet placed into service that will not be completed and implemented due to this action. The Company incurred expenses of \$19.0 million related to this action, of which \$6.7 million were incurred during the year ended December 31, 2019 and \$12.3 million were incurred during the year ended December 31, 2018. The Company does not expect any additional restructuring charges related to this action.

During the fourth quarter of 2017, management committed to an action to restructure certain parts of the Company, with the intent of shifting focus to more critical areas of the business and away from products that have not seen expected commercial success. The restructuring was also intended to facilitate cost efficiencies and savings. As part of the cost efficiency and savings plans, certain headcount and facility reductions were made in 2017 and 2018. Certain capitalized internal-use software charges have also been realized for software not yet placed into service that will not be completed and implemented due to this action. The Company incurred expenses of \$62.7 million related to this action, of which \$13.4 million were incurred during the year ended December 31, 2018 and \$49.3 million were incurred during the year ended December 31, 2017. The Company does not expect any additional restructuring charges related to this action.

The Company also recognizes restructuring charges for redundant employees, facilities and contracts associated with completed acquisitions. Restructuring charges related to these acquisitions were not material in any of the years ended December 31, 2019, 2018 and 2017.

The following table summarizes the activity of the Company's restructuring accrual during the years ended December 31, 2019, 2018 and 2017 (in thousands):

	Employee Severance and Related Benefits	Software Charges	Excess Facilities, Contract Terminations and Other	Total
Balance January 1, 2017	\$ 1,444	\$ —	\$ 169	\$ 1,613
Costs incurred	17,311	31,965	5,608	54,884
Cash disbursements	(5,898)	—	(3,212)	(9,110)
Software and other non-cash charges	—	(31,965)	(1,179)	(33,144)
Balance December 31, 2017	12,857	—	1,386	14,243
Costs incurred	15,841	4,940	6,813	27,594
Cash disbursements	(18,922)	—	(5,932)	(24,854)
Software and other non-cash charges	—	(4,742)	(1,787)	(6,529)
Translation adjustments and other	732	—	(205)	527
Balance December 31, 2018	10,508	198	275	10,981
Costs incurred	12,455	3,784	914	17,153
Cash disbursements	(17,294)	(99)	(1,038)	(18,431)
Software and other non-cash charges	—	(3,784)	—	(3,784)
Translation adjustments and other	38	—	—	38
Balance December 31, 2019	\$ 5,707	\$ 99	\$ 151	\$ 5,957

11. Debt

Convertible Notes – Due 2027

In August 2019, the Company issued \$1,150.0 million in par value of convertible senior notes due 2027 (the "2027 Notes"). The 2027 Notes are senior unsecured obligations of the Company, bear regular interest of 0.375%, payable semi-annually in arrears on March 1 and September 1 of each year, beginning on March 1, 2020, and mature on September 1, 2027, unless repurchased or converted in accordance with their terms prior to maturity.

At their option, holders may convert their 2027 Notes prior to the close of business on the business day immediately preceding May 1, 2027, only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ended December 31, 2019 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any five consecutive trading day period in which the trading price per \$1,000 principal amount of 2027 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day; or
- upon the occurrence of specified corporate events.

On or after May 1, 2027, holders may convert all or any portion of their 2027 Notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date.

Upon conversion, the Company, at its election, may pay or deliver to holders cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock. The initial conversion rate is 8.6073 shares of the Company's common stock per \$1,000 principal amount, which is equivalent to an initial conversion price of approximately \$116.18 per share, subject to adjustments in certain events, and represents a potential conversion into 9.9 million shares.

In accounting for the issuance of the 2027 Notes, the Company separated the 2027 Notes into liability and equity components. The carrying cost of the liability component was calculated by measuring the fair value of a similar debt obligation that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the fair value of the liability component from the par value of the 2027 Notes. The difference between the principal amount of the 2027 Notes and the proceeds allocated to the liability component ("debt discount") is amortized to interest expense using the effective interest method over the term of the 2027 Notes. The equity component is recorded in additional paid-in capital in the consolidated balance sheet and will not be remeasured as long as it continues to meet the conditions for equity classification.

In accounting for the transaction costs related to the issuance of the 2027 Notes, the Company allocated the total transaction costs incurred to the liability and equity components based on their relative values. Transaction costs attributable to the liability component are being amortized to interest expense over the term of the 2027 Notes, and transaction costs attributable to the equity component are netted against the equity component of the 2027 Notes in stockholders' equity.

The 2027 Notes consisted of the following components as of December 31, 2019 (in thousands):

	December 31, 2019
Liability component:	
Principal	\$ 1,150,000
Less: debt discount and issuance costs, net of amortization	(222,928)
Net carrying amount	\$ 927,072
Equity component:	\$ 220,529

The estimated fair value of the 2027 Notes at December 31, 2019 was \$1,133.8 million. The fair value was determined based on the quoted price of the 2027 Notes in an inactive market on the last trading day of the reporting period and has been classified as Level 2 within the fair value hierarchy. Based on the closing price of the Company's common stock of \$86.38 on December 31, 2019, the value of the 2027 Notes if converted to common stock was less than the principal amount of \$1,150.0 million.

The Company used \$100.0 million of the proceeds from the offering to repurchase shares of its common stock, concurrent with the issuance of the 2027 Notes. The repurchase was made in accordance with a share repurchase program previously approved by the Board of Directors. Additionally, \$127.1 million of the proceeds was used for the net cost of convertible note

hedge and warrant transactions. The net proceeds are intended to be used for working capital, share repurchases, potential acquisitions and strategic transactions, and other corporate purposes.

Note Hedge

To minimize the impact of potential dilution upon conversion of the 2027 Notes, the Company entered into convertible note hedge transactions with respect to its common stock in August 2019. The Company paid \$312.2 million for the note hedge transactions. The note hedge transactions cover approximately 9.9 million shares of the Company's common stock at a strike price that corresponds to the initial conversion price of the 2027 Notes, also subject to adjustment, and are exercisable upon conversion of the 2027 Notes. The note hedge transactions are intended to reduce dilution in the event of conversion of the 2027 Notes.

Warrants

Separately, in August 2019, the Company entered into warrant transactions, whereby the Company sold warrants to acquire, subject to anti-dilution adjustments, up to 9.9 million shares of the Company's common stock at a strike price of approximately \$178.74 per share. The Company received aggregate proceeds of \$185.2 million from the sale of the warrants. The convertible note hedge and warrant transactions will generally have the effect of increasing the conversion price of the 2027 Notes to approximately \$178.74 per share.

Convertible Notes – Due 2025

In May 2018, the Company issued \$1,150.0 million in par value of convertible senior notes due 2025 (the "2025 Notes"). The 2025 Notes are senior unsecured obligations of the Company, bear regular interest of 0.125%, payable semi-annually on May 1 and November 1 of each year, and mature on May 1, 2025, unless repurchased or converted prior to maturity.

At their option, holders may convert their 2025 Notes prior to the close of business on the business day immediately preceding January 1, 2025, only under the following circumstances:

- during any calendar quarter commencing after the calendar quarter ended June 30, 2018 (and only during such calendar quarter), if the last reported sale price of the Company's common stock for at least 20 trading days (whether or not consecutive) during the period of 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter is greater than or equal to 130% of the conversion price on each applicable trading day;
- during the five business day period after any five consecutive trading day period in which the trading price per \$1,000 principal amount of 2025 Notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price of the Company's common stock and the conversion rate on each such trading day; or
- upon the occurrence of specified corporate events.

On or after January 1, 2025, holders may convert all or any portion of their 2025 Notes at any time prior to the close of business on the second scheduled trading day immediately preceding the maturity date, regardless of the foregoing circumstances.

Upon conversion, the Company, at its election, may pay or deliver to holders cash, shares of the Company's common stock or a combination of cash and shares of the Company's common stock. The initial conversion rate is 10.5150 shares of the Company's common stock per \$1,000 principal amount, which is equivalent to an initial conversion price of approximately \$95.10 per share, subject to adjustments in certain events, and represents a potential conversion into 12.1 million shares.

In accounting for the issuance of the 2025 Notes, the Company separated the 2025 Notes into liability and equity components. The carrying cost of the liability component was calculated by measuring the fair value of a similar debt obligation that does not have an associated convertible feature. The carrying amount of the equity component representing the conversion option was determined by deducting the fair value of the liability component from the par value of the 2025 Notes. The difference between the principal amount of the 2025 Notes and the proceeds allocated to the liability component ("debt discount") is amortized to interest expense using the effective interest method over the term of the 2025 Notes. The equity component is recorded in additional paid-in capital in the consolidated balance sheet and will not be remeasured as long as it continues to meet the conditions for equity classification.

In accounting for the transaction costs related to the issuance of the 2025 Notes, the Company allocated the total transaction costs incurred to the liability and equity components based on their relative values. Transaction costs attributable to the liability component are being amortized to interest expense over the term of the 2025 Notes, and transaction costs attributable to the equity component are netted against the equity component of the 2025 Notes in stockholders' equity.

The 2025 Notes consist of the following components as of December 31, 2019 and December 31, 2018 (in thousands):

	December 31, 2019	December 31, 2018
Liability component:		
Principal	\$ 1,150,000	\$ 1,150,000
Less: debt discount and issuance costs, net of amortization	(237,281)	(275,920)
Net carrying amount	\$ 912,719	\$ 874,080
Equity component:	\$ 285,225	\$ 285,225

The estimated fair value of the 2025 Notes at December 31, 2019 was \$1,270.7 million. The fair value was determined based on the quoted price of the 2025 Notes in an inactive market on the last trading day of the reporting period and has been classified as Level 2 within the fair value hierarchy. Based on the closing price of the Company's common stock of \$86.38 on December 31, 2019, the value of the 2025 Notes if converted to common stock was less than the principal amount of \$1,150.0 million.

The Company used \$46.2 million of the proceeds from the offering to repurchase shares of its common stock, concurrent with the issuance of the 2025 Notes. The repurchase was made in accordance with a share repurchase program previously approved by the Board of Directors. Additionally, \$141.8 million of the proceeds was used for the net cost of convertible note hedge and warrant transactions and for the repayment at maturity of the \$690.0 million in par value of notes the Company issued in 2014. The remaining net proceeds have been and are expected to continue to be used for working capital, share repurchases, potential acquisitions and strategic transactions and other corporate purposes.

Note Hedge

To minimize the impact of potential dilution upon conversion of the 2025 Notes, the Company entered into convertible note hedge transactions with respect to its common stock in May 2018. The Company paid \$261.7 million for the note hedge transactions. The note hedge transactions cover approximately 12.1 million shares of the Company's common stock at a strike price that corresponds to the initial conversion price of the 2025 Notes, also subject to adjustment, and are exercisable upon conversion of the 2025 Notes. The note hedge transactions are intended to reduce dilution in the event of conversion of the 2025 Notes.

Warrants

Separately, in May 2018, the Company entered into warrant transactions, whereby the Company sold warrants to acquire, subject to anti-dilution adjustments, up to 12.1 million shares of the Company's common stock at a strike price of approximately \$149.18 per share. The Company received aggregate proceeds of \$119.9 million from the sale of the warrants. The convertible note hedge and warrant transactions will generally have the effect of increasing the conversion price of the 2025 Notes to approximately \$149.18 per share.

Convertible Notes – Due 2019

In February 2014, the Company issued \$690.0 million in par value of convertible senior notes due 2019 (the "2019 Notes"). The 2019 Notes were senior unsecured obligations of the Company and did not bear regular interest. The 2019 Notes matured and were repaid in full on February 15, 2019 as no repurchases or conversions occurred prior to maturity.

Revolving Credit Facility

In May 2018, the Company entered into a \$500.0 million five-year, revolving credit agreement (the "Credit Agreement"). Borrowings under the Credit Agreement may be used to finance working capital needs and for general corporate

purposes. The Credit Agreement provides for an initial \$500.0 million in revolving loans. Under specified circumstances, the facility can be increased to up to \$1.0 billion in aggregate principal amount. The Credit Agreement expires in May 2023.

Borrowings under the Credit Agreement bear interest, at the Company's option, at a base rate plus a spread of 0.00% to 0.25% or an adjusted LIBOR rate plus a spread of 0.875% to 1.25%, in each case with such spread being determined based on the Company's consolidated leverage ratio specified in the Credit Agreement. Regardless of what amounts, if any, are outstanding under the Credit Agreement, the Company is also obligated to pay an ongoing commitment fee on undrawn amounts at a rate of 0.075% to 0.15%, with such rate being based on the Company's consolidated leverage ratio specified in the Credit Agreement.

The Credit Agreement contains customary representations and warranties, affirmative and negative covenants and events of default. Principal covenants include a maximum consolidated leverage ratio and a minimum consolidated interest coverage ratio. There were no outstanding borrowings under the Credit Agreement as of December 31, 2019.

Interest Expense

The 2027 Notes bear interest at a fixed rate of 0.375%. The interest is payable semi-annually on March 1 and September 1 of each year, commencing in March 2020. The 2027 Notes have an effective interest rate of 3.1% attributable to the conversion feature. The 2025 Notes bear interest at a fixed rate of 0.125%. The interest is payable semi-annually on May 1 and November 1 of each year, commencing in November 2018. The 2025 Notes have an effective interest rate of 4.26% attributable to the conversion feature. The 2019 Notes did not bear regular interest, but had an effective interest rate of 3.2% attributable to the conversion feature. The Company is also obligated to pay ongoing commitment fees under the terms of the Credit Agreement. The following table sets forth total interest expense included in the consolidated statements of income for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Amortization of debt discount and issuance costs	\$ 52,059	\$ 46,493	\$ 22,826
Coupon interest payable on 2025 Notes	1,436	874	—
Coupon interest payable on 2027 Notes	1,557	—	—
Revolving credit facility contractual interest expense	513	368	—
Capitalization of interest expense	(6,201)	(4,533)	(3,987)
Total interest expense	<u>\$ 49,364</u>	<u>\$ 43,202</u>	<u>\$ 18,839</u>

12. Leases

The Company has entered into various operating lease agreements for its offices and co-location assets and related equipment. These operating leases have lease periods expiring between 2020 and 2034. In late 2019, the operating lease for the Company's corporate headquarters in Cambridge, Massachusetts and an operating sublease for office space both commenced, each with lease terms of 15 years. The Company did not incur a loss associated with this operating sublease arrangement. The Company has not assumed any renewal options in the determination of these lease terms and variable costs are not included as lease components as they are not fixed.

The following table is a summary of the Company's operating lease costs for the year ended December 31, 2019 (in thousands):

	Real Estate Arrangements	Co-location Arrangements	Total
Operating lease cost	\$ 63,893	\$ 96,020	\$ 159,913
Short-term lease cost	111	14,301	14,412
Variable lease cost	15,610	23,524	39,134
Sublease income	(5,119)	—	(5,119)
Total operating lease costs	<u>\$ 74,495</u>	<u>\$ 133,845</u>	<u>\$ 208,340</u>

Lease costs for real estate arrangements are included in general and administrative expenses in the consolidated statements of income. Lease costs for co-location arrangements are primarily included in cost of revenue.

