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

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2019

or

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

For the transition period from _____ to _____
Commission file number: 001-39039

Cloudflare, Inc.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

27-0805829
(I.R.S. Employer
Identification Number)

101 Townsend Street
San Francisco, California 94107
(Address of principal executive offices and zip code)
(888) 993-5273
(Registrant's telephone number, including area code)

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

Title of Each Class	Trading Symbol	Name of Each Exchange on Which Registered
Class A Common Stock, \$0.001 par value	NET	The New York Stock Exchange

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

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

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
		Emerging growth company	<input checked="" type="checkbox"/>

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

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

The aggregate market value of the common stock held by non-affiliates of the registrant, based on the closing price of the shares of Class A common stock on September 17, 2019 as reported by the New York Stock Exchange on such date was approximately \$1,905 million. The registrant has elected to use September 17, 2019, which was the closing date of its initial public offering of Class A common stock, as the calculation date because on June 30, 2019 (the last business day of the registrant's most recently completed second fiscal quarter), the registrant was a privately held company. Shares of the registrant's common stock held by each executive officer and director and by each other person who may be deemed to be an affiliate of the registrant have been excluded from this computation. This calculation does not reflect a determination that certain persons are affiliates of the registrant for any other purpose.

As of February 21, 2020, 94,569,695 shares of the registrant's Class A common stock were outstanding and 208,066,163 shares of the registrant's Class B common stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

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

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, which statements involve substantial risks and uncertainties. Forward-looking statements generally relate to future events or our future financial or operating performance. In some cases, you can identify forward-looking statements because they contain words such as “may,” “will,” “should,” “expects,” “plans,” “anticipates,” “could,” “intends,” “target,” “projects,” “contemplates,” “believes,” “estimates,” “predicts,” “potential,” or “continue,” or the negative of these words, or other similar terms or expressions that concern our expectations, strategy, plans, or intentions.

Forward-looking statements contained in this Annual Report on Form 10-K include, but are not limited to, statements about:

- our ability to retain and upgrade paying customers;
- our ability to attract new customers or convert free customers to paying customers;
- our future financial performance, including trends in revenue, costs of revenue, gross profit or gross margin, operating expenses, paying customers, and free cash flow;
- our ability to achieve or maintain profitability;
- the consequences we may face resulting from the activities of our customers and the actions we take in response, including associated theories of liability;
- the demand for our products or for solutions for security, performance, and reliability in general;
- possible harm caused by significant disruption of service, loss or unauthorized access to customers’ content, or the actual or perceived failure of our products to prevent security incidents;
- our ability to compete successfully in competitive markets;
- our ability to respond to rapid technological changes;
- our ability to continue to innovate and develop new products;
- our expectations and management of future growth;
- our ability to maintain existing co-location relationships, ISP partnerships, and other interconnection arrangements around the world;
- our ability to offer high-quality customer support;
- our ability to manage our global operations;
- our expectations of and ability to comply with applicable laws around the world;
- our ability to correctly estimate our tax obligations around the world;
- our ability to attract and retain key personnel and other highly qualified personnel;
- our ability to maintain our brand;
- our ability to prevent serious errors or defects across, and to otherwise maintain the uninterrupted operation of, our network;
- our ability to maintain, protect, and enhance our intellectual property; and
- our ability to successfully identify, acquire, and integrate companies and assets.

You should not rely upon forward-looking statements as predictions of future events. We have based the forward-looking statements contained in this Annual Report on Form 10-K primarily on our current expectations and projections about future events and trends that we believe may affect our business, financial condition, results of operations, and prospects. The outcome of the events described in these forward-looking statements is subject to risks, uncertainties, and other factors described in the section titled “Risk Factors” and elsewhere in this Annual Report on Form 10-K. Readers are urged to carefully review and consider the various disclosures made in this Annual Report on Form 10-K and in other documents we file from time to time with the Securities and Exchange Commission (SEC) that disclose risks and uncertainties that may affect our business. Moreover, we operate in a very competitive and rapidly changing environment. New risks and uncertainties emerge from time to time, and it is

not possible for us to predict all risks and uncertainties that could have an impact on the forward-looking statements contained in this Annual Report on Form 10-K. We cannot assure you that the results, events, and circumstances reflected in the forward-looking statements will be achieved or occur, and actual results, events, or circumstances could differ materially from those described in the forward-looking statements.

The forward-looking statements made in this Annual Report on Form 10-K relate only to events as of the date on which the statements are made. We undertake no obligation to update any forward-looking statements made in this Annual Report on Form 10-K to reflect events or circumstances after the date of this Annual Report on Form 10-K or to reflect new information or the occurrence of unanticipated events, except as required by law. We may not actually achieve the plans, intentions, or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, or investments we may make.

In addition, statements that “we believe” and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this Annual Report on Form 10-K, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain and investors are cautioned not to unduly rely upon these statements.

PART I

Item 1. Business

Overview

Cloudflare's mission is to help build a better Internet.

Today, the Internet is the lifeblood of business and the primary vehicle of commerce and communication for people around the world. While it was brilliantly architected to deliver fault tolerance and robust connectivity, it was not designed to deliver the security, millisecond performance, and reliability required for businesses today.

For decades, a number of vendors have looked to address the core limitations and vulnerabilities of the Internet for businesses that operate online. These vendors built a range of standalone hardware boxes to address the emerging requirements for security, performance, and reliability. These boxes could be deployed in on-premise data centers to deliver functions such as virtual private network (VPN), firewall, routing, traffic optimization, load balancing, and other network services. While they created massive complexity, cost, technical debt, and a tangled web of dependencies for the organizations that deployed them, the approach generally worked and these on-premise “band-aid boxes” were able to alleviate some of the Internet's fundamental security, performance, and reliability problems.

And then the cloud happened.

In recent years, the technology industry has undergone a massive transition from on-premise hardware and software that customers buy, to services in the cloud that they rent. Organizations find themselves at different points in this transition to the cloud. Regardless of where organizations are in their transition, they all face a common set of challenges: they exist in a complex, heterogeneous infrastructure environment which exacerbates the fundamental problems of the Internet more than ever, and the on-premise band-aid boxes that they once relied upon to solve these problems were never designed to work in such an environment. As more workloads move to the cloud, there is no point in installing additional band-aid boxes on premise. An on-premise box will not solve the problems organizations now face. Nor can a business ship a band-aid box to a cloud vendor. Even if they wanted to, there is literally no place to install such a box in the cloud.

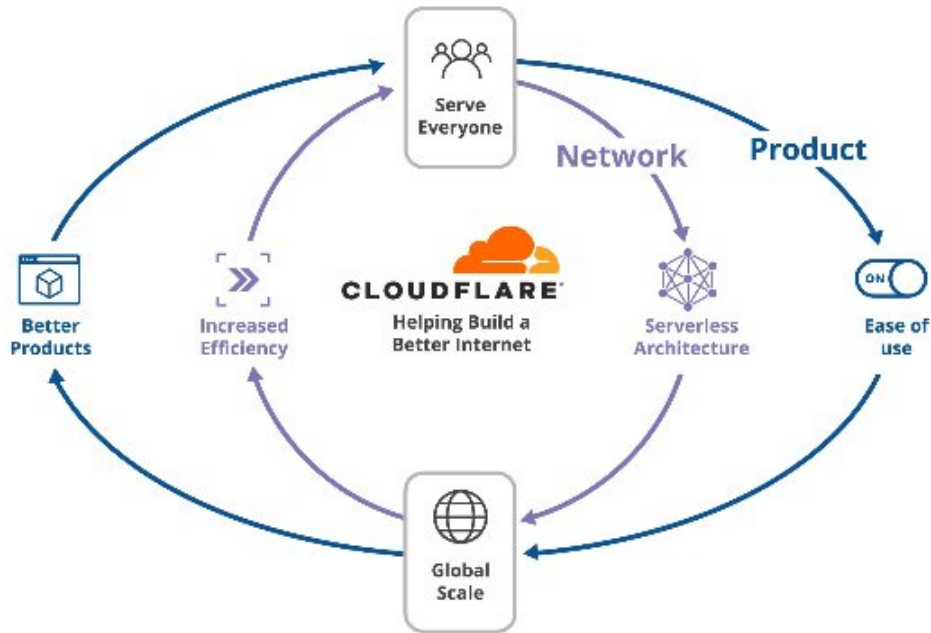
The result is that a major architectural shift at the network layer is now underway. Previously, enterprises would often string together a diverse set of on-premise band-aid boxes from different vendors to solve their network challenges. As these solutions move to the cloud, the network latency, support complexity, and cost of overhead makes stringing together multiple point-cloud solutions that only address a specific network need untenable. Customers are therefore looking to consolidate behind a single platform.

Cloudflare has built a global cloud platform that delivers a broad range of network services to businesses of all sizes and in all geographies—making them more secure, enhancing the performance of their business-critical applications, and eliminating the cost and complexity of managing individual network hardware. Our platform serves as a scalable, easy-to-use, unified control plane to deliver security, performance, and reliability across on-premise, hybrid, cloud, and software-as-a-service (SaaS) applications. Customers who join our platform using one product can adopt our other seamlessly integrated products with a single click. We serve comprehensive customer needs across security, performance, and reliability. Our platform and business model are designed to make rolling out new products fast and efficient. As of December 31, 2019, more than 10% of the Fortune 1,000 were paying Cloudflare customers.

Our Network

We have built an efficient, scalable network that forms the basis of our platform on which we can rapidly develop and deploy our products for our customers. Together, the development of our network and products create the interconnected flywheels that drive our business.

Cloudflare's Network and Product Flywheels



Network Flywheel: We have created a network architecture that is flexible, scalable, and gets more and more efficient as it expands. We designed and built our network to be able to grow capacity quickly and inexpensively; to allow for every server, in every city, to run every Cloudflare service; and to allow us to shift customers and traffic across our network efficiently. We refer to this architecture as “serverless” because it means we can deploy standard, commodity hardware, and our product developers and customers do not need to worry about the underlying servers. Our software manages the deployment and execution of our product developers’ code and our customers’ code across our network. Because we manage the execution and prioritization of code running across our network, it means that we are both able to optimize the performance of our highest paying customers, and also effectively leverage idle capacity across our network. We have chosen to utilize this idle capacity to create a free tier of service—which has generated substantial global scale for us. In turn, this scale makes us attractive partners for Internet Service Providers (ISPs) globally, which reduces our co-location and bandwidth costs. As our network grows, these dynamics become even more powerful. Today, our network spans 200 cities in over 90 countries and interconnects with over 8,500 networks globally, including major ISPs, cloud services, and enterprises.