At December 31, 2019, the real estate arrangements' weighted average remaining lease term and weighted average discount rate for operating leases were 12.8 years and 3.5%, respectively. At December 31, 2019, the co-location arrangements' weighted average remaining lease term and weighted average discount rate for operating leases were 3.9 years and 2.2%, respectively.

Maturities of operating lease liabilities as of December 31, 2019 were as follows (in thousands):

	Real Estate Arrangements	Co-location Arrangements
2020	\$ 77,961	\$ 63,514
2021	79,303	17,550
2022	75,657	9,603
2023	74,244	6,189
2024	67,727	4,795
Thereafter	532,549	14,695
Total lease payments	907,441	116,346
Less: imputed interest	186,457	5,686
Total lease liabilities	\$ 720,984	\$ 110,660

As of December 31, 2019, the Company had additional operating leases, primarily for real estate facilities, that had not yet commenced of \$13.7 million, which will commence in 2020 and 2022, with lease terms of one year to seven years. The table above excludes approximately \$211.0 million of future sublease income that is expected to be recognized through 2034.

As of December 31, 2019, the Company had outstanding letters of credit in the amount of \$7.4 million, primarily related to operating leases. The letters of credit remain in effect until the Company fulfills its obligations under these leases or as such obligations expire under the terms of the letters of credit.

Prior Period Disclosures

The minimum aggregate future obligations under non-cancelable operating leases, including real estate, co-location and bandwidth commitments as of December 31, 2018 were as follows (in thousands):

	Real Estate Arrangements	Bandwidth and Co-location Arrangements
2019	\$ 54,561	\$ 138,777
2020	78,683	24,420
2021	75,991	8,463
2022	72,579	5,233
2023	70,101	2,156
Thereafter	599,339	3,709
Total	\$ 951,254	\$ 182,758

Rent expense for the years ended December 31, 2018 and 2017 was \$63.2 million and \$58.8 million, respectively, as determined under the previous standard. The Company has entered into sublease agreements with tenants of various properties previously vacated by the Company. The amounts paid to the Company by these sublease tenants was \$3.8 million and \$3.6 million for the years ended December 31, 2018 and 2017, respectively.

13. Commitments and Contingencies

As of December 31, 2019, the Company had long-term commitments for bandwidth usage with various networks and ISPs. Additionally, as of December 31, 2019, the Company had entered into purchase orders with various vendors. The minimum future commitments as of December 31, 2019 were as follows (in thousands):

	Bandwidth Commitments	Purchase Order Commitments
2020	\$ 83,124	\$ 190,042
2021	21,191	19,540
2022	7,407	11,985
2023	1,382	2,276
2024	49	1,606
Thereafter	90	364
Total	\$ 113,243	\$ 225,813

Legal Matters

The Company is party to various litigation matters that management considers routine and incidental to its business. Management does not expect the results of any of these routine actions to have a material effect on the Company's business, results of operations, financial condition or cash flows.

In July 2016, as part of the resolution of a patent infringement lawsuit filed by the Company against Limelight Networks, Inc. ("Limelight") in 2006, the Company entered into an agreement that requires Limelight to pay the Company \$54.0 million in 12 equal installments over three years, beginning in August 2016. During the years ended December 31, 2019, 2018 and 2017, the Company received \$9.0 million, \$18.0 million and \$18.0 million, respectively, under this agreement. Substantially all of the amounts received were recorded as a gain contingency in the year the cash was received, which reduced general and administrative expenses in the consolidated statements of income, with the remaining as interest income.

In April 2018, as part of the resolution of multiple existing lawsuits between Limelight and the Company, including in the U.S. District Court for the Eastern District of Virginia and in the U.S. District Court for the District of Massachusetts, the Company and Limelight entered into an agreement to settle the cases and request that the U.S. Patent Trial and Appeal Board terminate certain proceedings related to patents at issue in the litigation. The Company recorded a \$14.9 million charge in the second quarter of 2018, which is included in general and administrative expenses in the consolidated statement of income for the year ended December 31, 2018, related to this settlement.

Indemnification

The Company enters into standard indemnification agreements in the ordinary course of business. Pursuant to these agreements, the Company agrees to indemnify, hold harmless and reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally the Company's business partners, vendors or customers, in connection with its provision of its services. Generally, these obligations are limited to claims relating to infringement of a patent, copyright or other intellectual property right or the Company's negligence, willful misconduct or violation of law. Subject to applicable statutes of limitation, the term of each of these indemnification agreements is generally perpetual from the time of execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited; however, the Company carries insurance that covers certain third-party claims relating to its services and activities and that could limit the Company's exposure in that respect.

The Company has agreed to indemnify each of its officers and directors during his or her lifetime for certain events or occurrences that happen by reason of the fact that the officer or director is or was or has agreed to serve as an officer or director of the Company. The Company has director and officer insurance policies that may limit its exposure and may enable the Company to recover a portion of certain future amounts paid.

To date, the Company has not encountered material costs as a result of such indemnification obligations and has not accrued any related liabilities in its financial statements. In assessing whether to establish an accrual, the Company considers such factors as the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss.

14. Stockholders' Equity

Stock Repurchase Program

In February 2016, the Board of Directors authorized a \$1.0 billion share repurchase program that was effective from February 2016 through December 2018. In March 2018, the Company announced that its Board of Directors had increased its share repurchase authorization by \$416.7 million, such that the amount that was authorized and available for repurchase in 2018 was \$750.0 million. Subsequently, effective November 2018, the Board of Directors authorized an additional \$1.1 billion repurchase program through December 2021. The Company's goals for the share repurchase programs are to offset the dilution created by its employee equity compensation programs and provide the flexibility to return capital to shareholders as business and market conditions warrant.

During the years ended December 31, 2019, 2018 and 2017, the Company repurchased 4.0 million, 10.2 million and 6.9 million shares, respectively, of its common stock for \$334.5 million, \$750.0 million and \$361.2 million, respectively, pursuant to the repurchase programs described above. As of December 31, 2019, the Company had \$765.5 million available for future purchases of shares under the current repurchase program.

The Board of Directors authorized the retirement of all the outstanding shares of its treasury stock as of each of December 31, 2019, 2018 and 2017. The retired shares were returned to the number of authorized but unissued shares of the Company's common stock, and the retirement was recorded to additional paid-in capital.

15. Accumulated Other Comprehensive Loss

The following table summarizes the changes in accumulated other comprehensive loss, which is reported as a component of stockholders' equity, for the year ended December 31, 2019 (in thousands):

	Foreign Currency Translation	Net Unrealized Gains on Investments	Total
Balance as of January 1, 2019	\$ (51,904)	\$ 2,992	\$ (48,912)
Other comprehensive (loss) income	(1,020)	4,788	3,768
Balance as of December 31, 2019	\$ (52,924)	\$ 7,780	\$ (45,144)

The tax effect on accumulated unrealized gains on investments was insignificant as of December 31, 2019 and 2018. Amounts reclassified from accumulated other comprehensive loss to net income were insignificant for the year ended December 31, 2019.

16. Revenue from Contracts with Customers

The Company sells its services through a sales force located both domestically and abroad. Revenue derived from operations outside of the U.S. is determined based on the country in which the sale originated. Other than the U.S., no single country accounted for 10% or more of the Company's total revenue for any reported period. The following table summarizes revenue by geography included in the Company's consolidated statements of income for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
U.S.	\$ 1,694,211	\$ 1,683,272	\$ 1,637,198
International	1,199,406	1,031,202	851,837
Total revenue	\$ 2,893,617	\$ 2,714,474	\$ 2,489,035

While the Company sells its services through a geographically dispersed sales force, it manages its customer relationships in two divisions: the Web Division and the Media and Carrier Division. Customers are assigned to a division for relationship management purposes according to their predominant purchasing activity; however, customers may purchase solutions managed by the other division as well. The following table summarizes revenue by division included in the Company's consolidated statements of income for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Web Division	\$ 1,566,401	\$ 1,448,644	\$ 1,307,641
Media and Carrier Division	1,327,216	1,265,830	1,181,394
Total revenue	<u>\$ 2,893,617</u>	<u>\$ 2,714,474</u>	<u>\$ 2,489,035</u>

The Company reports revenue in two divisions: the Web Division and the Media and Carrier Division. Revenue by division is a customer-focused reporting view that reflects revenue from customers that are managed by the division. As the purchasing patterns and required account expertise of customers change over time, we may reassign a customer from one division to another. In 2019, the Company reassigned some customers from the Media and Carrier Division to the Web Division and revised historical results in order to reflect the most recent categorization and to provide a comparable view for all periods presented.

Most content delivery and security services represent obligations that are satisfied over time as the customer simultaneously receives and consumes the services provided by the Company. Accordingly, the majority of the Company's revenue is recognized over time, generally ratably over the term of the arrangement due to consistent monthly traffic commitments that expire each period. A small percentage of the Company's services are satisfied at a point in time, such as one-time professional services contracts, integration services, and most license sales where the primary obligation is delivery of the license at the start of the term. In these cases, revenue is recognized at a point in time of delivery or satisfaction of the performance obligation.

During the years ended December 31, 2019 and 2018, the Company recognized \$64.1 million and \$71.8 million of revenue that was included in deferred revenue as of December 31, 2018 and 2017, respectively.

As of December 31, 2019, the aggregate amount of remaining performance obligations from contracts with customers was \$2.5 billion. The Company expects to recognize approximately 70% of its remaining performance obligations as revenue over the next 12 months, with the remaining recognized thereafter. Remaining performance obligations represent the amount of the transaction price under contracts with customers that are attributable to performance obligations that are unsatisfied or partially satisfied at the reporting date. This consists of future committed revenue for monthly, quarterly or annual periods within current contracts with customers, as well as deferred revenue arising from consideration invoiced in prior periods for which the related performance obligations have not been satisfied. It excludes estimates of variable consideration such as usage-based contracts with no committed contract as well as anticipated renewed contracts.

17. Employee Benefit Plan

The Company has established a savings plan for its employees that is designed to be qualified under Section 401(k) of the Internal Revenue Code. Eligible employees are permitted to contribute to this plan through payroll deductions within statutory and plan limits. The Company contributed approximately \$16.6 million, \$16.7 million and \$15.6 million of cash to the savings plan for the years ended December 31, 2019, 2018 and 2017, respectively, under a matching program.

18. Stock-Based Compensation

Equity Plans

In May 2013, the Company's stockholders approved the Akamai Technologies, Inc. 2013 Stock Incentive Plan (as amended in 2015 and 2017, the "2013 Plan"). The 2013 Plan replaced the Akamai Technologies, Inc. 2009 Stock Incentive Plan (the "2009 Plan"), which in turn replaced the Akamai Technologies, Inc. 2006 Stock Incentive Plan, the Akamai Technologies, Inc. 2001 Stock Incentive Plan and the Akamai Technologies, Inc. 1998 Stock Incentive Plan (together with the 2009 Plan, the "Previous Plans"). The Company no longer issues equity awards under the Previous Plans, and they solely exist to satisfy outstanding equity awards previously granted under those plans. The 2013 Plan allows for the issuance of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock, restricted stock units, other stock-based awards and cash-based awards up to 21.5 million shares of common stock to employees, officers, directors, consultants and advisers of the Company. Additionally, the Company may grant up to 3.8 million shares of common stock thereunder that were available for grant under the 2009 Plan immediately prior to stockholder approval of the 2013 Plan. Any shares of common stock that are currently outstanding under the Previous Plans that are terminated, canceled, surrendered or forfeited will become available to grant under the 2013 Plan. As of December 31, 2019, the Company had reserved approximately 8.8 million shares of common stock available for future issuance of equity awards under the 2013 Plan.

The Company has assumed certain stock option plans and the outstanding stock options of companies that it has acquired ("Assumed Plans"). Stock options outstanding as of the date of acquisition under the Assumed Plans were exchanged for the Company's stock options and adjusted to reflect the appropriate conversion ratio as specified by the applicable acquisition agreement, but are otherwise administered in accordance with the terms of the Assumed Plans. Stock options under the Assumed Plans generally vest over four years and expire ten years from the date of grant.

The 1999 Employee Stock Purchase Plan ("1999 ESPP") permits eligible employees to purchase up to 1.5 million shares each June 1 and December 1, provided that the aggregate number of shares issued shall not exceed 20.0 million. The 1999 ESPP allows participants to purchase shares of common stock at a 15% discount from the fair market value of the stock as determined on specific dates at six-month intervals. During the years ended December 31, 2019, 2018 and 2017, the Company issued 0.9 million, 1.0 million and 1.1 million shares under the 1999 ESPP, respectively, with a weighted average purchase price per share of \$61.04, \$52.04 and \$40.18, respectively. Total cash proceeds from the purchase of shares under the 1999 ESPP in the years ended December 31, 2019, 2018 and 2017 were \$53.7 million, \$50.7 million and \$42.3 million, respectively. As of December 31, 2019, approximately \$5.2 million had been withheld from employees for future purchases under the 1999 ESPP.

Stock-Based Compensation Expense

The following table summarizes the components of total stock-based compensation expense included in the Company's consolidated statements of income for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Cost of revenue	\$ 22,479	\$ 21,892	\$ 20,314
Research and development	49,685	44,034	38,864
Sales and marketing	62,150	64,373	60,246
General and administrative	52,826	53,514	44,884
Total stock-based compensation	187,140	183,813	164,308
Provision for income taxes	(51,177)	(48,502)	(56,237)
Total stock-based compensation, net of taxes	\$ 135,963	\$ 135,311	\$ 108,071

In addition to the amounts of stock-based compensation reported in the table above, the Company's consolidated statements of income for the years ended December 31, 2019, 2018 and 2017 also include stock-based compensation reflected as a component of amortization of capitalized internal-use software; the additional stock-based compensation was \$30.6 million, \$25.2 million and \$17.5 million, respectively, before taxes.

The Company uses the Black-Scholes option pricing model to determine the fair value of the Company's stock option awards. This model requires the input of subjective assumptions, including expected stock price volatility and the estimated term of each award. The estimated fair value of the Company's stock-based awards, less expected forfeitures, is amortized over the awards' vesting period on a straight-line basis. Expected volatilities are based on the Company's historical stock price volatility and implied volatility from traded options in its stock. The Company uses historical data to estimate the expected term of options granted within the valuation model. The risk-free interest rate for periods commensurate with the expected term of the option is based on the U.S. Treasury yield rate in effect at the time of grant. The expected dividend yield is zero, as the Company currently does not pay a dividend and does not anticipate doing so in the future.

The grant-date fair values of awards granted under the 1999 ESPP during the years ended December 31, 2019, 2018 and 2017 were estimated using the Black-Scholes option pricing model with the following weighted-average assumptions:

	2019	2018	2017
Expected term (in years)	0.5	0.5	0.5
Risk-free interest rate	2.3%	1.9%	1.0%
Expected volatility	29.6%	31.2%	35.8%
Dividend yield	—%	—%	—%

For the years ended December 31, 2019, 2018 and 2017, the weighted average fair value of awards granted under the 1999 ESPP was \$20.90 per share, \$15.29 per share and \$13.60 per share, respectively.

As of December 31, 2019, total pre-tax unrecognized compensation cost for stock options, restricted stock units, deferred stock units and shares of common stock issued under the 1999 ESPP was \$267.6 million. The expense is expected to be recognized through 2023 over a weighted average period of 1.7 years.

Stock Options

The following table summarizes stock option activity during the year ended December 31, 2019:

	Shares (in thousands)	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at January 1, 2019	120	\$ 37.33		
Exercised	(93)	39.23		
Forfeited	(7)	44.88		
Outstanding at December 31, 2019	20	\$ 26.23	1.21	\$ 1,230
Exercisable at December 31, 2019	20	\$ 26.23	1.21	\$ 1,230
Vested or expected to vest December 31, 2019	20	\$ 26.23	1.21	\$ 1,230

The total pre-tax intrinsic value of options exercised during the years ended December 31, 2019, 2018 and 2017 was \$3.9 million, \$8.2 million and \$12.3 million, respectively. The total fair value of options vested for the years ended December 31, 2019 and 2018 was insignificant. The total fair value of options vested for the years ended December 31, 2017 was \$1.2 million.

The aggregate intrinsic value in the preceding table represents the total pre-tax intrinsic value, based on the Company's closing stock price of \$86.38 on December 31, 2019, that would have been received by the option holders had all option holders exercised their "in-the-money" options as of that date. The total number of shares issuable upon the exercise of "in-the-money" options exercisable as of December 31, 2019 was 20,000.

Deferred Stock Units

The Company has granted deferred stock units ("DSUs") to non-employee members of its Board of Directors. Each DSU represents the right to receive one share of the Company's common stock upon vesting. The holder may elect to defer receipt of the vested shares of stock represented by the DSU for a period of at least one year but not more than ten years from the grant date. DSUs vest 100% on the first anniversary of the grant date. If a director has completed one year of Board service, vesting of 100% of the DSUs held by such director will accelerate at the time of his or her departure from the Board.

The following table summarizes the DSU activity for the year ended December 31, 2019:

	Units (in thousands)	Weighted Average Grant Date Fair Value
Outstanding at January 1, 2019	171	\$ 49.54
Granted	25	76.62
Vested and distributed	(97)	48.51
Outstanding at December 31, 2019	99	\$ 57.50

The total pre-tax intrinsic value of DSUs that were vested and distributed during the years ended December 31, 2019, 2018 and 2017 was \$7.7 million, \$3.0 million and \$1.5 million, respectively. The total fair value of DSUs that were vested and distributed during the years ended December 31, 2019, 2018 and 2017 was \$4.9 million, \$1.8 million and \$1.7 million, respectively. The grant-date fair value is calculated based upon the Company's closing stock price on the date of grant. As of December 31, 2019, 25,000 DSUs were unvested, with an aggregate intrinsic value of approximately \$2.2 million and a weighted average remaining contractual life of approximately 0.4 years. These units are expected to vest in May 2020.

Restricted Stock Units

The following table summarizes the different types of restricted stock units ("RSUs") granted by the Company during the year ended December 31, 2019 (in thousands):

	December 31, 2019
RSUs with service-based vesting conditions	2,769
RSUs with market-based vesting conditions	105
RSUs with performance-based vesting conditions	327
Total	<u>3,201</u>

RSUs represent the right to receive one share of the Company's common stock upon vesting. RSUs are granted at the discretion of the Board of Directors, a committee thereof or, subject to defined limitations, the Chief Executive Officer of the Company, acting as a committee of one director, to whom such authority has been delegated. The Company has issued RSUs that vest based on the passage of time assuming continued service with the Company, RSUs that vest only upon the achievement of defined performance metrics tied primarily to revenue and earnings targets, and RSUs that vest based upon total shareholder return ("TSR") measured against the benchmark TSR of a peer group.

For RSUs with service-based vesting conditions, the fair value is calculated based upon the Company's closing stock price on the date of grant, and the stock-based compensation expense is being recognized over the vesting period. Most RSUs with service-based vesting provisions vest in installments over a three- or four-year period following the grant date.

The Company uses the Monte Carlo simulation model to determine the fair value of the Company's RSUs based on TSR. This model requires the input of assumptions, including the estimated term of each award, the risk-free interest rate, historical stock price volatility of the Company's shares and historical stock price volatility of peer-company shares. The grant-date fair values of the TSR-based RSUs granted during the years ended December 31, 2019, 2018 and 2017 were estimated using a Monte Carlo simulation model with the following assumptions:

	2019	2018	2017
Expected term (in years)	3.0	3.0	3.0
Risk-free interest rate	2.5%	2.3%	1.4%
Akamai historical share price volatility	32.8%	35.5%	33.2%
Average volatility of peer-company share price	27.0%	26.3%	27.1%

For the years ended December 31, 2019, 2018 and 2017, management measured compensation expense for performance-based RSUs based upon a review of the Company's expected achievement against specified financial performance targets. Such compensation cost is being recorded using a graded-vesting method for each series of grants of performance-based RSUs, to the extent management has deemed that such awards are probable of vesting based upon the expected achievement against the specified targets. On a periodic basis, management reviews the Company's expected performance and adjusts the compensation cost, if needed, at such time.

The following table summarizes the RSU activity for the year ended December 31, 2019:

	Units (in thousands)	Weighted Average Grant Date Fair Value
Outstanding at January 1, 2019	5,612	\$ 62.25
Granted	3,201	72.30
Vested	(3,086)	63.36
Forfeited	(654)	67.34
Outstanding at December 31, 2019	<u>5,073</u>	<u>\$ 70.43</u>

The total pre-tax intrinsic value of RSUs that vested during the years ended December 31, 2019, 2018 and 2017 was \$189.4 million, \$173.6 million and \$168.6 million, respectively. The total fair value of RSUs that vested during the years ended December 31, 2019, 2018 and 2017 was \$195.5 million, \$178.3 million and \$173.6 million, respectively. The grant-date fair value of each RSU is calculated based upon the Company's closing stock price on the date of grant. As of December 31, 2019, 5.1 million RSUs were outstanding and unvested, with an aggregate intrinsic value of \$438.4 million and a weighted average remaining vesting period of approximately 1.65 years. These RSUs are expected to vest on various dates through 2023.

19. Income Taxes

The components of income before provision for income taxes were as follows for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
U.S.	\$ 24,253	\$ (27,379)	\$ 92,588
Foreign	508,228	370,468	221,604
Income before provision for income taxes	<u>\$ 532,481</u>	<u>\$ 343,089</u>	<u>\$ 314,192</u>

The provision for income taxes consisted of the following for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Current tax (benefit) provision:			
Federal	\$ (22,704)	\$ (29,982)	\$ 41,090
State	3,835	8,085	6,336
Foreign	71,286	64,274	51,244
Deferred tax (benefit) provision:			
Federal	(13,987)	5,954	(24,136)
State	(12,212)	701	21,689
Foreign	4,968	(7,140)	(4,367)
Change in valuation allowance	22,164	2,824	(430)
Total	<u>\$ 53,350</u>	<u>\$ 44,716</u>	<u>\$ 91,426</u>

For the year ended December 31, 2017, income taxes incurred on intercompany sales were deferred on the balance sheet and amortized into earnings over the economic life of the intellectual property that was sold. Beginning in 2018, all income taxes incurred on intercompany sales are included in the current tax provision.

The Company's effective tax rate differed from the U.S. federal statutory tax rate as follows for the years ended December 31, 2019, 2018 and 2017:

	2019	2018	2017
U.S. federal income tax rate	21.0 %	21.0 %	35.0 %
State taxes	1.0	1.2	1.5
Share-based compensation	0.3	1.0	3.7
U.S. federal, state and foreign research and development credits	(6.0)	(7.6)	(7.0)
Foreign earnings	(6.1)	(6.0)	(7.9)
Domestic production activities deduction	—	—	(0.7)
Impact of TCJA, net	—	(0.8)	6.4
Impact of acquisition-related uncertain tax position	—	—	(2.9)
Release of uncertain tax position reserve	(5.9)	(1.9)	(0.5)
Intercompany sale of intellectual property	1.9	3.3	—
Valuation allowance	4.2	0.8	—
Other	(0.4)	2.0	1.5
	<u>10.0 %</u>	<u>13.0 %</u>	<u>29.1 %</u>

In December 2017 the TCJA was enacted, making significant changes to the U.S. Internal Revenue Code. Changes included a corporate income tax rate decrease from 35.0% to 21.0%, the implementation of a modified territorial tax system, a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017 and the repeal of the domestic production activities deduction, among other items.

The components of the net deferred tax assets and liabilities and the related valuation allowance as of December 31, 2019 and 2018 were as follows (in thousands):

	2019	2018
Accrued bonus	\$ 25,487	\$ 24,093
Deferred revenue	3,874	4,188
Deferred rent	—	11,245
Operating lease liability	147,375	—
Stock-based compensation	20,606	20,345
NOLs	25,851	15,743
Unrealized losses	1,529	1,039
Tax credit carryforwards	87,305	70,235
License income	—	2,245
Convertible senior notes interest	22,506	4,724
Other	12,501	11,759
Deferred tax assets	<u>347,034</u>	<u>165,616</u>
Depreciation and amortization	(16,896)	(23,912)
Acquired intangible assets	(51,758)	(45,773)
Operating lease ROU asset	(132,949)	—
Deferred commissions	(14,843)	(14,232)
Internal-use software development costs capitalized	(57,201)	(63,586)
Deferred tax liabilities	<u>(273,647)</u>	<u>(147,503)</u>
Valuation allowance	(26,046)	(2,824)
Net deferred tax assets	<u>\$ 47,341</u>	<u>\$ 15,289</u>

Valuation allowances will be recognized on deferred tax assets if it is more-likely-than-not that some or all of the deferred tax assets will not be utilized. In measuring deferred tax assets, the Company considers all available evidence, both positive and negative, to determine whether a valuation allowance is needed. As of December 31, 2019, the Company recorded a \$26.0

million valuation allowance against deferred tax assets related to tax credits and state NOLs in which it is more-likely-than-not that such attributes will expire prior to utilization. The change in the valuation allowance during 2019 was \$23.2 million.

The table below summarizes the Company's NOL and tax credit carryforwards in federal, state and foreign jurisdictions as of December 31, 2019 and 2018 (in thousands, except for years):

	2019	2018	Expirations at Various Dates Through:
NOL carryforwards:			
Federal	\$ 87,500	\$ 52,500	2037
State	20,500	20,500	2039
Foreign	11,600	8,500	—
Federal and state research and development tax credit and other credit carryforwards	88,570	88,200	2034

The Company's U.S. federal and state NOL carryforwards relate to acquisitions completed in 2019, 2017 and 2012.

As of December 31, 2019, accumulated earnings outside the U.S. totaled \$1.1 billion, the majority of which have been taxed due to the one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings and the tax on global intangible low taxed income ("GILTI") required by the TCJA. No provision for U.S. income and foreign withholding taxes has been provided for any remaining undistributed foreign earnings not subject to tax under the TCJA, or any additional basis differences inherent in these entities, as these amounts continue to be indefinitely reinvested. Determination of the amount of the unrecognized deferred tax liability on outside basis differences is not practicable because of the complexity of laws and regulations, the varying tax treatment of alternative repatriation scenarios, and the variation due to multiple potential assumptions relating to the timing of any future repatriation.

The following is a roll forward of the Company's unrecognized tax benefits for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Balance at beginning of year	\$ 64,892	\$ 85,845	\$ 69,117
Gross increases – tax positions of prior periods	74	2,704	2,692
Gross increases – current period tax positions	2,006	3,021	27,163
Gross decreases – tax positions of prior periods	(5,201)	(15,287)	(277)
Gross decreases – lapse of applicable statute of limitations	(28,672)	(6,186)	(12,850)
Gross decreases – settlements	(5,740)	(5,205)	—
Balance at end of year	\$ 27,359	\$ 64,892	\$ 85,845

As of December 31, 2019, 2018 and 2017, the Company had approximately \$32.6 million, \$67.8 million and \$90.7 million of unrecognized tax benefits, respectively. Total interest and penalties for unrecognized tax benefits include \$7.8 million, \$11.8 million and \$10.7 million as of December 31, 2019, 2018 and 2017, respectively. Interest and penalties related to unrecognized tax benefits are recorded in the provision for income taxes and were \$1.1 million, \$1.3 million and \$2.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. The amount of unrecognized tax benefits that, if recognized, would impact the effective income tax rate is approximately \$32.6 million.

As of December 31, 2019, it is reasonably possible that \$2.8 million of unrecognized tax benefits may be recognized within the next 12 months due to the expiration of local statutes of limitations. Certain U.S. state and foreign income tax returns from 2011 through 2017 are currently under audit. The Company has reserved for those positions that are not more-likely-than-not to be sustained.

The Company is also involved in litigation related to certain adverse audit determinations. In the second quarter of 2018, the Company filed an appeal with the Massachusetts Appellate Tax Board contesting the adverse audit findings related to certain tax benefits and exemptions. The appeal hearing was held in late 2019 and the Company awaits the judge's determination. The Company has determined that it is more-likely-than-not that it will prevail, and no reserve has been

recorded related to these controversies. However, over the next 12 months, the Company's current assumptions and positions could change based on audit determinations and other events impacting its analysis. Such events, if resolved unfavorably, could significantly impact the Company's effective income tax rate and results of operations. The Company has estimated that an adverse ruling related to its Massachusetts controversy could result in an gross income tax charge of approximately \$35.0 million, which could be partially offset by certain state tax credits of \$25.0 million which are not currently benefited as a result of the Company's valuation allowance assessment.

20. Net Income per Share

Basic net income per share is computed using the weighted average number of common shares outstanding during the applicable period. Diluted net income per share is computed using the weighted average number of common shares outstanding during the period, plus the dilutive effect of potential common stock. Potential common stock consists of shares issuable pursuant to stock options, RSUs, DSUs, convertible senior notes and warrants issued by the Company. The dilutive effect of outstanding awards and convertible securities is reflected in diluted earnings per share by application of the treasury stock method.

The following table sets forth the components used in the computation of basic and diluted net income per share for the years ended December 31, 2019, 2018 and 2017 (in thousands, except per share data):

	2019	2018	2017
Numerator:			
Net income	\$ 478,035	\$ 298,373	\$ 222,766
Denominator:			
Shares used for basic net income per share	162,706	167,312	171,559
Effect of dilutive securities:			
Stock options	68	132	260
RSUs and DSUs	1,799	1,744	892
Convertible senior notes	—	—	—
Warrants related to issuance of convertible senior notes	—	—	—
Shares used for diluted net income per share	164,573	169,188	172,711
Basic net income per share	\$ 2.94	\$ 1.78	\$ 1.30
Diluted net income per share	\$ 2.90	\$ 1.76	\$ 1.29

For the years ended December 31, 2019, 2018 and 2017, certain potential outstanding shares from stock options, service-based RSUs, convertible notes and warrants were excluded from the computation of diluted net income per share because the effect of including these items was anti-dilutive. Additionally, certain performance-based RSUs were excluded from the computation of diluted net income per share because the underlying performance conditions for such RSUs had not been met as of these dates. The number of potentially outstanding shares excluded from the computation of diluted net income per share for the years ended December 31, 2019, 2018 and 2017 (in thousands):

	2019	2018	2017
Stock options	—	—	9
Service-based RSUs	763	899	3,258
Market-and performance-based RSUs	1,349	1,509	1,054
Convertible senior notes	21,991	19,797	7,704
Warrants related to issuance of convertible senior notes	21,991	19,797	7,704
Total shares excluded from computation	46,094	42,002	19,729

21. Akamai Foundation Endowment

During the second quarter of 2018, the Company contributed \$50.0 million to the Akamai Foundation, a non-profit organization founded by certain current and former employees of the Company in 2000 (the "Foundation"). The Company has

the right to appoint the directors of the Foundation but receives no economic benefit from the Foundation's initiatives. The contribution is intended to be a one-time endowment. The associated expense is included in general and administrative expenses in the consolidated statements of income for the year ended December 31, 2018. The Foundation is a private corporate foundation with a mission of supporting youth education, with a focus on mathematics, as well as other charitable causes.