Product Flywheel: We operate our business with the idea of serving the broadest possible market. To do this, we made our products easy to use and affordable, and were able to provide our entry level plan for free in part because of the cost advantage of our network. We leverage the resulting customer scale and diversity to continuously make our products better. Our machine learning systems improve our products with every customer’s request, optimizing our security, performance, and reliability globally. The over 26 million Internet properties (e.g., domains, websites, application programming interface (API), and mobile applications) that use our platform comprise a global sensor network, which functions like an immune system for the Internet—routing around congestion, optimizing for traffic conditions, and using data on cyber attacks against any one of our customers to better protect them all.

Feedback from our diverse, global customer base helps us expand into new, adjacent product areas. Since our customers’ traffic is already passing through our network, our serverless architecture means we can add products on our platform to solve new network challenges without significantly increasing our incremental costs. This allows us to provide new products at competitive prices and further expand the overall market.

Growth Strategy

Key elements of our growth strategy include:

- **Acquire New Customers:** We believe that any person or business that relies on the Internet to deliver products, services, or content can be a Cloudflare customer. We will continue to grow our customer base across all of our offerings—free, pay-as-you-go (which we previously referred to as self-serve customers), and contracted (which we previously referred to as enterprise customers).
 - **Free:** We will continue to invest in awareness and functionality of our products to drive overall customer growth beyond the over 26 million Internet properties using Cloudflare today.
 - **Pay-as-you-go and Contracted:** We believe we have an opportunity to continue to grow our paying customer base, from small customers through to large contracted customers. In order to do this, we will continue to focus on growth in our pay-as-you-go channels by improving targeting and conversion as well as expanding our product offering. In addition, we intend to leverage our proven sales force to sell our products to larger and larger contracted customers.
- **Expand Our Relationships with Existing Customers:** Customers expand their relationships with us by upgrading to premium plans, increasing their usage of our platform, or adding products. Once a customer has adopted one product on our platform, it can easily add additional products with a single click.
- **Develop New Products and Solutions:** We continue to invest in new product development and building new solutions for our customers, and as we onboard more customers and more traffic on our network, our ability to identify promising new avenues for innovation improves. We have proven our ability to launch new products, having successfully brought many new products and product families to market. For example, we recently announced a new suite of products called Cloudflare for Teams to protect the internal resources of organizations.
- **Extend Our Serverless Platform Strategy:** We have seen a growing number of customers that have chosen to bring applications to market using Cloudflare Workers. This opens up an entirely new market for us: storage and compute. Our Cloudflare Workers offering is attractive in the market for reasons of our architecture and the power of our network, and we believe adoption of Cloudflare Workers will continue to grow as we further invest in it.

Our Products

We deliver a platform of deeply integrated products that serve as a unified control plane for our customers. Customers can quickly and easily join Cloudflare by using just one of our products on our platform and expand over time by adding most products with a single click. Our integrated suite of products consists of (1) solutions for an organization's infrastructure to deliver security, performance, and reliability, (2) solutions to serve an organization's internal resources, (3) platform-based solutions, and (4) consumer offerings.

Cloudflare for Infrastructure

Cloudflare for Infrastructure is a suite of products to help ensure the resources and infrastructure that are exposed to the Internet are safe from attack, fast, and reliable.

Security

We provide an integrated cloud-based security solution designed to secure any combination of platforms, including public cloud, private cloud, on-premise, SaaS applications, and IoT devices. Our key security product offerings include:

- **Cloud Firewall:** Protects a customer's Internet properties from common vulnerabilities like SQL injection attacks, cross-site scripting, and cross-site forgery requests, with no changes to its existing infrastructure.
- **Bot Management:** Blocks undesired or malicious Internet traffic created by malicious software algorithms called bots, while still allowing useful bots to access Internet properties through machine learning and behavioral analytics.

- **Distributed Denial of Service (DDoS):** Protects a customer's Internet properties from a Distributed Denial of Service attack (product known as "*Unmetered Mitigation*").
- **Infrastructure Protection:** Extends the benefits of our network to customers' on-premise and data center networks (product known as "*Magic Transit*"). Magic Transit is deployed in front of an enterprise network and protects it at the IP layer from DDoS attacks and enables provisioning of a full suite of virtual network functions, including IP packet filtering and firewalling, load balancing, and traffic management tools.
- **IoT:** Protects IoT devices through the specialized application of our cloud-based security products (product known as "*Cloudflare Orbit*").
- **SSL / TLS:** Manages encrypted web traffic to prevent data theft and tampering to improve security as well as application and website productivity (products known as "*SSL for SaaS*," "*Dedicated & Custom Certs*," "*Universal SSL*," "*Keyless SSL*," and "*GeoKey Manager*").
- **Secure Origin Connection:** Creates an encrypted tunnel between a customer's origin web server and the closest servers on our network without risking opening any public inbound ports (product known as "*Cloudflare Argo Tunnel*").
- **Rate Limiting:** Provides the ability to configure thresholds, define responses, and gain valuable insights into specific URLs of websites, applications, or API endpoints.

Performance

Our performance solutions improve conversions, reduce churn, and improve visitor experiences by accelerating web and mobile performance, while keeping applications available. Our key performance product offerings include:

- **Content Delivery:** Accelerates content delivery time by automatically serving our customers most popular content from our network locations close to our customers' users.
- **Intelligent Routing:** Improves Internet performance by intelligently routing end users through less congested and more reliable paths over the Internet using our network (product known as "*Cloudflare Argo*").
- **Content Optimization:** Automatically adjusts the way content is delivered based on the particular device accessing the site to improve speed without affecting the customer's Internet property look or features.
- **Mobile Optimization:** Provides mobile-specific optimization and caching of content for fast delivery to mobile end users.
- **Image Optimization:** Automatically adjusts the size and quality of the image to the device and network connection for improved end-user experience.
- **Mobile Software Development Kit (SDK):** Offers developers cutting-edge network diagnostic tools for any application without dependencies on infrastructure, enabling them to more easily create high performing and engaging applications.

Reliability

Our reliability solutions improve the overall operational experience of the Internet and allow our customers to run their digital operations much more efficiently. Our key reliability product offerings include:

- **Load Balancing:** Enhances performance and reliability for single, hybrid-cloud, and multi-cloud environments. Our cloud-based products provide local and global load balancing to reduce latency by distributing traffic across multiple servers or by routing traffic to the closest geolocation region.
- **Anycast Network:** Enhances performance and reliability by globally and automatically load balancing Internet-scale traffic across our network based on proximity of request and other factors.
- **Virtual Backbone:** Connects our global network, and by extension, our customer's Internet properties, into a virtual network that is always encrypted, optimized for performance, and highly redundant.
- **DNS:** Keeps Internet properties online and available around the world (products known as "*Cloudflare DNS*" and "*Cloudflare Secondary DNS*").
- **DNS Resolver:** Returns the IP addresses of servers when a user enters a domain name. We are one of the world's fastest public DNS Resolvers, which benefits our DNS customers.

- **Always Online:** Serves a limited copy of a cached website, to keep it online for a customer's visitors should the customer's origin server go down.

Cloudflare for Teams

Cloudflare for Teams provides a comprehensive solution to protect an organization's internal resources — devices, users, applications, and data. The solution has two components: one to provide simple, secure access for internal applications; and another to provide a secure path to the Internet for users and devices. Together, they deliver holistic internal security for organizations.

- **Zero Trust Security and Access Management:** Secures, authenticates, and monitors user access to internal applications and infrastructure hosted on-premise or in cloud environments, ensuring that every connection has been validated and logged (product known as "Cloudflare Access").
- **Secure Web Gateway:** Announced solution for release in stages during 2020 that is designed to secure and filter outbound Internet traffic to protect employees from threats on the public Internet and to help protect Internet-browsing employees from bringing malware or vulnerable code into an organization (product known as "Cloudflare Gateway"). In January 2020, we acquired S2 Systems Corporation, a company that has developed patented browser isolation technology to make everyday web browsing safer and faster, and we expect to incorporate this technology into Cloudflare Gateway.

Platform

By using our platform, developers can build serverless applications that scale without needing to spend time and effort on infrastructure or operations. This enables them to deliver more performant applications that have instant global scale, all while improving their productivity. Our key serverless products include:

- **Serverless Computing/Programmable Network:** Allows developers to augment existing applications or create entirely new ones through a lightweight execution environment without configuring or maintaining infrastructure (product known as "Cloudflare Workers").
- **Cloudflare Apps:** Offers an open platform of tools which can be installed instantly with just a few clicks. We have further expanded our offering through Cloudflare Apps with Workers, which allows developers to package Cloudflare Workers, delivering new Cloudflare Workers-powered experiences to our customers.
- **Analytics:** Provides insights into the traffic of our customers' Internet properties that are unique and proprietary to our platform. We help our customers monitor threats, search for specific search engine crawlers, understand DNS query traffic, and analyze real time data traffic.

Consumer Offerings

Our consumer products make it easy for individuals to have a performant and secure Internet experience. Adoption of our consumer offerings makes our business offerings more powerful and adoption of our business offerings improves our consumer offerings. Our consumer offerings also have been an effective and differentiated marketing channel to increase the awareness of our brand. Our key consumer product offerings include:

- **Consumer DNS Resolver:** A consumer app that provides a fast and private way to browse the Internet (product known as "1.1.1.1"). 1.1.1.1 is a public DNS resolver, but unlike most DNS resolvers, we do not sell user data to advertisers. Our implementation of 1.1.1.1 makes it among the fastest resolvers available, and we support DNS over HTTPS (DoH) which encrypts and secures consumers' DNS requests.
- **Consumer VPN:** A VPN for consumers designed to secure and accelerate traffic on mobile devices (product known as "Warp"). The basic version of Warp is included as an option with the 1.1.1.1 App for free; and a premium version that accelerates a user's Internet access is available for purchase.

Our Customers

We view our approximately 2.6 million free and paying customers (excluding customers of our consumer offerings), which manage over 26 million Internet properties on our platform, as part of a broad, global community.

As of December 31, 2019, we had approximately 83,000 paying customers across more than 160 countries. Our paying customer base is highly diversified across organizations of all sizes in every major industry vertical including technology, healthcare, financial services, consumer and retail, industrial, non-profit, and government. Our large customer count has increased from 184 as of December 31, 2017 to 313 as of December 31, 2018 to 550 as of December 31, 2019. Refer to Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations for additional information regarding the definitions of "paying customers" and our "large customers."

No single customer accounted for more than 10% of our revenue in the years ended December 31, 2019, 2018, or 2017.

Our Technology

Our distributed and proprietary network is the core of our technology, and enables us to move data seamlessly from nearly any point on earth in a fast, efficient, and reliable manner. Our network has been built from the ground up as a single software stack we developed that runs our products in 200 cities and over 90 countries worldwide. This allows us to scale quickly while offering a wide range of products and simultaneously lowering operating expenses.