22. Segment and Geographic Information

The Company's chief operating decision-maker is the chief executive officer and the executive management team. As of December 31, 2019, the Company operated in one industry segment: providing cloud services for securing, delivering and optimizing content and business applications over the Internet. The Company is not organized by market and is managed and operated as one business. A single management team that reports to the chief executive officer comprehensively manages the entire business. The Company does not operate any material separate lines of business or separate business entities with respect to its services. Accordingly, the Company does not accumulate discrete financial information with respect to separate divisions and does not have separate operating or reportable segments.

The Company deploys its servers into networks worldwide. As of December 31, 2019, the Company had approximately \$482.7 million and \$303.7 million of net property and equipment, excluding internal-use software, located in the U.S. and foreign locations, respectively. As of December 31, 2018, the Company had approximately \$331.5 million and \$235.7 million of net property and equipment, excluding internal-use software, located in the U.S. and foreign locations, respectively.

The Company sells its services and licenses through a sales force located both domestically and abroad. Revenue derived from operations outside of the U.S. is determined based on the country in which the sale originated and was \$1,199.4 million, \$1,031.2 million and \$855.0 million for the years ended December 31, 2019, 2018 and 2017, respectively. Other than the U.S., no single country accounted for 10% or more of the Company's total revenue for any reported period.

23. Quarterly Financial Results (unaudited)

(in thousands, except per share data)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Year ended December 31, 2019:				
Revenue	\$ 706,508	\$ 705,074	\$ 709,912	\$ 772,123
Cost of revenue (exclusive of amortization of acquired intangible assets)	240,743	242,193	246,938	257,750
Net income	107,130	113,915	137,890	119,100
Basic net income per share	0.66	0.70	0.85	0.74
Diluted net income per share	0.65	0.69	0.84	0.73
Year ended December 31, 2018:				
Revenue	\$ 688,724	\$ 662,759	\$ 669,628	\$ 713,363
Cost of revenue (exclusive of amortization of acquired intangible assets)	234,825	235,487	239,246	243,927
Net income	53,714	43,061	107,583	94,015
Basic net income per share	0.32	0.25	0.65	0.58
Diluted net income per share	0.31	0.25	0.64	0.57

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer (our principal executive officer and principal financial officer, respectively), evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2019. The term “disclosure controls and procedures,” as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company’s management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosures. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Annual Report on Internal Control over Financial Reporting

Our management, with the participation of our Chief Executive Officer and Chief Financial Officer, is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rules 13a-15(f) or 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, the company’s principal executive and principal financial officers and effected by the company’s board of directors, management and other personnel, 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 and includes those policies and procedures that:

- pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the company;
- 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
- 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.

To assist management, we have established an internal audit function to verify and monitor our internal controls and procedures. Because of its inherent limitations, however, internal control over financial reporting may not prevent or detect misstatements. 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.

Our management assessed the effectiveness of the Company’s internal control over financial reporting as of December 31, 2019. In making this assessment, our management 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, management, with the participation of our Chief Executive Officer and Chief Financial Officer, concluded that, as of December 31, 2019, our internal control over financial reporting was effective based on those criteria at the reasonable assurance level.

The effectiveness of the Company’s internal control over financial reporting as of December 31, 2019 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in its report, which is included in Item 8 of this annual report on Form 10-K.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting occurred during the fourth quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

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

The complete response to this Item regarding the backgrounds of our executive officers and directors and other information required by Items 401, 405 and 407 of Regulation S-K will be contained in our definitive proxy statement for our 2020 Annual Meeting of Stockholders under the sections captioned “Executive Compensation Matters,” “Delinquent Section 16(a) Reports” and “Corporate Governance Highlights” and is incorporated by reference herein.

Our executive officers and directors and their positions as of February 28, 2020, are as follows:

Name	Position
F. Thomson Leighton	Chief Executive Officer and Director (Principal Executive Officer)
Edward McGowan	Chief Financial Officer (Principal Financial and Accounting Officer)
Aaron Ahola	Executive Vice President and General Counsel
Robert Blumofe	Executive Vice President – Platform and GM Enterprise Division
Adam Karon	Executive Vice President and GM Media and Carrier Divisions
Rick McConnell	President and GM Web Division
Anthony Williams	Executive Vice President and Chief Human Resources Officer
Monte E. Ford	Director
Jill A. Greenthal	Director
Daniel R. Hesse	Director
Peter T. Killalea	Director
Jonathan F. Miller	Director
Madhu Ranganathan	Director
Frederic V. Salerno	Director
Bernardus Verwaayen	Director
William R. Wagner	Director

We have adopted a written code of business ethics, as amended, that applies to our principal executive officer, principal financial and accounting officer or persons serving similar functions and all of our other employees and members of our Board of Directors. The text of our amended code of ethics is available on our website at www.akamai.com. If we amend, or grant a waiver under, our code of business ethics that applies to our principal executive officer, principal financial and accounting officer, or persons performing similar functions, we intend to post information about such amendment or waiver on our website at www.akamai.com.

Item 11. Executive Compensation

The information required by this Item is incorporated by reference herein to our definitive proxy statement for our 2020 Annual Meeting of Stockholders under the sections captioned “Executive Compensation Matters,” “Corporate Governance Highlights,” “Compensation Committee Interlocks and Insider Participation” and “Director Compensation.”

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

The information required by this Item is incorporated by reference herein to our definitive proxy statement for our 2020 Annual Meeting of Stockholders under the sections captioned “Executive Compensation Matters,” “Security Ownership of Certain Beneficial Owners and Management” and “Securities Authorized for Issuance Under Equity Compensation Plans.”

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

The information required by this Item is incorporated by reference herein to our definitive proxy statement for our 2020 Annual Meeting of Stockholders under the sections captioned “Certain Relationships and Related Party Transactions,” “Corporate Governance Highlights” and “Compensation Committee Interlocks and Insider Participation.”

Item 14. Principal Accounting Fees and Services

The information required by this Item is incorporated by reference herein to our definitive proxy statement for our 2020 Annual Meeting of Stockholders under the section captioned “Ratification of Selection of Independent Auditors.”

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Documents Filed as Part of this Annual Report on Form 10-K

1. Financial Statements (included in Item 8 of this Annual Report on Form 10-K):
 - Report of Independent Registered Public Accounting Firm
 - Consolidated Balance Sheets as of December 31, 2019 and 2018
 - Consolidated Statements of Income for the years ended December 31, 2019, 2018 and 2017
 - Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018 and 2017
 - Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017
 - Consolidated Statements of Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017
 - Notes to Consolidated Financial Statements
2. Financial Statement Schedules

Financial statements schedules are omitted as they are either not required or the information is otherwise included in the consolidated financial statements.

(b) Exhibits

EXHIBIT INDEX

3.1(A)	Amended and Restated Certificate of Incorporation of Akamai Technologies, Inc., as amended
3.2	Amended and Restated Bylaws of Akamai Technologies, Inc., as amended
4.1(B)	Specimen common stock certificate
4.2(C)	Indenture (including form of Notes) with respect to Akamai's 0.125% Convertible Senior Notes due 2025, dated as of May 21, 2018, between Akamai and U.S. Bank National Association, as trustee
4.3(D)	Indenture (including form of Notes) with respect to the Registrant's 0.375% Convertible Senior Notes due September 1, 2027, dated as of August 16, 2019, between the Registrant and U.S. Bank National Association, as trustee
4.4	Description of Registrant's Securities Registered Under Section 12 of the Exchange Act
10.1(E)@	Amended and Restated 1999 Employee Stock Purchase Plan of the Registrant
10.2(F)@	Amendment to Amended and Restated 1999 Employee Stock Purchase Plan of the Registrant

10.3(G)@	2009 Akamai Technologies, Inc. Stock Incentive Plan
10.4(H)@	2013 Akamai Technologies, Inc. Stock Incentive Plan, as amended
10.5(I)	Blaze Software Inc. Stock Option Plan
10.6(J)	Cotendo, Inc. Amended and Restated 2008 Stock Plan
10.7(K)@	Form of Restricted Stock Unit Agreement for use under the 2013 Stock Incentive Plan, as amended (time vesting)
10.8(L)@	Form of Restricted Stock Unit Agreement for use under the 2013 Stock Incentive Plan (performance vesting)
10.9(L)@	Form of Stock Option Agreement for use under the 2013 Stock Incentive Plan
10.10(L)	Form of Deferred Stock Unit Agreement for use under the 2013 Stock Incentive Plan
10.11(M)@	Form of Performance-Based Vesting Restricted Stock Unit Agreement with Retirement Provision
10.12(N)@	Non-Employee Director Compensation Plan
10.13 (O)@	Form of Restricted Stock Unit Agreement Agreement for use under the 2013 Stock Incentive Plan (2019)
10.14@	Summary of the Registrant's Compensatory Arrangements with Executive Officers
10.15@	Form Executive Bonus Plan
10.16(P)@	Akamai Technologies, Inc. Executive Severance Pay Plan, as amended
10.17(Q)@	Form of Executive Change in Control and Severance Agreement
10.18(R)@	Akamai Technologies, Inc. Policy on Departing Director Compensation
10.19(S)@	Akamai Technologies, Inc. U.S. Non-Qualified Deferred Compensation Plan
10.20(T)@	Employment Letter Agreement between the Registrant and F. Thomson Leighton dated February 25, 2013
10.21(Q)@	Amendment to Employment Letter Agreement between the Registrant and F. Thomson Leighton dated November 12, 2015
10.22(U)@	Transition Agreement dated February 25, 2019 between the Registrant and James Benson
10.23(P)@	Addendum to the Transition Agreement dated September 27, 2019 between the Registrant and James Benson
10.24(V)	Indenture of Lease for 145 Broadway, Cambridge, Massachusetts dated November 7, 2016
10.25(V)	Must-Take Premises and Right of First Offer Agreement among the Registrant, Boston Properties Limited Partnership and the Trustees of Ten Cambridge Center Trust dated November 7, 2016
10.26(W)	150 Broadway Real Property Lease Dated December 20, 2017
10.27(X)†	Exclusive Patent and Non-Exclusive Copyright License Agreement, dated as of October 26, 1998, between the Registrant and Massachusetts Institute of Technology.
10.28(Y)	Credit Agreement by and among Akamai Technologies, Inc., the financial institutions identified therein as lenders, JPMorgan Chase Bank, N.A., as Administrative Agent, and the other agents and arrangers party thereto, dated May 10, 2018.
10.29(C)	Form of Call Option Confirmation between Akamai and each Option Counterparty.
10.30(C)	Form of Warrant Confirmation between Akamai and each Option Counterparty.
10.31(D)	Form of Call Option Confirmation between the Registrant and each Option Counterparty.
10.32(D)	Form of Warrant Confirmation between the Registrant and each Option Counterparty.
21.1	Subsidiaries of the Registrant
23.1	Consent of Independent Registered Public Accounting Firm

31.1	Certification of Chief Executive Officer pursuant to Rule 13a- 14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
31.2	Certification of Chief Financial Officer pursuant to Rule 13a- 14(a)/Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	Inline XBRL Instance Document – The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.*
101.SCH	Inline XBRL Taxonomy Extension Schema Document*
101.CAL	Inline XBRL Taxonomy Calculation Linkbase Document*
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document*
101.LAB	Inline XBRL Taxonomy Label Linkbase Document*
101.PRE	Inline XBRL Taxonomy Presentation Linkbase Document*
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101,.INS)

- (A) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 18884226) filed with the Commission on June 6, 2018.
- (B) Incorporated by reference to the Registrant’s Registration Statement on Form S-1, as amended, filed with the Commission on October 13, 1999.
- (C) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 18852548) filed with the Commission on May 22, 2018.
- (D) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 191033874) filed with the Commission on August 16, 2019.
- (E) Incorporated by reference to the Registrant’s Annual Report on Form 10-K (File No. 000-27275, 06691330) filed with the Commission on March 16, 2006.
- (F) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q (File No. 000-27275, 08823347) filed with the Commission on May 12, 2008.
- (G) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 11865051) filed with the Commission on May 23, 2011.
- (H) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 19835721) filed with the Commission on May 17, 2019.
- (I) Incorporated by reference to the Registrant’s Registration Statement on Form S-8 filed with the Commission on February 29, 2012.
- (J) Incorporated by reference to the Registrant’s Registration Statement on Form S-8 filed with the Commission on March 14, 2012.
- (K) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q (File No. 000-27275, 19810440) filed with the Commission on May 9, 2019.
- (L) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q (File No. 000-27275, 131025074) filed with the Commission on August 9, 2013.
- (M) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 15585212) filed with the Commission on February 6, 2015.
- (N) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q (File No. 000-27275, 191009630) filed with the Commission on August 8, 2019.
- (O) Incorporated by reference to the Registrant’s Quarterly Report on Form 10-Q (File No. 000-27275, 19810440) filed with the Commission on May 9, 2019.
- (P) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 191132693) filed with the Commission on October 2, 2019.
- (Q) Incorporated by reference to the Registrant’s Current Report on Form 8-K (File No. 000-27275, 151238671) filed with the Commission on November 17, 2015.
- (R) Incorporated by reference to the Registrant’s Annual Report on form 10-K (File No. 000-27275, 17647667) filed with the Commission on February 28, 2017.

- (S) Incorporated by reference to the Registrant's Quarterly Report on Form 10-Q (File No. 000-27275, 15850176) filed with the Commission on May 11, 2015.
- (T) Incorporated by reference to the Registrant's Annual Report on Form 10-K (File No. 000-27275, 13657899) filed with the Commission on March 1, 2013.
- (U) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-27275, 19638297) filed with the Securities and Exchange Commission on February 27, 2019.
- (V) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-27275, 161988699) filed with the Commission on November 10, 2016.
- (W) Incorporated by reference to the Registrant's Annual Report on Form 10-K (File No. 000-27275, 18654889) filed with the Commission on March 1, 2018.
- (X) Incorporated by reference to the Registrant's Registration Statement on Form S-1 filed with the Commission on September 27, 1999.
- (Y) Incorporated by reference to the Registrant's Current Report on Form 8-K (File No. 000-27275, 18837347) filed with the Commission on May 15, 2018.

@ Management contract or compensatory plan or arrangement filed as an exhibit to this Annual Report on Form 10-K pursuant to Item 15(b) of this Annual Report.

† Confidential Treatment has been granted as to certain portions of this Exhibit. Such portions have been omitted and filed separately with the Securities and Exchange Commission.