Efficient Serverless Network Design

We have developed a single software stack that is responsible for all of our products. We have been able to efficiently scale our network by building it with inexpensive, commodity hardware components that are powered by our proprietary software. This integrated stack has made scaling, debugging, optimizing, and operating our platform easier and cheaper than competing services. It also allows us to deploy changes across our entire worldwide network in a matter of seconds. In addition, we embed encryption chips into the motherboards of our servers that are designed to preclude anyone else from running unauthorized software on our equipment. This allows us to securely, quickly, and inexpensively expand our infrastructure far and wide in order to offer the best service and drive down operating costs.

Our serverless network design allows each individual machine in our global network to run the complete suite of our software and provide all of our products. We have built coordination software that ties together these thousands of machines into a single global network that allows us to efficiently route traffic to different physical locations and to individual machines. This enables us to maximize utilization of our commodity hardware and provide different service levels to different customers. It also allows our network to get more efficient and powerful as we add each incremental server, regardless of where it is located. Every time we add a server or add a new city, our entire network improves.

Network Flexibility

Our platform is API-driven and designed for developers. We have an API-first mentality, which means that anything that a customer can do via our web interface can also be performed by our API. This allows our customers to easily embed our service in their own workflows. For example, a customer can use our web interface or API to change its custom configuration and that will be rolled out globally by our configuration software in seconds. This contrasts with many vendors' solutions where configuration changes can take hours and require professional services.

Our software dynamically spreads loads across our entire distributed network depending on current network conditions and traffic priority. This enables us to deliver different quality of service depending on what customers pay us, ensuring our highest paying customers get the best performance and permitting us to serve our lower paying and free customers from excess capacity.

Given the distributed and highly efficient nature of our network, we can easily develop new features and products on our platform and deploy them without significant incremental costs. The flexibility of our serverless platform now allows us to open it to third parties to write code directly on our network through our Cloudflare Workers product.

Research and Development

Our research and development organization is responsible for the design, development, testing, and delivery of our global platform and products. Our R&D team's structure allows us to build a broad swathe of products while continuing to innovate. One group works closely with our product management organization to improve, refine and expand our existing products. A second independent group builds greenfield opportunities that aim to expand our market and reach new markets. In addition, our research team ensures our platform and customers are secured with the latest cryptography.

We prioritize investment in research and development. Those investments have continued to result in the launch of new products that have helped us attract new customers and sell more products to our existing customers. Our research and development organization currently is distributed primarily across three cities: London, United Kingdom; San Francisco, California; and Austin, Texas.

Sales

We have a multi-pronged go to market approach that allows us to efficiently serve the needs of very small to very large customers. By using a combination of web sales, direct sales, and indirect sales, we are able to serve the greatest diversity of customers across all sizes.

We sell our pay-as-you-go plans through our website and hosting partners where a customer can either start on a free or paid plan and, as we demonstrate value, upgrade over time. Our pay-as-you-go customers are able to sign up for our Pro or Business plans that are payable monthly. Pay-as-you-go customers are able to onboard and customize our products through our website and pay for their subscription using a credit card. Our automated and easy to use process enables us to efficiently onboard thousands of new customers per day without requiring any interaction with our sales team. As pay-as-you-go customers evolve their usage of our products, some upgrade to an Enterprise plan for greater control, higher service levels, or productivity-related tools.

We sell our Enterprise plan directly through our technically-oriented inside and field sales teams, and also indirectly through our ecosystem of partners. Our Enterprise plan customers, which we refer to as our contracted customers, typically are replacing on-premise hardware with cloud network services, or consolidating multiple existing cloud services onto one platform with Cloudflare. For large contracted customers, our relationships often start with a portion of the customer's overall network needs and expand over time as they consolidate other vendors' services and increase their adoption of our platform.

Marketing

Our marketing aims to clearly communicate the value of our offerings to a large and diverse set of global customers at scale. We drive organic awareness and adoption of our platform by providing a free offering that enables millions of users to experience the benefits of our global cloud platform before they adopt our pay-as-you-go offerings or contract for our Enterprise plan. We engage with developers across blogs, social media, and other channels to help build our brand and visibility among technical communities. In addition, our consumer products, including 1.1.1.1 and Warp, provide an effective and differentiated marketing channel to expand the awareness of our brand.

We invest in a variety of targeted digital and non-digital marketing activities and programs to build awareness, engage with prospects, and build pipeline for our global sales teams. We also share stories of how large customers are rapidly adopting our services across use cases, industry verticals, and geographies, to communicate customer trust and our market momentum.

Competition

We compete in the market for network services primarily across three categories:

- *On-premise network hardware vendors* such as Cisco Systems, Inc., F5 Networks, Inc., Check Point Software Technologies Ltd., FireEye, Inc., Imperva, Inc., Palo Alto Networks, Inc., Juniper Networks, Inc.,

and Riverbed Technology, Inc. We compete with these companies to provide security, performance, and reliability services. Today, they represent our primary competition. We believe we are positioned favorably against these vendors with our cloud-based, multitenant approach that is better suited to an increasingly cloud-based world and that allows customers to treat our services as operational as opposed to capital costs.

- *Point-cloud solution vendors* in various categories including cloud security vendors (such as Zscaler, Inc. and Cisco Systems, Inc. through Umbrella (formerly known as OpenDNS)), CDN vendors (such as Akamai Technologies, Inc., Limelight Networks, Inc., Fastly, Inc., and Verizon Communications Inc. through Edgecast), DNS services vendors (such as Oracle Corporation through DYN, Neustar, Inc., and UltraDNS Corporation), and cloud SD-WAN vendors. These providers are all focused on delivering point-cloud solutions. However, customers are increasingly looking for an integrated platform offering security, performance, and reliability through a single vendor.
- *A subset of services provided by traditional public cloud vendors* such as Amazon.com, Inc. through Amazon Web Services, Alphabet Inc. through Google Cloud Platform, Microsoft Corporation through Azure, and Alibaba Group Holding Limited through Alibaba Cloud. Today, we work closely with these companies, some of whom are both partners and investors. In the long term, we may increasingly compete with them. We believe customers want the ability to set a consistent policy across their on-premise, cloud, hybrid, and SaaS vendors, and be able to enforce that policy through an independent platform. Customers are concerned about being locked in to any one public cloud provider. Our ability to efficiently and inexpensively move data between multiple clouds allows our customers to pick and choose the best from any cloud provider without fearing lock-in. Furthermore, unlike some public cloud providers, our business model aligns fully with the interests of our customers. We do not sell user data. We do not aim to compete with our customers.

As we open our serverless platform to third-party developers, we believe we will increasingly compete with public cloud vendors for storage and compute workloads. Because of the efficiency of our Cloudflare Workers product, we are able to offer it at prices that are highly competitive with public cloud vendors, and because it is distributed across our entire network, it enables the development of applications that were not previously possible on the traditional public cloud.

The principal competitive factors in the markets in which we operate include:

- breadth of platform features and continued innovation;
- integrated solutions across security, performance, and reliability;
- unified control plane across on-premise, cloud, hybrid, and SaaS infrastructure;
- performance, availability, and effectiveness;
- platform scalability;
- total cost of ownership;
- ease of adoption and use;
- global network coverage;
- quality of customer support;
- programmability and extensibility of platform; and
- independence, reputation, and trust.

We believe that we are positioned favorably against our competitors based on these principal competitive factors.

Core Values, Initiatives We Support, and Employees

Core Values

Cloudflare's mission is to help build a better Internet. Our core values are at the heart of how we live up to our mission. We have three core values: we are principled, we are curious, and we are transparent. By principled, we mean thoughtful, consistent, and long-term oriented about what the right course of action is. By curious, we mean taking on big challenges and understanding the why and how behind things. Finally, by transparent, we mean being clear in the why and the how we decide to do things both internally and externally. These core values are embodied

in everything we do. They guide our actions on a day to day basis. They highlight to customers and potential prospects what we stand for, and we look for them in all the employees we hire.

Initiatives We Support

We have launched various initiatives to help build a better Internet, including:

- **Project Galileo:** Since 2014, we have equipped at-risk public interest groups with a set of our products at no cost to defend themselves against attacks that would otherwise censor their work. The nearly 1,000 recipients of services under Project Galileo include independent journalists reporting on repressive regimes, minority rights and arts groups in closed societies, and civil society organizations supporting democratic movements.
- **Athenian Project:** We created Athenian Project to ensure that state and local governments' election websites have the highest level of protection and reliability for free. We have provided these benefits to more than 150 state and local election websites.
- **Cloudflare for Campaigns:** In January 2020, we announced the Cloudflare for Campaigns program that provides security services to help political campaigns in the United States and around the world defend against cyberattacks and election interference. We allow any eligible campaign to access a variety of our security services, including enhanced firewall protection, DDoS attack mitigation, as well as internal data management and security controls.

Our Employees

As of December 31, 2019, we had 1,270 full-time employees, including 439 employees located outside of the United States. We also engage contractors and consultants. None of our employees are represented by a labor union. We have not experienced any work stoppages and we believe that our employee relations are strong.

Intellectual Property

Our success depends in part upon our ability to protect and use our core technology and intellectual property rights. We rely on a combination of patents, copyrights, trademarks, trade secrets, know-how, contractual provisions, and confidentiality procedures to protect our intellectual property rights. As of December 31, 2019, we had over 110 issued patents and over 70 pending patent applications in the United States and abroad. These patents and patent applications seek to protect our proprietary inventions relevant to our business. Our issued patents are scheduled to expire between 2030 and 2039, and cover various aspects of our platform and products. In addition, we have registered "Cloudflare" as a trademark in the United States and other jurisdictions and we have filed other trademark applications in the United States. We are also the registered holder of a variety of domestic and international domain names that include "Cloudflare" (including "Cloudflare.com").

In addition to the protection provided by our intellectual property rights, we enter into proprietary information and invention assignment agreements or similar agreements with our employees, consultants, and contractors. We further seek to control the use of our proprietary technology and intellectual property rights through provisions in our subscription agreements.

Corporate Information

Cloudflare, Inc. was incorporated in the state of Delaware in July 2009. Our principal executive offices are located at 101 Townsend Street, San Francisco, California 94107, and our telephone number is (888) 993-5273. We

completed our initial public offering in September 2019, and our Class A common stock is listed on the New York Stock Exchange under the symbol "NET."