* Submitted electronically herewith.

(c) Not applicable.

Item 16. Form 10-K Summary

None.

Amendment No. 1 to the
AMENDED AND RESTATED
BY-LAWS
OF
AKAMAI TECHNOLOGIES, INC.
Effective June 5, 2018

Sections 2.3 through 2.6 of Article II of these Amended and Restated By-laws are hereby amended by deleting such sections in their entirety and substituting therefor the following:

2.3 **Classes of Directors.** Until the election of directors at the annual meeting scheduled to be held in 2021, the Board of Directors shall be and is divided into classes, with directors in each class having the terms of office specified in Section 2.4. Commencing with the election of directors at the annual meeting scheduled to be held in 2021, the classification of the Board of Directors shall cease, and directors shall thereupon be elected for a term expiring at the next annual meeting of stockholders.

2.4 **Terms of Office.** Each director shall serve for a term ending at the election of directors at the third annual meeting following the annual meeting at which such director was elected; provided, that commencing with the election of directors at the annual meeting scheduled to be held in 2019, the successor of each director whose term expires at such meeting shall be elected for a term expiring at the annual meeting scheduled to be held in 2020; for the election of directors at the annual meeting scheduled to be held in 2020, the successor of each director whose term expires at such meeting shall be elected for a term expiring at the annual meeting scheduled to be held in 2021; and for the election of directors at the annual meeting scheduled to be held in 2021 and for the election of directors at each annual meeting thereafter, each director shall be elected for a term expiring at the next succeeding annual meeting. The term of each director shall be subject to the election and qualification of his or her successor and to his or her earlier death, resignation or removal.

2.5 **Allocation of Directors Among Classes in the Event of Increases or Decreases in the Number of Directors.** Until the election of directors at the annual meeting scheduled to be held in 2021, in the event of any increase or decrease in the authorized number of directors, (i) each director then serving as such shall nevertheless continue as a director of the class of which he or she is a member and (ii) the newly created or eliminated directorships resulting from such increase or decrease shall be apportioned by the Board of Directors among the classes of directors.

2.6 **Vacancies.** Any vacancy in the Board of Directors, however occurring, or any newly created directorship resulting from an increase in the authorized number of directors, shall be filled only by a vote of a majority of the directors then in office,

although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of his or her predecessor in office, and, until the election of directors at the annual meeting scheduled to be held in 2021, a director chosen to fill a newly-created directorship resulting from an increase in the number of directors shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of a successor and until such director's earlier death, resignation or removal.

Section 2.12 of Article II of these Amended and Restated By-laws is hereby amended by deleting such section in its entirety and substituting therefor the following:

2.12 Quorum. A majority of the directors at any time in office shall constitute a quorum for the transaction of business; provided, however, that in no case shall less than one-third (1/3) of the number so fixed in accordance with the Certificate of Incorporation constitute a quorum. In the absence of a quorum at any such meeting, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

Section 2.15 of Article II of these Amended and Restated By-laws is hereby amended by deleting such section in its entirety and substituting therefor the following:

2.15 Removal. Until the election of directors at the annual meeting scheduled to be held in 2021, directors of the corporation may be removed only for cause by the affirmative vote of the holders of at least two-thirds of the shares of the capital stock of the corporation issued and outstanding and entitled to vote generally in the election of directors. Thereafter, any director of the corporation may be removed, with or without cause, by the affirmative vote of the holders of a majority of the shares of the capital stock of the corporation issued and outstanding and entitled to vote generally in the election of such director.

BY ORDER OF THE BOARD OF DIRECTORS

Dated June 5, 2008

Attested:

/s/ Aaron S. Ahola

Aaron S. Ahola, Corporate Secretary

AMENDED AND RESTATED
BY-LAWS
OF
AKAMAI TECHNOLOGIES, INC.

ARTICLE 1 - Stockholders

1.1 Place of Meetings. All meetings of stockholders shall be held at such place within or without the State of Delaware as may be designated from time to time by the Board of Directors, the Chairman of the Board or the President or, if not so designated, at the registered office of the corporation.

1.2 Annual Meeting. The annual meeting of stockholders for the election of directors and for the transaction of such other business as may properly be brought before the meeting shall be held on a date to be fixed by the Board of Directors, the Chairman of the Board or the President at the time and place to be fixed by the Board of Directors, the Chairman of the Board or the President and stated in the notice of the meeting. The corporation may postpone, reschedule or cancel any previously scheduled annual meeting of stockholders.

1.3 Special Meetings. Special meetings of stockholders may be called at any time only by the Chairman of the Board of Directors, the President or the Board of Directors. Business transacted at any special meeting of stockholders shall be limited to matters relating to the purpose or purposes stated in the notice of meeting. The corporation may postpone, reschedule or cancel any previously scheduled special meeting of stockholders.

1.4 Notice of Meetings. Except as otherwise provided by law, the Certificate of Incorporation or these By-Laws, notice of each meeting of stockholders, whether annual or special, shall be given not less than ten nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting. Without limiting the manner by which notice otherwise may be given to stockholders, any notice shall be effective if given by a form of electronic transmission consented to (in a manner consistent with the General Corporation Law of the State of Delaware) by the stockholder to whom the notice is given. The notices of all meetings shall state the place, date and hour of the meeting and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting. The notice of a special meeting shall state, in addition, the purpose or purposes for which the meeting is called. If mailed, notice is given when deposited in the United States mail, postage prepaid, directed to the stockholder at the stockholder's address as it appears on the records of the corporation. If notice is given by electronic transmission, such notice shall be deemed given at the time specified in Section 232 of the General Corporation Law of the State of Delaware.

1.5 Voting List. The officer who has charge of the stock ledger of the corporation shall prepare, at least ten days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting, arranged in alphabetical order, and showing the address of each stockholder and the number of shares registered in the name of each stockholder. Such list shall be open to the examination of any stockholder, for any purpose germane to the meeting, for a period of at least ten days prior to the meeting (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of meeting or (ii) during ordinary business hours at the principal place of business of the corporation. The list of stockholders entitled to vote at the meeting shall also be produced and kept at the time and place of the meeting during the whole time of the meeting, and may be examined

by any stockholder who is present. Except as otherwise provided by law, the stock ledger shall be the only evidence as to who are the stockholders entitled to examine the list of stockholders required by this Section 1.5 or to vote in person or by proxy at any meeting of stockholders.

1.6 Quorum. Except as otherwise provided by law, the Certificate of Incorporation or these By-Laws, the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at the meeting, present in person or represented by proxy, shall constitute a quorum for the transaction of business.

1.7 Adjournments. Any meeting of stockholders may be adjourned to any other time and to any other place at which a meeting of stockholders may be held under these By-Laws by the stockholders present or represented at the meeting and entitled to vote, although less than a quorum, or, if no stockholder is present, by any officer entitled to preside at or to act as Secretary of such meeting. It shall not be necessary to notify any stockholder of any adjournment of less than 30 days if the time and place of the adjourned meeting are announced at the meeting at which adjournment is taken, unless after the adjournment a new record date is fixed for the adjourned meeting. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting.

1.8 Voting and Proxies. Each stockholder shall have one vote for each share of stock entitled to vote held of record by such stockholder and a proportionate vote for each fractional share so held, unless otherwise provided by law or the Certificate of Incorporation. Each stockholder of record entitled to vote at a meeting of stockholders may vote in person or may authorize another person or persons to vote or act for such stockholder by proxy executed in writing (or in such other manner permitted by the General Corporation Law of the State of Delaware) by the stockholder or such stockholder's authorized agent and delivered to the Secretary of the corporation. No such proxy shall be voted or acted upon after three years from the date of its execution, unless the proxy expressly provides for a longer period.

1.9 Action at Meeting. When a quorum is present at any meeting, the holders of a majority in voting power of the stock present or represented and voting on a matter (or if there are two or more classes or series of stock entitled to vote as separate classes, then in the case of each such class, the holders of a majority in voting power of the stock of that class present or represented and voting on a matter) shall decide any matter to be voted upon by the stockholders at such meeting, except when a different vote is required by express provision of law, the Certificate of Incorporation or these By-Laws. When a quorum is present at any meeting, for the election of directors, a nominee for director shall be elected by the stockholders at such meeting if the votes cast "for" such nominee's election exceed the votes cast "against" such nominee's election (with "abstentions", "broker non-votes" and "withheld" votes not counted as a vote either "for" or "against" that director's election); provided, that directors shall be elected by a plurality of the votes cast when a quorum is present at any meeting of stockholders for which (i) the Secretary of the corporation receives a notice that a stockholder has nominated a person for election to the Board of Directors in compliance with the advance notice requirements for stockholder nominees for director set forth in Section 1.10 of these By-laws and (ii) such nomination has not been withdrawn by such stockholder on or before the tenth business day before the corporation first mails its notice of meeting to the stockholders.

1.10 Nomination of Directors. Except for (1) any directors entitled to be elected by the holders of preferred stock, (2) any directors elected in accordance with Section 2.6 hereof by the Board of Directors to fill a vacancy or newly-created directorship or (3) as otherwise required by applicable law or stock exchange regulation, at any meeting of stockholders, only persons who are nominated in accordance with the procedures of this Section 1.10 shall be eligible for election as directors. Nomination for election to the Board of Directors of the corporation at a meeting of stockholders may be made (i) by or at the direction of the Board

of Directors or (ii) by any stockholder of the corporation who (x) timely complies with the notice procedures set forth in Section 1.10(b), (y) is a stockholder of record on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such meeting and (z) is entitled to vote at such meeting.

(a) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive offices of the corporation as follows: (i) in the case of an election of directors at an annual meeting of stockholders, not less than 70 days nor more than 90 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 20 days, or delayed by more than 70 days, from the first anniversary of the preceding year's annual meeting, a stockholder's notice must be so received not earlier than the 90th day prior to such annual meeting and not later than the close of business on the later of (A) the 70th day prior to such annual meeting and (B) the tenth day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs; or (ii) in the case of an election of directors at a special meeting of stockholders, provided that the Board of Directors, the Chairman of the Board or the President has determined, in accordance with Section 1.3, that directors shall be elected at such special meeting and provided further that the nomination made by the stockholder is for one of the director positions that the Board of Directors, the Chairman of the Board or the President, as the case may be, has determined will be filled at such special meeting, not earlier than the 90th day prior to such special meeting and not later than the close of business on the later of (x) the 70th day prior to such special meeting and (y) the tenth day following the day on which notice of the date of such special meeting was mailed or public disclosure of the date of such special meeting was made, whichever first occurs. In no event shall the adjournment or postponement of a meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

(b) The stockholder's notice to the Secretary shall set forth (A) as to each proposed nominee (1) such person's name, age, business address and, if known, residence address, (2) such person's principal occupation or employment, (3) the class and series and number of shares of stock of the corporation which are directly or indirectly owned, beneficially or of record, by such person, (4) a description of all direct and indirect compensation and other material monetary agreements, arrangements and understandings during the past three years, and any other material relationships, between or among (x) the stockholder, the beneficial owner, if any, on whose behalf the nomination is being made and the respective affiliates and associates of, or others acting in concert with, such stockholder and such beneficial owner, on the one hand, and (y) each proposed nominee, and his or her respective affiliates and associates, or others acting in concert with such nominee(s), on the other hand, including all information that would be required to be disclosed pursuant to Item 404 of Regulation S-K if the stockholder making the nomination and any beneficial owner on whose behalf the nomination is made or any affiliate or associate thereof or person acting in concert therewith were the "registrant" for purposes of such Item and the proposed nominee were a director or executive officer of such registrant, and (5) any other information concerning such person that must be disclosed as to nominees in proxy solicitations pursuant to Regulation 14A under the Securities Exchange Act of 1934, as amended (the "Exchange Act"); and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the nomination is being made (1) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (2) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any agreement, arrangement or understanding between or among such stockholder and/or such beneficial owner and each proposed nominee and any other person or persons (including their names) pursuant to which the nomination(s) are being made or who may participate in the solicitation of proxies in favor of electing such nominee(s), (4) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit

interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder or such beneficial owner, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder or such beneficial owner with respect to shares of stock of the corporation, (5) any other information relating to such stockholder and such beneficial owner that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the election of directors in a contested election pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (6) a representation that such stockholder intends to appear in person or by proxy at the meeting to nominate the person(s) named in its notice and (7) a representation whether such stockholder and/or such beneficial owner intends or is part of a group which intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock reasonably believed by such stockholder or such beneficial owner to be sufficient to elect the nominee (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such nomination (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(1)-(5) and (B)(1)-(5) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. In addition, to be effective, the stockholder's notice must be accompanied by the written consent of the proposed nominee to serve as a director if elected. The corporation may require any proposed nominee to furnish such other information as the corporation may reasonably require to determine the eligibility of such proposed nominee to serve as a director of the corporation or whether such nominee would be independent under applicable Securities and Exchange Commission and stock exchange rules and the corporation's corporate governance guidelines as posted on its website. A stockholder shall not have complied with this Section 1.10(b) if the stockholder (or beneficial owner, if any, on whose behalf the nomination is made) solicits or does not solicit, as the case may be, proxies or votes in support of such stockholder's nominee in contravention of the representations with respect thereto required by this Section 1.10.

(c) The chairman of the meeting shall have the power and duty to determine whether a nomination was made in accordance with the provisions of this Section 1.10 (including whether the stockholder or beneficial owner, if any, on whose behalf the nomination is made solicited (or is part of a group which solicited) or did not so solicit, as the case may be, proxies in support of such stockholder's nominee in compliance with the representations with respect thereto required by this Section 1.10), and if the chairman should determine that a nomination was not made in accordance with the provisions of this Section 1.10, the chairman shall so declare to the meeting and such nomination shall not be brought before the meeting.

(d) Except as otherwise required by law, nothing in this Section 1.10 shall obligate the corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the corporation or the Board of Directors information with respect to any nominee for director submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.10, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the meeting to present a nomination, such nomination shall not be brought before the meeting, notwithstanding that proxies in respect of such nominee may have been received by the corporation. For purposes of this Section 1.10, to be considered a "qualified representative of the stockholder", a person must be authorized by a written instrument executed by such stockholder or an electronic transmission delivered by such stockholder to act for such stockholder as proxy at the meeting of stockholders and such person must

produce such written instrument or electronic transmission, or a reliable reproduction of the written instrument or electronic transmission, at the meeting of stockholders.

(f) For purposes of this Section 1.10, "public disclosure" shall include disclosure in a press release reported by the Dow Jones News Service, Associated Press or comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Exchange Act.

1.11 Notice of Business at Annual Meetings.

(a) At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be (1) specified in the notice of meeting (or any supplement thereto) given by or at the direction of the Board of Directors, (2) otherwise properly brought before the meeting by or at the direction of the Board of Directors, or (3) properly brought before an annual meeting by a stockholder. For business to be properly brought before an annual meeting by a stockholder, (i) if such business relates to the election of directors of the corporation, the procedures in Section 1.10 must be complied with and (ii) if such business relates to any other matter, the business must constitute a proper matter under Delaware law for stockholder action and the stockholder must (x) have given timely notice thereof in writing to the Secretary in accordance with the procedures in Section 1.11(b), (y) be a stockholder of record on the date of the giving of such notice and on the record date for the determination of stockholders entitled to vote at such annual meeting and (z) be entitled to vote at such annual meeting.

(b) To be timely, a stockholder's notice must be received in writing by the Secretary at the principal executive offices of the corporation not less than 70 days nor more than 90 days prior to the first anniversary of the preceding year's annual meeting; provided, however, that in the event that the date of the annual meeting is advanced by more than 20 days, or delayed by more than 70 days, from the first anniversary of the preceding year's annual meeting, a stockholder's notice must be so received not earlier than the 90th day prior to such annual meeting and not later than the close of business on the later of (A) the 70th day prior to such annual meeting and (B) the tenth day following the day on which notice of the date of such annual meeting was mailed or public disclosure of the date of such annual meeting was made, whichever first occurs. In no event shall the adjournment or postponement of an annual meeting (or the public disclosure thereof) commence a new time period (or extend any time period) for the giving of a stockholder's notice.

The stockholder's notice to the Secretary shall set forth (A) as to each matter the stockholder proposes to bring before the annual meeting (1) a brief description of the business desired to be brought before the annual meeting, (2) the text of the proposal (including the exact text of any resolutions proposed for consideration and, in the event that such business includes a proposal to amend the By-laws, the exact text of the proposed amendment), and (3) the reasons for conducting such business at the annual meeting and (B) as to the stockholder giving the notice and the beneficial owner, if any, on whose behalf the proposal is being made (1) the name and address of such stockholder, as they appear on the corporation's books, and of such beneficial owner, (2) the class and series and number of shares of stock of the corporation that are, directly or indirectly, owned, beneficially or of record, by such stockholder and such beneficial owner, (3) a description of any material interest of such stockholder or such beneficial owner and the respective affiliates and associates of, or others acting in concert with, such stockholder or such beneficial owner in such business, (4) a description of any agreement, arrangement or understanding between or among such stockholder and/or such beneficial owner and any other person or persons (including their names) in connection with the proposal of such business or who may participate in the

solicitation of proxies in favor of such proposal, (5) a description of any agreement, arrangement or understanding (including any derivative or short positions, swaps, profit interests, options, warrants, convertible securities, stock appreciation or similar rights, hedging transactions, and borrowed or loaned shares) that has been entered into by, or on behalf of, such stockholder or such beneficial owner, the effect or intent of which is to mitigate loss to, manage risk or benefit of share price changes for, or increase or decrease the voting power of, such stockholder or such beneficial owner with respect to shares of stock of the corporation, (6) any other information relating to such stockholder and such beneficial owner that would be required to be disclosed in a proxy statement or other filings required to be made in connection with solicitations of proxies for the business proposed pursuant to Section 14 of the Exchange Act and the rules and regulations promulgated thereunder, (7) a representation that such stockholder intends to appear in person or by proxy at the annual meeting to bring such business before the meeting and (8) a representation whether such stockholder and/or such beneficial owner intends or is part of a group which intends (x) to deliver a proxy statement and/or form of proxy to holders of at least the percentage of the corporation's outstanding capital stock required to approve or adopt the proposal (and such representation shall be included in any such proxy statement and form of proxy) and/or (y) otherwise to solicit proxies or votes from stockholders in support of such proposal (and such representation shall be included in any such solicitation materials). Not later than 10 days after the record date for the meeting, the information required by Items (A)(3) and (B)(1)-(6) of the prior sentence shall be supplemented by the stockholder giving the notice to provide updated information as of the record date. Notwithstanding anything in these By-Laws to the contrary, no business shall be conducted at any annual meeting of stockholders except in accordance with the procedures in this Section 1.11; provided that any stockholder proposal which complies with Rule 14a-8 of the proxy rules (or any successor provision) promulgated under the Exchange Act and is to be included in the corporation's proxy statement for an annual meeting of stockholders shall be deemed to comply with the notice requirements of this Section 1.11. A stockholder shall not have complied with this Section 1.11(b) if the stockholder (or beneficial owner, if any, on whose behalf the proposal is made) solicits or does not solicit, as the case may be, proxies in support of such stockholder's proposal in contravention of the representations with respect thereto required by this Section 1.11.

(c) The chairman of any annual meeting shall have the power and duty to determine whether business was properly brought before the annual meeting in accordance with the provisions of this Section 1.11 (including whether the stockholder or beneficial owner, if any, on whose behalf the proposal is made solicited (or is part of a group which solicited) or did not so solicit, as the case may be, proxies or votes in support of such stockholder's proposal in compliance with the representation with respect thereto required by this Section 1.11), and if the chairman should determine that business was not properly brought before the annual meeting in accordance with the provisions of this Section 1.11, the chairman shall so declare to the meeting and such business shall not be brought before the annual meeting.

(d) Except as otherwise required by law, nothing in this Section 1.11 shall obligate the corporation or the Board of Directors to include in any proxy statement or other stockholder communication distributed on behalf of the corporation or the Board of Directors information with respect to any proposal submitted by a stockholder.

(e) Notwithstanding the foregoing provisions of this Section 1.11, unless otherwise required by law, if the stockholder (or a qualified representative of the stockholder) does not appear at the annual meeting to present business, such business shall not be considered, notwithstanding that proxies in respect of such business may have been received by the corporation.

(f) For purposes of this Section 1.11, the terms “qualified representative of the stockholder” and “public disclosure” shall have the same meaning as in Section 1.10.

1.12 Conduct of Meetings.

(a) Meetings of stockholders shall be presided over by the Chairman of the Board, or in the Chairman’s absence, the Vice Chairman of the Board, or in the absence of the Vice Chairman, the President; provided, however, that the Board of Directors may appoint any person to act as chairman of any meeting in the absence of the Chairman of the Board, the Vice Chairman or the President. The Secretary of the corporation shall act as secretary at all meetings of the stockholders; but in the absence of the Secretary at any meeting of the stockholders, the presiding officer may appoint any person to act as secretary of the meeting.

(b) The Board of Directors may adopt by resolution such rules, regulations and procedures for the conduct of any meeting of stockholders of the corporation as it shall deem appropriate including, without limitation, such guidelines and procedures as it may deem appropriate regarding the participation by means of remote communication of stockholders and proxyholders not physically present at a meeting. Except to the extent inconsistent with such rules, regulations and procedures as adopted by the Board of Directors, the chairman of any meeting of stockholders shall have the right and authority to convene and (for any or no reason) to recess and/or adjourn the meeting and prescribe such rules, regulations and procedures and to do all such acts as, in the judgment of such chairman, are appropriate for the proper conduct of the meeting. Such rules, regulations or procedures, whether adopted by the Board of Directors or prescribed by the chairman of the meeting, may include, without limitation, the following: (i) the establishment of an agenda or order of business for the meeting; (ii) rules and procedures for maintaining order at the meeting and the safety of those present; (iii) limitations on attendance at or participation in the meeting to stockholders entitled to vote at the meeting, their duly authorized and constituted proxies or such other persons as shall be determined; (iv) restrictions on entry to the meeting after the time fixed for the commencement thereof; and (v) limitations on the time allotted to questions or comments by participants. Unless and to the extent determined by the Board of Directors or the chairman of the meeting, meetings of stockholders shall not be required to be held in accordance with the rules of parliamentary procedure.

(c) The chairman of the meeting shall announce at the meeting when the polls for each matter to be voted upon at the meeting will be opened and closed. After the polls close, no ballots, proxies or votes or any revocations or changes thereto may be accepted.

(d) In advance of any meeting of stockholders, the Board of Directors, the Chairman of the Board, the Chief Executive Officer or the President shall appoint one or more inspectors of election to act at the meeting and make a written report thereof. One or more other persons may be designated as alternate inspectors to replace any inspector who fails to act. If no inspector or alternate is present, ready and willing to act at a meeting of stockholders, the chairman of the meeting shall appoint one or more inspectors to act at the meeting. Unless otherwise required by law, inspectors may be officers, employees or agents of the corporation. Each inspector, before entering upon the discharge of such inspector’s duties, shall take and sign an oath faithfully to execute the duties of inspector with strict impartiality and according to the best of such inspector’s ability. The inspector shall have the duties prescribed by law and shall take charge of the polls and, when the vote is completed, shall make a certificate of the result of the vote taken and of such other facts as may be required by law. Every vote taken by ballots shall be counted by a duly appointed inspector or duly appointed inspectors.

ARTICLE 2 - Directors

2.1 General Powers. The business and affairs of the corporation shall be managed by or under the direction of a Board of Directors, who may exercise all of the powers of the corporation except as otherwise provided by law or the Certificate of Incorporation. In the event of a vacancy in the Board of Directors, the remaining directors, except as otherwise provided by law, may exercise the powers of the full Board until the vacancy is filled.

2.2 Number; Election and Qualification. The number of directors which shall constitute the whole Board of Directors shall be determined by resolution of the Board of Directors, but in no event shall be less than three. The number of directors may be decreased at any time and from time to time by a majority of the directors then in office, but only to eliminate vacancies existing by reason of the death, resignation, removal or expiration of the term of one or more directors. The directors shall be elected at the annual meeting of stockholders by such stockholders as have the right to vote on such election. Directors need not be stockholders of the corporation.

2.3 Classes of Directors. The Board of Directors shall be and is divided into three classes: Class I, Class II and Class III. No one class shall have more than one director more than any other class. If a fraction is contained in the quotient arrived at by dividing the designated number of directors by three, then, if such fraction is one-third, the extra director shall be a member of Class I, and if such fraction is two-thirds, one of the extra directors shall be a member of Class I and one of the extra directors shall be a member of Class II, unless otherwise provided from time to time by resolution adopted by the Board of Directors.

2.4 Terms of Office. Each director shall serve for a term ending on the date of the third annual meeting following the annual meeting at which such director was elected; provided that the term of each director shall be subject to the election and qualification of his or her successor and to his or her earlier death, resignation or removal.

2.5 Allocation of Directors Among Classes in the Event of Increases or Decreases in the Number of Directors. In the event of any increase or decrease in the authorized number of directors, (i) each director then serving as such shall nevertheless continue as a director of the class of which he or she is a member and (ii) the newly created or eliminated directorships resulting from such increase or decrease shall be apportioned by the Board of Directors among the three classes of directors so as to ensure that no one class has more than one director more than any other class. To the extent possible, consistent with the foregoing rule, any newly created directorships shall be added to those classes whose terms of office are to expire at the latest dates following such allocation, and any newly eliminated directorships shall be subtracted from those classes whose terms of offices are to expire at the earliest dates following such allocation, unless otherwise provided from time to time by resolution adopted by the Board of Directors.

2.6 Vacancies. Any vacancy in the Board of Directors, however occurring, including a vacancy resulting from an enlargement of the size of the Board, shall be filled only by vote of a majority of the directors then in office, although less than a quorum, or by a sole remaining director. A director elected to fill a vacancy shall be elected for the unexpired term of his or her predecessor in office, and a director chosen to fill a position resulting from an increase in the number of directors shall hold office until the next election of the class for which such director shall have been chosen, subject to the election and qualification of a successor and until such director's earlier death, resignation or removal.

2.7 Resignation. Any director may resign by delivering a resignation in writing or by electronic transmission to the corporation at its principal office or to the President or Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

2.8 Regular Meetings. Regular meetings of the Board of Directors may be held without notice at such time and place, either within or without the State of Delaware, as shall be determined from time to time by the Board of Directors; provided that any director who is absent when such a determination is made shall be given notice of the determination. A regular meeting of the Board of Directors may be held without notice immediately after and at the same place as the annual meeting of stockholders.

2.9 Special Meetings. Special meetings of the Board of Directors may be held at any time and place, within or without the State of Delaware, designated in a call by the Chairman of the Board, President, two or more directors, or by one director in the event that there is only a single director in office.

2.10 Notice of Special Meetings. Notice of any special meeting of directors shall be given to each director by the Secretary or by the officer or one of the directors calling the meeting. Notice shall be duly given to each director (i) by giving notice to such director in person or by telephone at least 24 hours in advance of the meeting, (ii) by sending an electronic transmission, or delivering written notice by hand, to such director's last known business, home or electronic transmission address at least 24 hours in advance of the meeting, or (iii) by mailing written notice to such director's last known business or home address at least 72 hours in advance of the meeting. A notice or waiver of notice of a meeting of the Board of Directors need not specify the purposes of the meeting.

2.11 Meetings by Conference Communication Equipment. Directors or any members of any committee designated by the directors may participate in a meeting of the Board of Directors or such committee by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and participation by such means shall constitute presence in person at such meeting.

2.12 Quorum. A majority of the directors at any time in office shall constitute a quorum for the transaction of business. In the event one or more of the directors shall be disqualified to vote at any meeting, then the required quorum shall be reduced by one for each such director so disqualified; provided, however, that in no case shall less than one-third (1/3) of the number so fixed in accordance with the Certificate of Incorporation constitute a quorum. In the absence of a quorum at any such meeting, a majority of the directors present may adjourn the meeting from time to time without further notice other than announcement at the meeting, until a quorum shall be present.

2.13 Action at Meeting. At any meeting of the Board of Directors at which a quorum is present, the vote of a majority of those present shall be sufficient to take any action, unless a different vote is specified by law, the Certificate of Incorporation or these By-Laws.

2.14 Action by Consent. Any action required or permitted to be taken at any meeting of the Board of Directors or of any committee of the Board of Directors may be taken without a meeting, if all members of the Board or committee, as the case may be, consent to the action in writing or by electronic transmission, and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the Board or committee.

2.15 Removal. Directors of the corporation may be removed only for cause by the affirmative vote of the holders of at least two-thirds of the shares of the capital stock of the corporation issued and outstanding and entitled to vote.

2.16 Committees. The Board of Directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The Board may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting

of the committee. In the absence or disqualification of a member of a committee, the member or members of the committee present at any meeting and not disqualified from voting, whether or not he or they constitute a quorum, may unanimously appoint another member of the Board of Directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the Board of Directors and subject to the provisions of the General Corporation Law of the State of Delaware, shall have and may exercise all the powers and authority of the Board of Directors in the management of the business and affairs of the corporation and may authorize the seal of the corporation to be affixed to all papers which may require it. Each such committee shall keep minutes and make such reports as the Board of Directors may from time to time request. Except as the Board of Directors may otherwise determine, any committee may make rules for the conduct of its business, but unless otherwise provided by the directors or in such rules, its business shall be conducted as nearly as possible in the same manner as is provided in these By-Laws for the Board of Directors.

2.17 Compensation of Directors. Directors may be paid such compensation for their services and such reimbursement for expenses of attendance at meetings as the Board of Directors may from time to time determine. No such payment shall preclude any director from serving the corporation or any of its parent or subsidiary corporations in any other capacity and receiving compensation for such service.

ARTICLE 3 - Officers

3.1 Enumeration. The officers of the corporation shall consist of a President, a Secretary, a Treasurer and such other officers with such other titles as the Board of Directors shall determine, including a Chairman of the Board, a Vice Chairman of the Board, and one or more Vice Presidents, Assistant Treasurers and Assistant Secretaries. The Board of Directors may appoint such other officers as it may deem appropriate.