Additional Information

Our website is located at <https://www.cloudflare.com>, our investor relations website is located at [cloudflare.NET](https://investor.cloudflare.com), our news site is located at <https://www.cloudflare.com/press>, our corporate blog's address is <https://blog.cloudflare.com>, and our Twitter account is @Cloudflare. We have used, and intend to continue to use, our website, investor relations website, news site, blog, and Twitter account as a means of disclosing material non-public information and for complying with our disclosure obligations under Regulation FD. The following filings are available through our investor relations website after we file them with the Securities and Exchange Commission (SEC): Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, current reports on Form 8-K, and our Proxy Statement for our annual meeting of stockholders. These filings are also available for download free of charge on our investor relations website. The SEC also maintains an Internet website that contains reports, proxy statements and other information about issuers, like us, that file electronically with the SEC. The address of that website is www.sec.gov.

We webcast our earnings calls and certain events we participate in or host with members of the investment community on our investor relations website. Additionally, we provide notifications of news or announcements regarding our financial performance, including SEC filings, investor events, press and earnings releases, and blogs as part of our investor relations website. Further corporate governance information, including our corporate governance guidelines, code of business conduct and ethics, and committee charters is also available on our investor relations website under the heading "Governance."

The contents of the websites provided above are not intended to be incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC. Further, our references to the URLs for these websites are intended to be inactive textual references only.

Item 1A. Risk Factors

Our business involves significant risks, some of which are described below. You should carefully consider the risks and uncertainties described below, together with all of the other information in this Annual Report on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes. Any of the following risks could have an adverse effect on our business, results of operations, financial condition, or prospects, and could cause the trading price of our Class A common stock to decline. Our business, results of operations, financial condition, or prospects could also be harmed by risks and uncertainties that are not presently known to us or that we currently believe are not material. In that event, the market price of our Class A common stock could decline, and you could lose part or all of your investment.

Risks Related to Our Business and Our Industry

We have a history of net losses and may not be able to achieve or sustain profitability in the future.

We have incurred net losses in all periods since we began operations and we expect we will continue to incur net losses for the foreseeable future. We experienced net losses of \$105.8 million, \$87.2 million, and \$10.7 million for the years ended December 31, 2019, 2018, and 2017, respectively, and as of December 31, 2019, we had an accumulated deficit of \$301.7 million. Because the markets for our products are rapidly evolving, it is difficult for us to predict our future results of operations. We expect our operating expenses to increase over the next several years as we continue to hire additional personnel, expand our operations and infrastructure both domestically and internationally, and continue to develop our products. In addition to the expected costs to grow our business, we also are incurring significant additional legal, accounting, and other expenses as a public company, as described in greater detail in the risk factors below. If we fail to increase our revenue to offset the increases in our operating expenses, we may not achieve or sustain profitability in the future.

We have experienced rapid revenue growth, which may not be indicative of our future performance.

We have experienced rapid revenue growth in recent periods, with revenue of \$287.0 million, \$192.7 million, and \$134.9 million for the years ended December 31, 2019, 2018, and 2017, respectively. You should not consider our recent growth in revenue as indicative of our future performance. In particular, our revenue growth rates may decline in the future and may not be sufficient to achieve and sustain profitability, as we also expect our costs to increase in future periods. We believe that historical comparisons of our revenue may not be meaningful and should not be relied upon as an indication of future performance. Accordingly, you should not rely on our revenue and other growth for any prior quarter or year as an indication of our future revenue or revenue growth.

Our rapid growth may also make it difficult to evaluate our future prospects. Our ability to forecast our future results of operations is subject to a number of uncertainties, including our ability to effectively plan for and model future growth. If we fail to achieve the necessary level of efficiency in our organization as it grows, or if we are not able to accurately forecast future growth, our business, results of operations, and financial condition could be harmed.

If we are unable to attract new paying and free customers, our future results of operations could be harmed.

The success of our business principally depends on our ability to attract new paying and free customers. To do so, we must persuade decision makers at potential customers that our products offer significant advantages over those of our competitors. Other factors, many of which are out of our control, may now or in the future impact our ability to add new paying and free customers, including:

- potential customers' commitments to existing equipment or vendors;
- potential customers' greater familiarity and/or comfort with on-premises, appliance-based products;
- actual or perceived switching costs;
- our failure to obtain or maintain government or industry security certifications for our network and products;
- negative media, industry, or financial analyst commentary regarding our products and the identities and activities of some of our paying and free customers;
- the adoption of new, or amendment of existing, laws, rules, or regulations that negatively impact the utility of our network and products;
- our failure to expand, retain, and motivate our sales and marketing personnel;
- our failure to develop or expand relationships with existing channel partners or to attract new channel partners;
- our failure to help our customers to successfully deploy and use our products;
- our failure to educate our customers about our platform and products;
- the perceived risk, commencement, or outcome of litigation; and
- deteriorating general economic conditions.

If our efforts to attract new paying customers are not successful, our revenue and rate of revenue growth may decline, we may not achieve profitability, and our future results of operations could be materially harmed. If our efforts to attract new free customers are not successful, the benefits to our network and product development cycles from our strategy of providing a free subscription plan will be diminished.

Our business depends on our ability to retain and upgrade paying customers and, to a lesser extent, convert free customers to paying customers, and any decline in renewals, upgrades, or conversions could adversely affect our future results of operations.

Our business is subscription-based and it is important for our business and financial results that our paying customers renew their subscriptions for our products when existing contract terms expire. Our pay-as-you-go customers pay with a credit card on a monthly basis and can terminate their subscriptions at will with little advance notice. Because pay-as-you-go customers that subscribe to our basic subscription plans are an important source of revenue, this ease of termination could cause our results of operations to fluctuate significantly from quarter to quarter. Our contracted customers, which consist of customers that sign up for our Enterprise plan, enter into longer term agreements ranging from one to three years, and they generally have no obligation to renew their subscriptions for our products after the expiration of their contractual period and are allowed to cancel their subscriptions in the case of an uncured material breach of the agreement. Some contracted customers also have

agreements that allow them to terminate the agreement without cause upon little or no advance written notice, or upon our failure to meet certain service level commitments, or to obtain and maintain industry security certifications within a specified time frame. Due to our varied customer base and short average subscription periods, it is difficult to accurately predict our long-term customer retention rate. Our customer retention may decline or fluctuate as a result of a number of factors, including our customers' satisfaction with the security, performance, and reliability of our products, our prices and subscription plans, our customers' budgetary restrictions, mergers, acquisitions, joint ventures, and business partnerships and relationships involving our customers, the perception that competitive products provide better or less expensive options, negative public perception of us or our free and paying customers, and deteriorating general economic conditions.

Our future financial performance also depends in part on our ability to continue to upgrade paying customers to higher-tier subscriptions or additional paid products and, to a lesser extent, to convert free customers into paying customers. Conversely, our paying customers may convert to lower-cost or free plans if they do not see the marginal value in paying for our higher-cost plans, thereby impacting our ability to increase revenue. Moreover, our free customers have no obligation to transition to paying customers at any point. In order to expand our commercial relationship with our customers, existing paying and free customers must decide that the incremental cost associated with such an upgrade is justified by the additional functionality. For example, some of our paying customers may decide that our enterprise offerings do not provide sufficient incremental value to upgrade from our pay-as-you-go offering. Our customers' decision whether to upgrade their subscription is driven by a number of factors, including customer satisfaction with the security, performance, and reliability of our platform and products, customer security and networking issues and requirements, general economic conditions, and customer reaction to the price for additional products. If our efforts to expand our relationship with our existing paying and free customers are not successful, our financial condition and results of operations may materially suffer.

Problems with our internal systems, networks, or data, including actual or perceived breaches or failures, could cause our network or products to be perceived as insecure, underperforming, or unreliable, our reputation to be damaged, and our financial results to be negatively impacted.

We face security threats from malicious third parties that could obtain unauthorized access to our internal systems, networks, and data, including the equipment at our network and core co-location facilities. It is virtually impossible for us to entirely mitigate the risk of these security threats and the security, performance, and reliability of our platform and products may be disrupted by third parties, including nation-states, competitors, hackers, disgruntled employees, former employees, or contractors. We also face the possibility of security threats from other sources, such as employee or contractor errors, or malfeasance. For example, hostile third parties, including nation-states, may seek to bribe, extort, or otherwise manipulate our employees or contractors to compromise our platform and products. While we have implemented security measures internally and have integrated security measures into our platform and products, these measures may not function as expected and may not detect or prevent all unauthorized activity, prevent all security breaches, mitigate all security breaches, or protect against all attacks or incidents. Because the equipment in our network co-location facilities is designed to run all of our products, any insertion of malicious code on, unauthorized access to, or other security breach with respect to, this equipment could potentially impact all of our products running on this equipment. We may also experience security breaches and other incidents that may remain undetected for an extended period and, therefore, may have a greater impact on our products and the networks and systems used in our business, and the proprietary and other confidential data contained on our platform or otherwise stored or processed in our operations, and ultimately on our business. We expect to incur significant costs in our efforts to detect and prevent security breaches and other security-related incidents, and we may face increased costs in the event of an actual or perceived security breach or other security-related incident. Our internal systems are exposed to the same cybersecurity risks and consequences of a breach as our customers and other enterprises, any of which could have an adverse effect on our business or reputation. These cybersecurity risks pose a particularly significant risk to a business like ours that is focused on providing highly secure products to customers.

Unauthorized access to, other security breaches of, or security incidents affecting, systems, networks, and data used in our business, including those of our vendors, contractors, or those with which we have strategic relationships, even if not resulting in an actual or perceived breach of our customers' networks, systems, or data, could result in the loss, compromise or corruption of data, loss of business, reputational damage adversely affecting customer or investor confidence, regulatory investigations and orders, litigation, indemnity obligations, damages for contract breach, penalties for violation of applicable laws or regulations, significant costs for remediation, and other liabilities.