3.2 Election. The President, Treasurer and Secretary shall be elected annually by the Board of Directors at its first meeting following the annual meeting of stockholders. Other officers may be appointed by the Board of Directors at such meeting or at any other meeting.

3.3 Qualification. No officer need be a stockholder. Any two or more offices may be held by the same person.

3.4 Tenure. Except as otherwise provided by law, by the Certificate of Incorporation or by these By-Laws, each officer shall hold office until his or her successor is elected and qualified, unless a different term is specified in the vote choosing or appointing such officer, or until such officer's earlier death, resignation or removal.

3.5 Resignation and Removal. Any officer may resign by delivering a written resignation to the corporation at its principal office or to the President or Secretary. Such resignation shall be effective upon receipt unless it is specified to be effective at some other time or upon the happening of some other event.

Any officer may be removed at any time, with or without cause, by vote of the Board of Directors.

Except as the Board of Directors may otherwise determine, no officer who resigns or is removed shall have any right to any compensation as an officer for any period following such officer's resignation or removal, or any right to damages on account of such removal, whether such officer's compensation be by the month or by the year or otherwise, unless such compensation is expressly provided in a duly authorized written agreement with the corporation.

3.6 Vacancies. The Board of Directors may fill any vacancy occurring in any office for any reason and may, in its discretion, leave unfilled for such period as it may determine any offices other than those of President, Treasurer and Secretary. Each such successor shall hold office for the unexpired term of his or her predecessor and until his or her successor is elected and qualified, or until his or her earlier death, resignation or removal.

3.7 Chairman of the Board and Vice Chairman of the Board. The Board of Directors may appoint a Chairman of the Board. If the Board of Directors appoints a Chairman of the Board, the Chairman shall perform such duties and possess such powers as are assigned to him or her by the Board of Directors. Unless otherwise provided by the Board of Directors, the Chairman shall preside at all meetings of the stockholders and at all meetings of the Board of Directors. If the Board of Directors appoints a Vice Chairman of the Board, the Vice Chairman shall, in the absence or disability of the Chairman of the Board, perform the duties and exercise the powers of the Chairman of the Board and shall perform such other duties and possess such other powers as may from time to time be vested in him or her by the Board of Directors.

3.8 President. The President shall, subject to the direction of the Board of Directors, have general charge and supervision of the business of the corporation. Unless the Board of Directors has designated the Chairman of the Board or another officer as Chief Executive Officer, the President shall be the Chief Executive Officer of the corporation. The President shall perform such other duties and shall have such other powers as the Board of Directors may from time to time prescribe.

3.9 Vice Presidents. Any Vice President shall perform such duties and possess such powers as the Board of Directors or the President may from time to time prescribe. In the event of the absence, inability or refusal to act of the President, the Vice President (or if there shall be more than one, the Vice Presidents in the order determined by the Board of Directors) shall perform the duties of the President and when so performing shall have all the powers of and be subject to all the restrictions upon the President. The Board of Directors may assign to any Vice President the title of Executive Vice President, Senior Vice President or any other title selected by the Board of Directors.

3.10 Secretary and Assistant Secretaries. The Secretary shall perform such duties and shall have such powers as the Board of Directors or the President may from time to time prescribe. In addition, the Secretary shall perform such duties and have such powers as are incident to the office of the secretary, including without limitation the duty and power to give notices of all meetings of stockholders and special meetings of the Board of Directors, to attend all meetings of stockholders and the Board of Directors and keep a record of the proceedings, to maintain a stock ledger and prepare lists of stockholders and their addresses as required, to be custodian of corporate records and the corporate seal and to affix and attest to the same on documents.

Any Assistant Secretary shall perform such duties and possess such powers as the Board of Directors, the President or the Secretary may from time to time prescribe. In the event of the absence, inability or refusal to act of the Secretary, the Assistant Secretary (or if there shall be more than one, the Assistant Secretaries in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Secretary.

In the absence of the Secretary or any Assistant Secretary at any meeting of stockholders or directors, the person presiding at the meeting shall designate a temporary secretary to keep a record of the meeting.

3.11 Treasurer and Assistant Treasurers. The Treasurer shall perform such duties and shall have such powers as may from time to time be assigned to him or her by the Board of Directors or the President. In addition, the Treasurer shall perform such duties and have such powers as are incident to the office of

treasurer, including without limitation the duty and power to keep and be responsible for all funds and securities of the corporation, to deposit funds of the corporation in depositories selected in accordance with these By-Laws, to disburse such funds as ordered by the Board of Directors, to make proper accounts of such funds, and to render as required by the Board of Directors statements of all such transactions and of the financial condition of the corporation.

The Assistant Treasurers shall perform such duties and possess such powers as the Board of Directors, the President or the Treasurer may from time to time prescribe. In the event of the absence, inability or refusal to act of the Treasurer, the Assistant Treasurer (or if there shall be more than one, the Assistant Treasurers in the order determined by the Board of Directors) shall perform the duties and exercise the powers of the Treasurer.

3.12 Salaries. Officers of the corporation shall be entitled to such salaries, compensation or reimbursement as shall be fixed or allowed from time to time by the Board of Directors.

ARTICLE 4 - Capital Stock

4.1 Issuance of Stock. Unless otherwise voted by the stockholders and subject to the provisions of the Certificate of Incorporation, the whole or any part of any unissued balance of the authorized capital stock of the corporation or the whole or any part of any unissued balance of the authorized capital stock of the corporation held in its treasury may be issued, sold, transferred or otherwise disposed of by vote of the Board of Directors in such manner, for such consideration and on such terms as the Board of Directors may determine.

4.2 Certificates of Stock; Uncertificated Shares. The shares of the corporation shall be represented by certificates, provided that the Board of Directors may provide by resolution or resolutions that some or all of any or all classes or series of the corporation's stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock of the corporation represented by certificates shall be entitled to have a certificate, in such form as may be prescribed by law and by the Board of Directors, representing the number of shares held by such holder registered in certificate form. Each such certificate shall be signed in a manner that complies with Section 158 of the General Corporation Law of the State of Delaware.

Each certificate for shares of stock which are subject to any restriction on transfer pursuant to the Certificate of Incorporation, these By-Laws, applicable securities laws or any agreement among any number of stockholders or among such holders and the corporation shall have conspicuously noted on the face or back of the certificate either the full text of the restriction or a statement of the existence of such restriction.

If the corporation shall be authorized to issue more than one class of stock or more than one series of any class, the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of each certificate representing shares of such class or series of stock, provided that in lieu of the foregoing requirements there may be set forth on the face or back of each certificate representing shares of such class or series of stock a statement that the corporation will furnish without charge to each stockholder who so requests a copy of the full text of the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

Within a reasonable time after the issuance or transfer of uncertificated shares, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to Sections 151, 202(a) or 218(a) of the General Corporation Law of the State of Delaware or, with respect to Section 151 of General Corporation Law of the State of Delaware, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights.

4.3 Transfers. Except as otherwise established by rules and regulations adopted by the Board of Directors, and subject to applicable law, shares of stock may be transferred on the books of the corporation by the surrender to the corporation or its transfer agent of the certificate representing such shares properly endorsed or accompanied by a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Uncertificated shares may be transferred by delivery of a written assignment or power of attorney properly executed, and with such proof of authority or the authenticity of signature as the corporation or its transfer agent may reasonably require. Except as may be otherwise required by law, by the Certificate of Incorporation or by these By-Laws, the corporation shall be entitled to treat the record holder of stock as shown on its books as the owner of such stock for all purposes, including the payment of dividends and the right to vote with respect to such stock, regardless of any transfer, pledge or other disposition of such stock until the shares have been transferred on the books of the corporation in accordance with the requirements of these By-Laws.

4.4 Lost, Stolen or Destroyed Certificates. The corporation may issue a new certificate of stock in place of any previously issued certificate alleged to have been lost, stolen or destroyed, upon such terms and conditions as the corporation may prescribe, including the presentation of reasonable evidence of such loss, theft or destruction and the giving of such indemnity as the corporation may require for the protection of the corporation or any transfer agent or registrar.

4.5 Record Date. The Board of Directors may fix in advance a date as a record date for the determination of the stockholders entitled to notice of or to vote at any meeting of stockholders, or entitled to receive payment of any dividend or other distribution or allotment of any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action. Such record date shall not be more than 60 nor less than ten days before the date of such meeting, nor more than 60 days prior to any other action to which such record date relates.

If no record date is fixed, the record date for determining stockholders entitled to notice of or to vote at a meeting of stockholders shall be at the close of business on the day before the day on which notice is given, or, if notice is waived, at the close of business on the day before the day on which the meeting is held. The record date for determining stockholders for any other purpose shall be at the close of business on the day on which the Board of Directors adopts the resolution relating to such purpose.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; provided, however, that the Board of Directors may fix a new record date for the adjourned meeting.

ARTICLE 5 - General Provisions

5.1 Fiscal Year. Except as from time to time otherwise designated by the Board of Directors, the fiscal year of the corporation shall begin on the first day of January in each year and end on the last day of December in each year.

5.2 Corporate Seal. The corporate seal shall be in such form as shall be approved by the Board of Directors.

5.3 Waiver of Notice. Whenever any notice whatsoever is required to be given by law, by the Certificate of Incorporation or by these By-Laws, a waiver of such notice either in writing or by electronic transmission given by the person entitled to such notice or such person's duly authorized attorney, whether before, at or after the time stated in such waiver, shall be deemed equivalent to such notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at nor the purpose of any regular or special meeting of the stockholders, directors, or members of a committee of directors need be specified in a waiver of notice.

5.4 Voting of Securities. Except as the directors may otherwise designate, the President or Treasurer may waive notice of, and act as, or appoint any person or persons to act as, proxy or attorney-in-fact for this corporation (with or without power of substitution) at any meeting of stockholders, shareholders, members, partners or otherwise of any other corporation or organization or entity, the securities of which may be held by this corporation.

5.5 Evidence of Authority. A certificate by the Secretary, or an Assistant Secretary, or a temporary Secretary, as to any action taken by the stockholders, directors, a committee or any officer or representative of the corporation shall as to all persons who rely on the certificate in good faith be conclusive evidence of such action.

5.6 Certificate of Incorporation. All references in these By-Laws to the Certificate of Incorporation shall be deemed to refer to the Certificate of Incorporation of the corporation, as amended and/or restated and in effect from time to time.

5.7 Transactions with Interested Parties. No contract or transaction between the corporation and one or more of the directors or officers, or between the corporation and any other corporation, partnership, association or other organization in which one or more of the directors or officers are directors or officers, or have a financial interest, shall be void or voidable solely for this reason, or solely because the director or officer is present at or participates in the meeting of the Board of Directors or a committee of the Board of Directors which authorizes the contract or transaction or solely because his, her or their votes are counted for such purpose, if:

(1) The material facts as to his or her relationship or interest and as to the contract or transaction are disclosed or are known to the Board of Directors or the committee, and the Board or committee in good faith authorizes the contract or transaction by the affirmative votes of a majority of the disinterested directors, even though the disinterested directors be less than a quorum;

(2) The material facts as to his or her relationship or interest and as to the contract or transaction are disclosed or are known to the stockholders entitled to vote thereon, and the contract or transaction is specifically approved in good faith by vote of the stockholders; or

(3) The contract or transaction is fair as to the corporation as of the time it is authorized, approved or ratified, by the Board of Directors, a committee of the Board of Directors, or the stockholders.

Common or interested directors may be counted in determining the presence of a quorum at a meeting of the Board of Directors or of a committee which authorizes the contract or transaction.

5.8 Severability. Any determination that any provision of these By-Laws is for any reason inapplicable, illegal or ineffective shall not affect or invalidate any other provision of these By-Laws.

5.9 Pronouns. All pronouns used in these By-Laws shall be deemed to refer to the masculine, feminine or neuter, singular or plural, as the identity of the person or persons may require.

ARTICLE 6 - Amendments

6.1 By the Board of Directors. These By-Laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of a majority of the directors present at any regular or special meeting of the Board of Directors at which a quorum is present.

6.2 By the Stockholders. Except as otherwise provided in Section 6.3, these By-Laws may be altered, amended or repealed or new by-laws may be adopted by the affirmative vote of the holders of a majority in voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote at any regular or special meeting of stockholders, provided notice of such alteration, amendment, repeal or adoption of new by-laws shall have been stated in the notice of such regular or special meeting.

6.3 Certain Provisions. Notwithstanding any other provision of law, the Certificate of Incorporation or these By-Laws, and notwithstanding the fact that a lesser percentage may be specified by law, the affirmative vote of the holders of at least seventy-five percent (75%) of the voting power of the shares of the capital stock of the corporation issued and outstanding and entitled to vote on the matter shall be required in order for stockholders to amend or repeal, or to adopt any provision inconsistent with Section 1.3, Section 1.10, Section 1.11, Section 1.12, Article 2 or Article 6 of these By-Laws.

DESCRIPTION OF SECURITIES REGISTERED UNDER SECTION 12 OF THE EXCHANGE ACT

The following description of the securities of Akamai Technologies, Inc. (“us,” “our,” “we” or the “Company”) registered under Section 12 of the Exchange Act is intended as a summary only and therefore is not a complete description. This description is based upon, and is qualified by reference to, our certificate of incorporation, our by-laws and applicable provisions of the Delaware General Corporation Law (the “DGCL”). You should read our certificate of incorporation and by-laws, which are incorporated by reference as Exhibit 3.1 and Exhibit 3.2, respectively, to the Annual Report on Form 10-K of which this Exhibit 4.4 is a part, for the provisions that are important to you.

Authorized Capital Stock

Our authorized capital stock consists of 700,000,000 shares of common stock, \$0.01 par value per share, and 5,000,000 shares of preferred stock, \$0.01 par value per share, of which 700,000 shares have been designated as shares of Series A Junior Participating Preferred Stock, par value \$0.01 per share. Our common stock is registered under Section 12(b) of the Exchange Act.

Common Stock

Voting Rights. Holders of our common stock are entitled to one vote for each share held on matters submitted to a vote of stockholders. Holders of our common stock do not have cumulative voting rights. Any matters, including the election of directors, to be voted upon by the stockholders at a meeting are decided by the vote of the holders of shares of stock having a majority in voting power of the votes cast by the holders of all of the shares of stock present or represented at the meeting and voting on such matter, except when a different vote is required by law, our certificate of incorporation or our by-laws. In any contested election of directors, a plurality standard will apply.

Dividends. Holders of common stock are entitled to receive their proportionate share of any dividends declared by the board of directors, subject to any preferential dividend rights of outstanding preferred stock.

Liquidation, Dissolution and Winding Up. Upon our liquidation, dissolution or winding up, the holders of common stock are entitled to receive ratably our net assets available after the payment of all debts and other liabilities and subject to the preferential rights of any outstanding preferred stock.

Other Rights. The common stock has no preemptive, subscription, redemption or conversion rights. All outstanding shares of common stock are fully paid and non-assessable. The rights, preferences and privileges of the common stock are subject to the rights of the holders of shares of any series of our preferred stock.

Preferred Stock

Our board of directors is authorized to issue shares of additional shares of preferred stock in one or more series without stockholder approval. The board of directors has discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of preferred stock. The purpose of authorizing the board of directors to issue preferred stock and determine its rights and preferences is to eliminate delays associated with a stockholder vote on specific issuances. The board’s ability to issue preferred stock will provide desirable flexibility in connection with possible acquisitions and other corporate purposes and could make it more difficult for a third party to acquire, or could discourage a third party from acquiring, a majority of our outstanding voting stock. The issuance of preferred stock with voting and conversion rights may adversely affect the voting power of the holders of common stock.

Provisions of Our Certificate of Incorporation and By-laws and the DGCL That May Have Anti-Takeover Effects

Board of Directors and Removal of Directors by Stockholders. Our certificate of incorporation and by-laws provide (1) that (a) until the election of directors at the annual meeting scheduled to be held in 2021, the board of directors be divided into classes, with staggered terms, and (b) commencing with the election of directors at the annual meeting scheduled to be held in 2021, the classification of the board of directors will cease and directors will be elected for a term expiring at the next annual meeting of stockholders, (2) that (a) until the election of directors at the annual meeting scheduled to be held in 2021, directors may be removed only for cause by the vote of the holders of at least two-thirds of the shares of our capital stock entitled to vote, and (b) thereafter, directors may be removed, with or without cause, by the vote of the holders of a majority of the shares of our capital stock entitled to vote, and (3) that any vacancy on the board of directors, however occurring, including a vacancy resulting from an enlargement of the board, may only be filled by vote of a majority of the directors then in office. The number of directors comprising our board of directors is fixed from time to time by the board of directors.

The filling of vacancies and, until the election of directors at the annual meeting scheduled to be held in 2021, the classification of the board of directors and the limitations on the removal of directors could make it more difficult for a third party to acquire, or discourage a third party from acquiring, us.

No Action by Written Consent or Stockholder Right to Call Special Meetings; Advance Notice Provisions. Our certificate of incorporation and by-laws provide (1) that any action required or permitted to be taken by the stockholders at an annual meeting or special meeting of stockholders may only be taken if it is properly brought before such meeting and may not be taken by written action in lieu of a meeting, and (2) that special meetings of the stockholders may only be called by the chairman of the board of directors, the president, or by the board of directors. Our by-laws also provide that, in order for any matter to be considered “properly brought” before a meeting, a stockholder must comply with requirements regarding advance notice to us. These provisions could delay until the next stockholders’ meeting stockholder actions which are favored by the holders of a majority of our outstanding voting securities. These provisions may also discourage another person or entity from making a tender offer for our common stock, because such person or entity, even if it acquired a majority of our outstanding voting securities, would be able to take action as a stockholder only at a duly called stockholders meeting, and not by written consent.

Amendments to Certificate of Incorporation and By-laws. Delaware law provides that the vote of a majority of the shares entitled to vote on any matter is required to amend a corporation’s certificate of incorporation or by-laws, unless a corporation’s certificate of incorporation or by-laws, as the case may be, requires a greater percentage. Our certificate of incorporation requires the vote of the holders of at least 75% of the shares of our capital stock entitled to vote to amend or repeal the foregoing provisions of our certificate of incorporation regarding the election, removal and classification of members of the board of directors, special meetings of stockholders and written actions of stockholders in lieu of a meeting. Generally, our by-laws may be amended or repealed by a majority vote of the board of directors or the holders of a majority of the shares of our capital stock issued and outstanding and entitled to vote. Changes to our by-laws regarding special meetings of stockholders, advance notice provisions, and the election, removal and classification of members of the board of directors, among others, require the vote of the holders of at least 75% of the shares of our capital stock entitled to vote. The stockholder vote would be in addition to any separate class vote that might in the future be required pursuant to the terms of any series preferred stock that might be then outstanding.

Delaware Business Combination Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law. Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes mergers, asset sales and other transactions resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns, or within three years did own, 15% or more of the corporation’s voting stock.

Summary of the Registrant's Compensatory Arrangements with Executive Officers

Effective January 1, 2020, the current base salary for the Registrant's named executive officers was as follows:

<u>Name and Title</u>	<u>Base Salary for 2019</u>
F. Thomson Leighton Chief Executive Officer	\$1
Edward McGowan Chief Financial Officer	\$450,000
Robert Blumofe EVP - Platform & General Manager Enterprise Division	\$505,000
Adam Karon EVP and General Manager Media Division	\$475,000
Rick McConnell President and General Manager Web Division	\$580,000
James Benson Former Chief Financial Officer	\$20,000

10.15

*Performance Period: FY ____***Name:****Title:**

This ____ Executive Bonus Plan sets forth your annual incentive bonus compensation for ____ based on the achievement of certain corporate performance objectives. In order to receive your ____ annual incentive bonus, you must be an employee in good standing throughout all of ____ and the objectives must be achieved, as described more thoroughly below. The Compensation Committee of the Board of Directors will resolve all questions arising in the administration, interpretation and application of this plan, and the Compensation Committee's determination will be final and binding on all concerned. Where permitted by applicable law, the Compensation Committee reserves the right to modify, at its discretion and at any time, the terms of this plan, including, but not limited to, the performance objectives, targets, and payouts.

Target bonus amount: \$ _____

To the extent earned, your bonus will be paid to you in fully-vested shares of Akamai common stock issued under the Akamai Technologies, Inc. 2013 Stock Incentive Plan, as amended. Any such payment shall be subject to applicable withholding requirements.

Performance Objectives/Targets

Your ____ annual incentive bonus is comprised of two components: (1) corporate financial performance during Fiscal Year ____ against a non-GAAP revenue target (50%) (the "Revenue Component") and (2) corporate financial performance during Fiscal Year ____ against a non-GAAP operating income target (50%) (the "Operating Income Component" and, together with the Revenue Component, the "Financial Components"). The method for calculating corporate financial performance used to determine the Financial Components is described in the attached Schedule 1. In the event of any question as to whether the components of the Financial Components have been satisfied, the Compensation Committee shall make such determination. The Compensation Committee also has the authority to make downward discretionary changes to the payout amount. The amounts payable to you under the Financial Components are as follows:

*Revenue Component*Akamai Performance Against

<u>Target from Schedule 1</u>	<u>Target Amount (\$M)</u>	<u>Amount Payable to You</u>
90% of Target \$ ____ _		0% of Component
100% of Target: \$ ____ _		100% of Component
110% or greater of Target	\$ ____	200% of Component

*Operating Income Component*Akamai Performance Against

<u>Target from Schedule 1</u>	<u>Target Amount (\$M)</u>	<u>Amount Payable to You</u>
90% of Target \$ ____		0% of Component
100% of Target: \$ ____		100% of Component
110% or greater of Target	\$ ____	200% of Component

The issuance of shares of Akamai common stock earned by you (less tax withholding) will be made to you promptly following the Compensation Committee's written certification of the amount earned hereunder as described in the preceding paragraph. The number of shares issued upon achievement of your bonus will be calculated based on the closing sale price of the Akamai's common stock on the date of such certification.

Acceptance: _____
Date

Approved by: _____
Date

SCHEDULE 1

CORPORATE FINANCIAL PERFORMANCE MEASUREMENT METHODOLOGY

A. Overview; Definitions

The target amount for payment at 100% of the Revenue Component is \$_____ million. The target amount for payment at 100% of the Non-GAAP Operating Income Component is \$___ million.

For purposes of this Agreement, such metrics shall have the following meanings:

“Revenue” shall mean the Company’s consolidated revenue for fiscal year ____ calculated in accordance with generally accepted accounting principles in the United States (US) of America and adjusted for constant currency (defined as revenue denominated in US dollars plus revenue denominated in foreign currencies converted to US dollars at ____ budgeted foreign currency exchange rates) and other non-recurring or unusual items that may arise from time to time.

“Non-GAAP Operating Income” shall mean the Company’s consolidated annual operating income for fiscal year ____, which is income from operations before income taxes, interest income, interest expense and other income/expense, adjusted for items excluded by the Company in determining non-GAAP earnings including amortization of acquired intangible assets; stock-based compensation; amortization of capitalized stock-based compensation; amortization of capitalized interest expense; acquisition-related costs; restructuring charges; gains and losses on legal settlements; costs incurred with respect to Akamai’s internal FCPA investigation ; and other non-recurring or unusual items that may arise from time to time. Non-GAAP operating income will be adjusted for constant currency.

If, on December 31, ____, the Company is required to make periodic reports under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), the Company’s consolidated financial statements filed with the Securities and Exchange Commission on Form 10-K shall constitute its “Public Company Financial Statements” and shall apply. If, on December 31, ____, the Company is not required to make periodic reports under the Exchange Act, the Company’s regularly prepared annual audited financial statements prepared by management shall be its “Private Company Financial Statements” and shall apply. The Public Company Financial Statements or Private Company Financial Statements, as applicable, may be referred to herein as the “____ Financial Statements.”

B. Effect of an Acquisition or Disposition by Akamai

In the event that Akamai closes an Acquisition Transaction or Disposition Transaction during ____, the Compensation Committee shall make adjustments to affected performance targets to give effect to the expected impact on such targets of the applicable Acquisition Transaction or Disposition Transaction (including whether it is accretive or not) based on management’s good faith estimate of the projected impact as presented to the Board of Directors and/or Compensation Committee. An “Acquisition Transaction” means (i) the purchase of more than 50% of the voting power of an entity, (ii) any merger, reorganization, consolidation, recapitalization, business combination, liquidation, dissolution or share exchange involving Akamai and an entity not previously owned by Akamai, or (iii) the purchase or other acquisition (including, without limitation, via license outside of the ordinary course of business or joint venture) of assets that constitute more than 50% of another entity’s total assets or assets that account for more than 50% of the consolidated net revenues or net income of such entity. A “Disposition Transaction” means the sale of a division, business unit or set of business operations and/or related assets to a third party.

All determinations of the Compensation Committee regarding the estimated impact of an Acquisition Transaction shall be final, binding and non-appealable. The cumulative impact of all Acquisition Transactions shall be set forth in a statement delivered upon payment, if any, of the bonus contemplated by this plan. This

plan shall be deemed to be automatically amended, without further action by the Company or the executive, to give effect to any adjustments required by this Section B.

SUBSIDIARIES OF THE REGISTRANT

AKAMAI TECHNOLOGIES LTD.	Incorporated in the United Kingdom
AKAMAI TECHNOLOGIES GMBH	Incorporated in Germany
AKAMAI TECHNOLOGIES SARL	Incorporated in France
AKAMAI TECHNOLOGIES NETHERLANDS BV	Incorporated in the Netherlands
AKAMAI INTERNATIONAL BV	Incorporated in the Netherlands
AKAMAI TECHNOLOGIES SECURITIES CORPORATION	Incorporated in Massachusetts
K STREAMING LLC	Organized in Delaware
AKAMAI SALES LLC	Organized in Delaware
AKAMAI JAPAN G.K.	Incorporated in Japan
AKAMAI TECHNOLOGIES INDIA PRIVATE LTD.	Incorporated in India
AKAMAI TECHNOLOGIES SPAIN SL	Incorporated in Spain
AKAMAI TECHNOLOGIES SINGAPORE PVT. LTD.	Incorporated in Singapore
AJ TECHNOLOGIES LTD	Incorporated in the Cayman Islands
AKAMAI (BEIJING) TECHNOLOGIES, CO. LTD.	Incorporated in the People's Republic of China
AKAMAI TECHNOLOGIES AB	Incorporated in Sweden
AKAMAI TECHNOLOGIES SOLUTIONS (INDIA) PRIVATE LTD.	Incorporated in India
AKAMAI INDIA NETWORKS PRIVATE LTD.	Incorporated in India
AKAMAI TECHNOLOGIES YUHAN HOESA	Incorporated in South Korea
AKAMAI TECHNOLOGIES S.R.I.	Incorporated in Italy
AKAMAI TECHNOLOGIES INTERNATIONAL AG	Incorporated in Switzerland
AKAMAI TECHNOLOGIES HONG KONG LIMITED	Incorporated in Hong Kong
AKAMAI TECHNOLOGIES POLAND SP. Z.O.O.	Incorporated in Poland
AKAMAI TECHNOLOGIES S.R.O.	Incorporated in the Czech Republic
AKAMAI TECHNOLOGIES E SERVICOS DO BRASIL LTDA.	Incorporated in Brazil
AKAMAI TECHNOLOGIES APJ PTE LTD.	Incorporated in Singapore
AKAMAI TECHNOLOGIES ISRAEL LIMITED	Incorporated in Israel
AKAMAI TECHNOLOGIES CANADA	Incorporated in Canada
AKAMAI TECHNOLOGIES COSTA RICA SRL	Incorporated in Costa Rica
AKAMI TEKNOLOGI HIZMETLERI LIMITED SIKRETI	Incorporated in Turkey
AKAMAI TECHNOLOGIES LIMITED	Incorporated in Taiwan
AKAMAI TECHNOLOGIES MALAYSIA SDN BHD	Incorporated in Malaysia
AKAMAI TECHNOLOGIES BELGIUM SPRL	Incorporated in Belgium
AKAMAI TECHNOLOGIES LLC	Organized in Russia
AKAMAI TECHNOLOGIES DENMARK APS	Incorporated in Denmark
AKAMAI TECHNOLOGIES LUXEMBOURGH SARL	Incorporated in Luxembourg
CODEMATE APS	Incorporated in Denmark
OCTOSHAPPE APS	Incorporated in Denmark
SOHA SYSTEMS INDIA PRIVATE LTD.	Incorporated in India
NOMINUM, INC.	Incorporated in Delaware
AKAMAI TECHNOLOGIES MEXICO	Incorporated in Mexico
AKAMAI TECHNOLOGIES ARGENTINA SRL	Incorporated in Argentina
JANRAIN, INC.	Incorporated in Delaware
BEIJING JANRAIN TECHNOLOGY CO. LTD.	Incorporated in the People's Republic of China
CHAMELEONX LTD.	Incorporated in Israel
JANRAIN LTD.	Incorporated in the United Kingdom

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-89889, 333-91558, 333-159340, 333-174577, 333-179789, 333-188989, 333-194278, 333-204208, 333-218537 and 333-231704) of Akamai Technologies, Inc. of our report dated February 28, 2020 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
February 28, 2020

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, F. Thomson Leighton, certify that:

1. I have reviewed this Annual Report on Form 10-K of Akamai Technologies, 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 functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2020

/s/ F. Thomson Leighton

F. Thomson Leighton, Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Edward McGowan, certify that:

1. I have reviewed this Annual Report on Form 10-K of Akamai Technologies, 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 functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 28, 2020

/s/ Edward McGowan

Edward McGowan, Chief Financial Officer

CERTIFICATION 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 on Form 10-K of Akamai Technologies, Inc. (the "Company") for the period ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, F. Thomson Leighton, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that, to his knowledge:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date February 28, 2020

/s/ F. Thomson Leighton

F. Thomson Leighton, Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to Akamai Technologies, Inc. and will be retained by Akamai Technologies, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

CERTIFICATION 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 on Form 10-K of Akamai Technologies, Inc. (the "Company") for the period ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Edward McGowan, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that, to his knowledge:

- (1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 28, 2020

/s/ Edward McGowan

Edward McGowan

A signed original of this written statement required by Section 906 has been provided to Akamai Technologies, Inc. and will be retained by Akamai Technologies, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.