Additionally, in the absence of malicious actions, our platform and products may experience errors, failures, vulnerabilities, or bugs that cause our products not to perform as intended. For example, from time to time we are subject to “route leaks” that involve the accidental or, less commonly, illegitimate advertisement of prefixes, or blocks of IP addresses, which propagate across networks such as ours and can lead to incorrect routing of traffic across our network, taking traffic offline, or in extreme cases, potential interception of customers’ traffic by attackers. In June 2019, a route leak spread by a major telecommunications services provider caused significant disruption to our traffic and that of many other providers. Although events like this are outside our control, they could materially harm our reputation and diminish the confidence of our current and potential customers in our platform and products. In addition, deployment of our platform and products into other computing environments may expose these errors, failures, vulnerabilities, or bugs in our products. Any such errors, failures, vulnerabilities, or bugs may not be found until after they are deployed to our customers and may create the perception that our platform and products are insecure, underperforming, or unreliable. In July 2019, we deployed an update to our web application firewall and certain aspects of the related software code resulted in excessive consumption of computing resources across our network, resulting in an outage on our network. While the June 2019 route leak and July 2019 outage did not have a material impact on our results of operations or financial condition, any similar events that may occur in the future may have a material adverse impact on our results of operations or financial condition. We also provide frequent updates and fundamental enhancements to our platform and products, which increase the possibility of errors. Our quality assurance procedures and efforts to report, track, and monitor issues with our network may not be sufficient to ensure we detect any such defects in a timely manner. For example, in February 2017, a bug in our software code that processes computer information requests was identified. Instead of the requested data, in certain circumstances this bug, which became known as “Cloudblood,” caused our servers to output data that was not requested. The erroneous data output by our system included, but was not limited to, a portion of our customers’ secure data. There can be no assurance that our software code is or will remain free from actual or perceived errors, failures, vulnerabilities, or bugs, or that we will accurately route or process all requests and traffic on our network. Given the trillions of Internet requests that route through our network on a monthly basis and the large array of Internet properties (e.g., domains, websites, application programming interfaces (APIs), and mobile applications) we service, the impact of any such error, failure, vulnerability, or bug can be large in terms of absolute numbers of affected requests and customers.

Problems with our network or systems, or those of our vendors, contractors, or those with which we have strategic relationships, could result in actual or perceived breaches of our or our customers’ networks and systems or data. Actual or perceived breaches or other security incidents from these or other causes could lead to claims and litigation, indemnity obligations, regulatory audits, proceedings, and investigations and significant legal fees, significant costs for remediation, the expenditure of significant financial resources in efforts to analyze, correct, eliminate, remediate, or work around errors or defects, to address and eliminate vulnerabilities, and to address any applicable legal or contractual obligations relating to any actual or perceived security breach. They could damage our relationships with our existing customers and have a negative impact on our ability to attract and retain new customers. Because our business is focused on providing secure and high performing network services to our customers, we believe that our products and the networks and systems we use in our business could be targets for hackers and others, and that an actual or perceived breach of, or security incident affecting, our networks, systems, or data, could be especially detrimental to our reputation, customer and channel partner confidence in our solution, and our business. Additionally, our products are designed to operate without interruption, including up to a 100% uptime guarantee for our Business and Enterprise plans. If a breach or security incident were to impact the availability of our platform and products, our business, results of operations, and financial condition, as well as our reputation, could be adversely affected.

Any cybersecurity insurance that we carry may be insufficient to cover all liabilities incurred by us in connection with any privacy or cybersecurity incidents or may not cover the kinds of incidents for which we submit claims. For example, insurers may consider cyber attacks by a nation-state as an “act of war” and any associated damages as uninsured. We also cannot be certain that our insurance coverage will be adequate for data handling or data security liabilities actually incurred, that insurance will continue to be available to us on economically reasonable terms, or at all, or that any insurer will not deny coverage as to any future claim. The successful assertion of one or more large claims against us that exceed available insurance coverage, or the occurrence of changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, results of operations, and financial condition, as well as our reputation.

Activities of our paying and free customers or the content of their websites and other Internet properties could subject us to liability.

Through our network, we provide a wide variety of products that enable our customers to exchange information, conduct business, and engage in various online activities both domestically and internationally. Our customers represent more than 26 million Internet properties, many of which utilize our free plan. Our customers may use our platform and products in violation of applicable law or in violation of our terms of service or the customer's own policies. The existing laws relating to the liability of providers of online products and services for activities of their users are highly unsettled and in flux both within the United States and internationally. We are currently and, in the future, may be subject to lawsuits and/or liability arising from the conduct of our customers. Additionally, the conduct of our customers may subject us to regulatory enforcement actions and/or liability. We are a defendant in lawsuits, both in the United States and abroad, seeking injunctive relief and/or damages against us based on content that is made available through our customers' websites. A number of these lawsuits involve copyright infringement claims, and courts in Italy and Germany recently disagreed with our position and directed us to take action by removing access to content of certain sites on our network. There can be no assurance that we will not face similar litigation in the future or that we will prevail in any litigation we are facing or may face. An adverse decision in one or more of these lawsuits could materially and adversely affect our business, results of operations, and financial condition.

Several U.S. federal statutes may apply to us with respect to various activities of our customers, including: the Digital Millennium Copyright Act (the DMCA), which provides recourse for owners of copyrighted material who believe their rights under U.S. copyright law have been infringed on the Internet; and section 230 of the Communications Decency Act (the CDA), which addresses blocking and screening of content on the Internet. Although these and other similar legal provisions, such as the EU e-Commerce Directive, provide limited protections from liability for service providers like us, those protections may not be interpreted in a way that applies to us, may be amended in the future, or may not provide us with complete protection from liability claims. If we are found not to be protected by the safe harbor provisions of the DMCA, CDA or other similar laws, or if we are deemed subject to laws in other countries that may not have the same protections or that may impose more onerous obligations on us, we may owe substantial damages and our brand, reputation, and financial results may be harmed.

Current and future litigation subjects us to claims for very large potential damages based on a significant number of online occurrences under statutory or other damage theories. Such claims may result in liability that exceeds our ability to pay or our insurance coverage. Even if claims against us are ultimately unsuccessful, defending against such claims will increase our legal expenses and divert management's attention from the operation of our business, which could materially and adversely impact our business and results of operations.

Policies and laws in this area remain highly dynamic, and we may face additional theories of intermediary liability in various jurisdictions. For example, in 2019, the European Union (the EU) recently approved a copyright directive that will impose additional obligations on online platforms and failure to comply could give rise to significant liability. And other recent laws in Germany (extremist content), Australia (violent content), and Singapore (online falsehoods), as well as other new laws like them, may also expose Internet companies like us to significant liability. We may incur additional costs to comply with these new laws, which may have an adverse effect on our business, results of operations, and financial condition.

Activities of our paying and free customers or the content of their websites or other Internet properties, as well as our response to those activities, could cause us to experience significant adverse political, business, and reputational consequences with customers, employees, suppliers, government entities, and others.

Activities of our paying and free customers or the content of their websites and other Internet properties could cause us to experience significant adverse political, business, and reputational consequences with customers, employees, suppliers, government entities, and other third parties. Even if we comply with legal obligations to remove or disable customer content, we may maintain relationships with customers that others find hostile, offensive, or inappropriate. For example, we experienced significant negative publicity in connection with the use of our network by *The Daily Stormer*, a neo-Nazi, white supremacist website, around the time of the 2017 protests in Charlottesville, Virginia. We also received negative publicity in connection with the use of our network by 8chan, a forum website that served as inspiration for the 2019 attacks in El Paso, Texas and Christchurch, New Zealand. We are aware of some potential customers that have indicated their decision to not subscribe to our products was impacted, at least in part, by the actions of certain of our paying and free customers. We may also experience other adverse political, business and

reputational consequences with prospective and current customers, employees, suppliers, and others related to the activities of our paying and free customers, especially if such hostile, offensive, or inappropriate use is high profile.

Conversely, actions we take in response to the activities of our paying and free customers, up to and including banning them from using our products, may harm our brand and reputation. Following the events in Charlottesville, Virginia, we terminated the account of *The Daily Stormer*. Similarly, following the events in El Paso, Texas, we terminated the account of 8chan. We received significant adverse feedback for these decisions from those concerned about our ability to pass judgment on our customers and the users of our platform, or to censor them by limiting their access to our products, and we are aware of potential customers who decided not to subscribe to our products because of this.

Although offering a free plan for certain of our products is an important part of our business strategy, we may not be able to realize all of the expected benefits of this strategy and the costs and other detriments associated with our free plan could outweigh the benefits we receive from our free customers.

We have historically offered a free plan for certain of our products. We believe that this strategy is valuable to us and it is an important part of our overall business strategy. However, to the extent that we do not achieve the expected benefits of this strategy, our business may be adversely affected by the costs and detriments of making certain of our products available on a free basis. While we do not receive any revenue from our free customers, we bear incremental expenses and other liabilities as a result of our free customers' continuing free access to our platform and certain of our products. Adverse political, business, and reputational consequences associated with Internet properties we serve that are perceived as hostile, offensive, or inappropriate may also be disproportionately common among our free customers. The vast majority of our customers do not pay for our products. In addition, a substantial majority of our free customers historically have not converted to paying customers and we expect this will continue in the future.

The actual or perceived failure of our products to block malware or prevent a security breach could harm our reputation and adversely impact our business, results of operations, and financial condition.

Our security products are designed to reduce the threat to our customers posed by malware and other Internet security threats. Our security products may fail to detect or prevent malware or security breaches for any number of reasons. Even where our security products perform as intended, the performance of our security products can be negatively impacted by our failure to enhance, expand, or update our network and products; improper classification of websites by our employees, automated systems, and partners which identify and track malicious websites; improper deployment or configuration of our products; and many other factors.

Companies are increasingly subject to a wide variety of attacks on their networks and systems, including traditional computer hackers; malicious code, such as viruses and worms; distributed denial-of-service attacks; sophisticated attacks conducted or sponsored by nation-states; advanced persistent threat intrusions; ransomware; phishing attacks and other forms of social engineering; employee, vendor, or contractor errors or malfeasance; and theft or misuse of intellectual property or business or personal data, including by disgruntled employees, former employees, or contractors. No security solution, including our products, can address all possible security threats or block all methods of penetrating a network or otherwise perpetrating a security incident. Accordingly, our security products may be unable to detect or prevent a threat until after our customers are impacted. As our products are adopted by an increasing number of enterprises, it is possible that the individuals and organizations behind cyber threats will focus on identifying ways to circumvent or defeat our security products. If our network is targeted by attacks specifically designed to disrupt it, it could create the perception that our security products are not capable of providing adequate security. As a provider of security products, any perceived lack of security to our network or any of our products could erode our customers' and potential customers' trust in our platform and products. Moreover, a high-profile security breach of another cloud services provider could cause our customers and potential customers to lose trust in cloud solutions generally, and cloud-based products like ours in particular. Any such loss of trust could materially and adversely impact our ability to retain existing customers or attract new customers.

Our customers must rely on complex network and security infrastructures, which include products and services from multiple vendors, to secure their networks. If any of our customers becomes infected with malware, or experiences a security breach, they could be disappointed with our products, regardless of whether our security products are intended to block the attack or would have blocked the attack if the customer had properly configured our products or their network, or taken other steps within their control. For example, in April 2017, we published details of a web cache deception attack method that exploits the misconfiguration of websites to circumvent reverse-proxy systems

such as ours. While the vulnerability associated with this attack method relates to misconfiguration of websites outside of our control, a customer experiencing a security event related to this vulnerability may nevertheless blame us or become dissatisfied with our products as a result. Additionally, if any enterprises that are publicly known to use our platform and products are the subject of a cyber attack that becomes publicized, this could harm our reputation and our current or potential customers may look to our competitors for alternatives to our platform and products.

From time to time, industry or financial analysts and research firms test our platform and related security products against other security products. Our products may fail to detect or prevent threats in any particular test for a number of reasons, including misconfiguration. To the extent potential customers, industry or financial analysts, or testing firms believe that the occurrence of a failure to detect or prevent any particular threat is a flaw or indicates that our products do not provide significant value or provide less value than competitive solutions, our reputation and business could be materially harmed.

Any real or perceived flaws in our network, or any actual or perceived security breaches of our customers, could result in:

- a loss of existing or potential customers or channel partners;
- delayed or lost sales and harm to our financial condition and results of operations;
- a delay in attaining, or the failure to attain, market acceptance of our products;
- the expenditure of significant financial resources in efforts to analyze, correct, eliminate, remediate, or work around errors or defects, to address and eliminate vulnerabilities, and to address any applicable legal or contractual obligations relating to any actual or perceived security breach;
- negative publicity and damage to our reputation and brand; and
- legal claims and demands (including for stolen assets or information, repair of system damages, and compensation to customers and business partners), litigation, regulatory audits, proceedings or investigations, and other liability.

Any of the above results could materially and adversely affect our business, results of operations, and financial condition.

If our global network that delivers our products or the core co-location facilities we use to operate our network are damaged or otherwise fail to meet the requirement of our business, our ability to provide access to our platform and products to our customers and maintain the performance of our network could be negatively impacted, which could cause our business, results of operations and financial condition to suffer.

As of December 31, 2019, we hosted our global network and served our customers from co-location and ISP-partner facilities located in 200 cities and over 90 countries around the world. In addition to these global facilities, much of the infrastructure for our global network and for our business and operations is maintained through a core co-location facility located in the U.S. Pacific Northwest, a second core co-location facility located in Luxembourg that provides certain redundancy to the U.S. core facility, and through a limited number of other U.S. co-location facilities that provide limited subsets of our network support. While we have electronic and, to a lesser extent, physical access to the components and infrastructure of our network and co-location facilities that are hosted by third parties—including ISP-partner facilities—we do not control the operation of these third-party facilities. Consequently, we may be subject to service disruptions as well as failures to provide adequate support for reasons that are outside of our direct control. All of our co-location and ISP-partner facilities and network infrastructure are vulnerable to damage or interruption from a variety of sources including earthquakes; floods; fires; power loss; system failures; computer viruses; physical or electronic break-ins; human error; malfeasance; or interference, including by disgruntled employees, former employees, or contractors; terrorism; and other catastrophic events. Co-location facilities housing our network infrastructure may also be subject to local administrative actions, changes to legal or permitting requirements, labor disputes, and litigation to stop, limit, or delay operations. Despite precautions taken at these facilities, such as disaster recovery and business continuity arrangements, the occurrence of a natural disaster or an act of terrorism, a decision to close the co-location facilities without adequate notice, or other unanticipated problems at these facilities could result in interruptions or delays in the availability of our network and products, impede our ability to scale our operations, or have other adverse impacts upon our business, results of operations, and financial condition.

The components of our global network are interrelated, such that disruptions or outages affecting one or more of our network co-location facilities may increase the strain on other components of our network. Concurrent disruptions or outages at a number of our network co-location facilities may lead to a cascading effect in which heightened strain on our network causes further disruptions or outages, particularly within the regions where the disruptions and outages occur. In addition, the failure of any of our core co-location facilities for any significant period of time, particularly our U.S. core co-location facility, could place a significant strain upon the ongoing operation of our business, as we have only limited redundant functionality for these facilities. Such a failure of a core co-location facility could degrade and slow down our network, reduce the functionality of our products for our customers, impact our ability to bill our customers, and otherwise materially and adversely impact our business, reputation, and results of operations.

If our customers' or channel partners' access to our platform and products is interrupted or delayed for any reason, our business could suffer.

Any interruption or delay in our customers' or channel partners' access to our platform and products will negatively impact our customers. Our customers depend on the continuous availability of our network for the delivery and use of our products, and our products are designed to operate without interruption, including up to 100% uptime guarantee for our Business and Enterprise plans. If all or a portion of our network were to fail, our customers and partners could lose access to the Internet until such disruption is resolved or they deploy disaster recovery options that allow them to bypass our network. The adverse effects of any network interruptions on our reputation and financial condition may be heightened due to the nature of our business and our customers' expectation of continuous and uninterrupted Internet access and low tolerance for interruptions of any duration. While we do not consider them to have been material, we have experienced, and may in the future experience, network disruptions and other performance problems due to a variety of factors. For example, in July 2019, we deployed an update to our web application firewall and certain aspects of the related software code resulted in excessive consumption of computing resources across our network, resulting in an outage on our network.

The following factors, many of which are beyond our control, can affect the delivery, performance, and availability of our platform and products:

- the development, maintenance, and functioning of the infrastructure of the Internet as a whole;
- the performance and availability of third-party telecommunications services with the necessary speed, data capacity, and security for providing reliable Internet access and services;
- decisions by the owners and operators of the co-location and ISP-partner facilities where our network infrastructure is deployed or by global telecommunications service provider partners who provide us with network bandwidth to terminate our contracts, discontinue services to us, shut down operations or facilities, increase prices, change service levels, limit bandwidth, declare bankruptcy, breach their contracts with us, or prioritize the traffic of other parties;
- the occurrence of earthquakes, floods, fires, power loss, system failures, physical or electronic break-ins, acts of war or terrorism, human error or interference (including by disgruntled employees, former employees, or contractors), and other catastrophic events;
- cyber attacks targeted at us, facilities where our network infrastructure is located, our global telecommunications service provider partners, or the infrastructure of the Internet;
- errors, defects, or performance problems in the software we use to operate our platform and provide our related products to our customers;
- our customers' or channel partners' improper deployment or configuration of our customer's access to our platform and products;
- the maintenance of the APIs in our systems that our partners use to interact with us;
- the failure of our redundancy systems, in the event of a service disruption at one of the facilities hosting our network infrastructure, to redistribute load to other components of our network; and
- the failure of our disaster recovery and business continuity arrangements.

The occurrence of any of these factors, or our inability to efficiently and cost-effectively fix such errors or other problems that may be identified, could damage our reputation, negatively impact our relationship with our customers, or otherwise materially harm our business, results of operations, and financial condition.

Detrimental changes in, or the termination of, any of our co-location relationships, ISP partnerships, or our other interconnection relationships with ISPs could adversely impact our business, results of operations, and financial condition.

Our relationships with ISP partners and other vendors that provide co-location services for our network infrastructure and the pricing and other material contract terms we have with these vendors are important for the maintenance, development, and expansion of our global network. If any of our co-location agreements were to expire or the pricing and other material terms of these agreements were to worsen, our business, results of operations, and financial condition would be adversely affected unless we were able to find a substitute vendor for the impacted facility on comparable or better terms. Moreover, a significant number of our important co-location agreements are with a single company and if our arrangements with this company were to change in a manner adverse to us, we could face difficulty in maintaining or growing our network on commercially viable terms. In addition, as part of our arrangements with some of our ISP partners, the ISP partner has agreed to host our equipment for free or at a discount to the partner's customary rate. There can be no assurances that these ISP partners will continue to provide these types of favorable equipment hosting arrangements in the future.

The efficient and effective operation of our network also relies upon a series of mutually beneficial arrangements with other Internet infrastructure companies. These arrangements are often referred to as "peering" or "interconnection" agreements, and allow us and our ISP partners to reduce bandwidth costs related to operating our respective networks. If the underlying competitive, business, or operational incentives supporting these arrangements were to change, we or our partners might terminate these agreements or allow them to expire. Many of our peering or interconnection agreements have a term of three years or less, after which such agreements auto-renew on an annual basis. Changes to the underlying incentive structure of peering arrangements may result from parties seeking to take advantage of an essential position or enter into exclusive arrangements, changes to U.S. or international laws, regulations, policies, or changes in the norms governing the relationships among Internet infrastructure providers. Without favorable peering arrangements, we would incur significantly increased costs to continue to provide our products at their current levels and such increased costs could adversely impact our business, results of operations, and financial condition. To the extent that additional countries begin to regulate peering with outside networks, our costs may increase and our business and results of operations could be adversely impacted.

Abuse or misuse of our internal network services tools could cause significant harm to our business and reputation.

In order to provide real-time support to our customers, we have created internal network services tools that are used by our employees to diagnose and correct customer security, performance, and reliability issues. If our employees were to intentionally abuse these tools by interfering with or altering our customers' Internet properties, our customers could be significantly harmed. Our employees' inadvertent misuse of these tools could similarly harm our customers. For example, third parties have in the past attempted to induce our employees to use their administrative access to reveal, remove, or disable our customers' information and content, including by submitting fraudulent law enforcement requests, copyright takedown requests, or other content-based complaints. Any such improper disclosure or removal could significantly and adversely impact our business and reputation. While our tools have been developed only for authorized use by our employees, any unauthorized release of these tools to third parties would represent a significant vulnerability in our products. Accordingly, any abuse or misuse of our network services tools could significantly harm our business and reputation. If it became necessary to further restrict the availability or use of our network services tools by our employees in response to any abuse or misuse, our ability to deliver high-quality and timely customer support could be harmed.

We may choose to make public disclosures of negative events about our network, systems, and products when we are not otherwise required by applicable law and those disclosures could materially and adversely impact our business, reputation, and results of operations.

In the past we have been, and in the future we expect to be, transparent about our network, systems, and products with our customers and the public in general. We believe that being rigorously and promptly transparent is an essential part of maintaining trust with our customers. At times, this transparency may result in us publicly disclosing

information regarding negative events about our network, systems, and products in circumstances where we may not be required to do so by applicable law. If and when we choose to make these types of non-legally required public disclosures, we may suffer reputational damage, loss of business, litigation, indemnity obligations, damages for contract breach, penalties for violation of applicable laws or regulations, significant costs for remediation, and other liabilities that could materially and adversely impact our business, reputation, and results of operations.

Our network presence within China is dependent upon our commercial relationship with Baidu, and any detrimental changes in, or the termination of, that relationship could jeopardize our ability to offer an integrated global network that includes China.

We believe our offering of an integrated global network that includes facilities in China is important to our existing and potential future customers. Our ability to continue to offer an integrated network presence that includes China currently is dependent on our commercial relationship with an affiliate of Baidu. Regulation of Internet infrastructure and traffic by the Chinese government creates challenges to the peering of Chinese and non-Chinese networks. We have a strategic agreement with Baidu to provide a solution that accommodates the requirements imposed by Chinese regulations through Baidu's development and operation of facilities in China that are included as part of our network. We have needed to periodically negotiate extensions to our existing agreement with Baidu and there can be no assurance that future extensions will be available on comparable terms. The term of our current agreement with Baidu expires at the end of 2020, but is subject to earlier termination by either party under certain circumstances such as the other party's material breach. In addition, the agreement with Baidu can be terminated by Baidu under certain circumstances if necessary Chinese governmental approvals are revoked or become limited or impaired or if public law or regulatory action by the Chinese or U.S. government expressly prohibits or materially restricts the collaboration contemplated by the agreement. The risk of such an early termination event may have increased during the current environment of economic trade negotiations and tensions between the Chinese and U.S. governments. Although we have been successful in negotiating extensions of this agreement in the past, we cannot provide any assurance that we will continue to be able to do so in the future if we determine that we would like to continue to extend the agreement. If our commercial relationship with Baidu were terminated, identifying an alternative solution in China could be difficult, time-consuming, and expensive. Even if an alternative solution is identified, we cannot be certain that the economic terms or performance of any such alternative arrangement will be comparable to our existing relationship with Baidu, which could materially negatively impact our financial results and customer satisfaction with such alternative arrangement. A lack of network presence in China would represent a significant loss of utility to many of our customers and could materially harm our business.

Our customers that use our network presence in China through our Baidu commercial relationship are subject to Chinese laws and regulations of Internet infrastructure, traffic, and content. Under our agreement with Baidu, in some circumstances, these customers' use of our Chinese network presence can be terminated if they violate these laws and regulations. The removal of our customers from our Chinese network presence could result in these customers deciding to terminate their overall relationship with us. In addition, any adverse publicity associated with the removal of some or all of our customers from our Chinese network presence as a result of the application of Chinese laws and regulations could cause us to experience adverse reputational and business consequences.

Our international operations expose us to significant risks, and failure to manage those risks could materially and adversely impact our business.

Historically, we have derived a significant portion of our revenue from outside the United States. We derived 50%, 52%, and 52% of our revenue from our international customers for the years ended December 31, 2019, 2018, and 2017, respectively. We are continuing to adapt to and develop strategies to address international markets and our growth strategy includes expansion into geographies around the world, but there is no guarantee that such efforts will be successful. In addition, our global network includes co-location facilities located in 200 cities and over 90 countries around the world as of December 31, 2019. We expect that our international sales and network activities will continue to grow in the future, as we continue to pursue opportunities in international markets and further grow our network around the world. These international operations will require significant management attention and financial resources and are subject to substantial risks, including:

- political, economic, and social uncertainty, including the potential nationalization of key peering partners by foreign governments, potential terrorist activities, and the unknown impact of regional or global health crises, or epidemic or pandemic diseases, such as the coronavirus that originated in China in 2019 and began to spread globally in early 2020;

- changes in a specific country's or region's political or economic conditions, including in the United Kingdom as a result of its withdrawal from the EU, which is often referred to as "Brexit";
- unexpected costs for the localization of our products, including translation into foreign languages and adaptation for local practices and regulatory requirements;
- greater difficulty in enforcing contracts and accounts receivable collection, and longer collection periods;
- reduced or uncertain protection for intellectual property rights in some countries;
- greater risk of unexpected changes in regulatory practices, tariffs, and tax laws and treaties, including with respect to our business in China;
- greater risk of a failure of foreign employees and channel partners to comply with both U.S. and foreign laws, including antitrust regulations, anti-bribery laws, export and import control laws, and any applicable trade regulations ensuring fair trade practices;
- heightened security risks associated with our co-location facilities in high-risk countries and the software code and systems access shared with our service providers located in such countries;
- greater risks associated with third-party contractors that we use to install and maintain our hardware in co-location facilities in foreign countries and the limited background checks and screening that we can perform on such service providers;
- regulations related to privacy, data protection, security requirements, data localization, or content restriction that could pose risks to our intellectual property, increase the cost of doing business in a country, or create other disadvantages to our business;
- changes in laws, regulations, and costs affecting our U.K. operations and local employees due to Brexit;
- increased expenses incurred in establishing and maintaining office space and equipment for our international operations;
- greater difficulty in identifying, attracting, and retaining local qualified personnel and the costs and expenses associated with such activities;
- differing employment practices and labor relations issues, which may make expansion or contraction of our workforce, or changes in the terms of employment, in such countries more costly and time-consuming and subject us to a greater risk of disputes or litigation;
- increased regulatory requirements and litigation risk related to the presence of our physical infrastructure in countries around the world;
- difficulties in managing and staffing international offices and increased travel, infrastructure, and legal compliance costs associated with operating multiple international locations; and
- fluctuations in exchange rates between the U.S. dollar and foreign currencies in markets where we do business, particularly the United Kingdom and Singapore where we have large offices and pay employees in local currency.

The expansion of our existing international operations and entry into additional international markets will require significant management attention and financial resources. Our failure to successfully manage our international operations and the associated risks could limit the future growth of our business. In particular, we are exposed to risks in China, which amounts to a significant part of both our short-term and long-term revenue growth plans. Our Chinese operations are substantially dependent on our relationship with Baidu, and due to economic and political challenges in servicing the Chinese market, the loss of this arrangement could have a significant adverse effect on our business and results of operations.

Geo-political events such 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, data privacy, security, and employee relations, as a result of Brexit. Given the significance of our presence in the United Kingdom, such changes could be particularly costly and disruptive to our operations and business relationships. In addition, heightened use of trade restrictions such as tariffs or prohibitions on technology transfers to achieve diplomatic ends, including with respect to the current

environment of economic trade negotiations and tensions between the Chinese and U.S. governments, could impact our ability to conduct our business as planned.

Our business could be adversely impacted by the decision of foreign governments, Internet service providers, or others, to block transmission from Cloudflare IP addresses in order to enforce certain Internet content blocking efforts.

Some of our security products involve making origin IP addresses and other operational assets of our customers more difficult for cyber attackers to target. The evolving design of our platform and products may create challenges for various organizations, including governments, that seek to block certain content based on IP address “black lists” or other mechanisms. This problem is exacerbated by the fact that a single Cloudflare IP address may be used for a number of Internet properties, and the Cloudflare IP used for any one Internet property may change over time. This means that efforts by ISPs to block a single domain name may end up blocking a number of other domains that share that Cloudflare IP address or domains that use that same Cloudflare IP address previously or subsequently. If these challenges become too difficult for those organizations to overcome, they could make the decision to block content in an overbroad manner or block completely websites and other Internet properties that are using our network and/or transmitted using known Cloudflare IP addresses. Some of these blocking efforts would be out of our control once they have been put in place and may limit our ability to provide our products on a fully global basis, which could reduce demand for our products among current or potential customers that are focused on the impacted regions or could otherwise adversely impact our business, results of operations, and financial condition.

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

Our business activities are subject to various economic and trade sanctions regulations administered by the U.S. Department of the Treasury’s Office of Foreign Assets Control (OFAC) and U.S. export control and similar foreign laws and regulations, including the U.S. Department of Commerce’s Export Administration Regulations (EAR). We incorporate encryption technology into certain of our products, and the encryption products and the underlying technology may be exported outside the United States only with the required export authorizations, including by license, a license exception, or other appropriate government authorizations, including the filing of classification requests or self-classification reports. Further, the U.S. economic sanctions laws and export control laws include restrictions or prohibitions on the sale or supply of most products and services to U.S. embargoed or sanctioned countries, governments, persons, and entities. Even though we take precautions and have implemented policies and practices to assist in compliance, there is a risk that we may not be in full compliance with these laws.

In 2019, we learned that we may have failed to comply with certain U.S. export-related filing and reporting requirements and may have submitted incorrect information to the U.S. government in connection with certain hardware exports. Upon learning of these potential violations and associated export control requirements, we promptly initiated a voluntary internal review and are taking remedial measures to prevent similar export control anomalies from occurring in the future. In May 2019, we submitted an initial voluntary self-disclosure to the Bureau of Industry and Security regarding potential violations of EAR and a voluntary self-disclosure to the Census Bureau regarding potential violations of the Foreign Trade Regulations. In July 2019, we filed the full and complete voluntary self-disclosures. The voluntary self-disclosure to the Census Bureau was completed with no penalties in November 2019. In January 2020, we responded to additional questions from the Bureau of Industry and Security. The voluntary self-disclosure to the Bureau of Industry and Security remains under review.

In May 2019, we submitted an initial voluntary self-disclosure to OFAC related to our non-compliance with certain economic and trade sanctions programs, and we filed the full and complete voluntary self-disclosure to OFAC in July 2019. Specifically, we identified that our products were used by, or for the benefit of, certain individuals and entities included in OFAC’s Specially Designated Nationals and Blocked Persons List, including entities identified in OFAC’s counter-terrorism and counter-narcotics trafficking sanctions programs, or affiliated with governments currently subject to comprehensive U.S. sanctions. A small number of these parties made payments to us in connection with their use of our platform. Although we have implemented, and are working to implement additional controls and screening tools designed to prevent similar activity from occurring in the future, there is no guarantee that we will not inadvertently provide our products to additional individuals, entities, or governments prohibited by U.S. sanctions in the future. In January 2020, we responded to additional questions from OFAC. The voluntary self-disclosure remains under review by OFAC.

Additionally, we currently provide products to certain OFAC-sanctioned regions based upon general licenses issued by OFAC to engage in such activity. We continue to review the OFAC sanctions and our practices to verify compliance.

These efforts related to export controls and OFAC sanctions could result in negative consequences for us, including costs related to government investigations, financial penalties and harm to our reputation. The impact on us related to these matters could be substantial.

In addition, various countries regulate the import of certain technologies and have enacted or could enact laws that could limit our ability to provide our products and operate our network or could limit our customers' ability to access or use our platform and products in those countries.

If we are found to have violated the U.S. or foreign laws and regulations, we and certain of our employees could be subject to civil or criminal penalties, including the possible loss of export privileges and fines. We may be materially and adversely affected through penalties, reputational harm, loss of access to certain markets, loss of customers, or otherwise. Obtaining the necessary authorizations, including any required license, for a particular transaction may be time-consuming, is not guaranteed, and may result in the delay or loss of sales opportunities. In addition, changes in our platform, products, or screening process, or changes in export, sanctions, and import laws, could delay the introduction and sale of subscriptions to our products in international markets, prevent customers in certain countries from accessing our platform and products or, in some cases, prevent the provision of our platform and products to certain countries, governments, persons, or entities altogether. Any decrease in our ability to sell our products could materially and adversely affect our business, results of operations, and financial condition.

We face intense and increasing competition, which could adversely affect our business, financial condition, and results of operations.

The markets for our platform and products are intensely competitive and characterized by rapid changes in technology, customer requirements, industry standards, and frequent introductions of new, and improvements of, existing products. Our broad portfolio of products exposes us to competition from a large number of competitors in a number of different markets, including companies and their product and services offerings in, among others, virtual private networks, internal and external firewalls, web security (including web application firewalls and content filtering), distributed denial of service prevention, intrusion detection and prevention, application delivery controls, content delivery networks, domain name systems, advanced threat prevention, and wide area network (WAN) technology.

Our competitors provide both on-premises, appliance-based solutions, and cloud-based services that have functionality similar to our platform and products. We expect competition to increase as other established and emerging companies and start-ups enter the markets for products and solutions for security, performance, and reliability, in particular with respect to cloud-based solutions, as customer requirements evolve and as new products, services, and technologies are introduced. If we are unable to anticipate or effectively react to these competitive challenges, our competitive position could weaken, and we could experience a decline in revenue or our growth rate that could materially and adversely affect our business and results of operations.

Our potential competitors include large companies with substantial infrastructure, such as global telecommunications services provider partners and public cloud providers. These companies could choose to enter the markets for products and solutions for security, performance, and reliability, including by acquiring existing companies, developing their own internal solutions, or establishing cooperative relationships with businesses that may allow them to offer more comprehensive solutions or to offer solutions for lower prices or to adapt more quickly than us to new technologies and customer needs. Additionally, if an increasing portion of web content is housed on another company's platform or portions of the Internet are otherwise privatized, it could reduce the demand for our products and increase competitive pressure on us. These competitive pressures in our markets or our failure to compete effectively may result in price reductions, fewer subscriptions, reduced revenue and gross margin, increased net losses, and loss of market share.

Our current and potential future competitors include a number of different types of companies, including:

- on-premise hardware network vendors, such as Cisco Systems Inc., F5 Networks, Inc., Check Point Software Technologies Ltd., FireEye, Inc., Imperva, Inc., Palo Alto Networks, Inc., Juniper Networks, Inc., and Riverbed Technology, Inc.;

- point-cloud solution vendors, including cloud security vendors such as Zscaler, Inc. and Cisco Systems Inc. through Umbrella (formerly known as OpenDNS), content delivery network vendors such as Akamai Technologies, Inc., Limelight Networks, Inc., Fastly, Inc., and Verizon Communications Inc. through Edgecast, domain name system vendors services such as Oracle Corporation through DYN, NeuStar, Inc., and UltraDNS Corporation, and cloud SD-WAN vendors; and
- traditional public cloud vendors, such as Amazon.com, Inc. through Amazon Web Services, Alphabet Inc. through Google Cloud Platform, Microsoft Corporation through Azure, and Alibaba Group Holding Limited through Alibaba Cloud.

Many of our existing and potential competitors have or could have substantial competitive advantages including, among others:

- greater name recognition;
- longer operating histories and larger customer bases;
- larger sales and marketing budgets and capital resources;
- broader distribution and established relationships with partners and customers;
- greater customer support resources;
- greater resources to make acquisitions and enter into strategic partnerships;
- lower labor and research and development costs;
- larger and more mature intellectual property rights portfolios;
- control of significant technologies, standards, or networks, including operating systems, with which our products must interoperate;
- higher or more difficult to obtain security certifications than we possess; and
- substantially greater financial, technical, and other resources.

In particular, some of our larger competitors have substantially broader and more diverse product and services offerings, which may allow them to leverage existing commercial relationships, incorporate functionality into existing products, sell products and services with which we compete at zero or negative margins, offer fee waivers and reductions or other economic and non-economic concessions, bundle products and solutions, maintain closed technology platforms, or render our products unable to interoperate with such platforms. If they were to engage in predatory practices, it could harm our existing product offerings or prevent us from creating viable products in other segments of the markets in which we participate. If our competitors are able to exploit their advantages or are able to persuade our customers or potential customers that their products are superior to ours, we may not be able to compete effectively and our business, financial condition, and results of operations may be materially affected.

Our policies regarding user privacy could cause us to experience adverse business and reputational consequences with customers, employees, suppliers, government entities, and other third parties.

As a company, we strive to protect our customers' privacy consistent with applicable law. Consequently, we generally do not provide personal information about our customers without legal process. From time to time, government entities may also seek our assistance with obtaining information about our customers or could request that we modify our platform and products in a manner to permit access or monitoring. In light of our privacy commitments, we may legally challenge law enforcement requests to provide a feed of content transiting our network, to obtain encryption keys, or to modify or weaken encryption. We may face complaints from individuals who assert we have provided their information improperly to law enforcement or in response to third-party abuse complaints, despite policies we have in place to protect that information. To the extent that we do not provide assistance to or comply with requests from government entities or challenge those requests publicly or in court, we may experience adverse political, business, and reputational consequences. We may also face such adverse political, business, and reputational consequences to the extent that we provide, or are perceived as providing, assistance to government entities that exceeds our legal obligations. For example, we periodically receive requests for information purportedly originating from law enforcement agencies or pursuant to legal process, but which are fraudulent or improper attempts to cause us to reveal customer information. Any such disclosure could significantly and adversely impact our business and reputation.

We publish a transparency report on a semi-annual basis to provide details of law enforcement and government requests we receive. Our transparency report also includes a list of certain actions we have not taken in response to law enforcement requests. If we are ever required by law enforcement to take one or more of the actions covered by those disclosures, then we would have to remove the applicable disclosures from our transparency report. Both the publishing of our transparency report and, conversely, the potential narrowing of the list of actions we have not taken in response to law enforcement requests could damage our business and reputation.

If we do not effectively expand, train, and retain our sales force, we may be unable to add new Enterprise plan customers, or increase sales to our existing customers and our business would be adversely affected.

A majority of our revenue in the year ended December 31, 2019 was from Enterprise plan customers that were acquired through our inside and field sales teams. We expect this trend will continue for the foreseeable future. As a result, our financial condition and results of operations are dependent to a significant degree on the ability of our dedicated sales personnel to acquire new contracted customers and expand our relationships with our existing contracted customers. Our sales representatives typically engage in direct interaction with our prospective contracted customers. Increasing our customer base and achieving broader market acceptance of our platform and products will depend, to a significant extent, on our ability to expand and further invest in our sales and marketing operations and activities. There is significant competition for sales personnel with the advanced sales skills and technical knowledge we need. We believe that selling subscriptions to our products requires particularly talented sales personnel that understand both cloud-based and appliance-based solutions, as well as the key differences between them. Our ability to achieve significant growth in revenue in the future will depend, in large part, on our success in recruiting, training, and retaining sufficient numbers of these talented sales personnel in both the United States and international markets. New sales hires require significant training and may take significant time before they achieve full productivity. As a result, our new sales hires and planned sales hires may not become as productive as we would like or as quickly as we expect, and we may be unable to hire or retain sufficient numbers of qualified individuals. As a result of our rapid growth, a large percentage of our sales team is new to our company and inexperienced in selling subscriptions to our products, and therefore these personnel may be less effective than our more seasoned employees. Experienced sales personnel are particularly sought after in our industry and we may have to expend significant resources to retain our most productive sales employees. Even with considerable effort, we may be unsuccessful at retaining our experienced sales employees, which would adversely impact our business, results of operations, and financial condition.

Furthermore, hiring sales personnel in new countries, or expanding our existing presence in the countries in which we currently operate, requires upfront and ongoing expenditures that we may not recover if the sales personnel fail to achieve full productivity or that may be recovered on a more delayed basis than expected. We cannot predict whether, or when or to what extent, our sales will increase as we expand our sales force or how long it will take for sales personnel to become productive. If we are unable to hire, train, and retain a sufficient number of effective sales personnel, or the sales personnel we hire are not successful in obtaining new customers or increasing sales to our existing customer base, our business and future growth prospects will be materially and adversely affected.

If we fail to effectively manage our growth, we may be unable to execute our business plan, maintain high-quality levels of support, ensure the security of our network, adequately address competitive challenges, or maintain our corporate culture, and our business, financial condition, and results of operations would be harmed.

We have recently experienced, and continue to experience, a period of rapid growth. For example, our headcount grew from 540 employees as of December 31, 2017, to 865 employees as of December 31, 2018, to 1,270 employees as of December 31, 2019. We also have offices around the world, including opening offices in Beijing and Munich during 2018, an office in Sydney in January 2019, an office in Lisbon in August 2019, and an office in Kirkland, Washington in January 2020. In addition, we expanded our network into 35, 46, and 17 new cities in 2019, 2018, and 2017, respectively. The number of customers, users, and requests on our network also has increased rapidly in recent years. While we expect to continue to expand our operations and to increase our headcount, network, and products significantly in the future, both domestically and internationally, our growth may not be sustainable. Our growth has placed, and future growth will continue to place, a significant strain on our management and our administrative, operational, and financial infrastructure. Our success will depend in part on our ability to manage this growth effectively, which will require that we continue to improve our administrative, operational, financial, and management systems and controls by, among other things:

- effectively attracting, training, and integrating a large number of new employees, particularly members of our sales, engineering, and management teams;
- ensuring the integrity and security of our network and IT infrastructure throughout the world;
- maintaining our corporate culture, which we believe fosters innovation, teamwork, and an emphasis on customer-focused results and contributes to our cost-effective business model;
- further improving our key business applications, processes, and IT infrastructure, including our core co-location facilities, to support our business needs;
- enhancing our information and communication systems to ensure that our employees and offices around the world are well coordinated and can effectively communicate with each other and our growing base of channel partners, customers, and users;
- maintaining high levels of customer support; and
- appropriately documenting and testing our IT systems and business processes.

Managing our growth will require significant capital expenditures and allocation of valuable management and employee resources. If we fail to manage our expected growth, the uninterrupted and secure operation of our network and products and key business systems, our corporate culture, our compliance with the rules and regulations applicable to our operations, the quality of our products, and our ability to compete could suffer. Any failure to preserve our culture also could further harm our ability to retain and recruit personnel, innovate and create new products, operate effectively, and execute on our business strategy.

Our quarterly results may fluctuate significantly and may not fully reflect the underlying performance of our business.

Our quarterly results of operations, including, without limitation, our revenue, gross margin, operating margin, profitability, cash flow from operations, and deferred revenue, may vary significantly in the future and period-to-period comparisons of our results of operations may not be meaningful. Accordingly, the results of any one quarter should not be relied upon as an indication of future performance. Our quarterly results of operations may fluctuate as a result of a variety of factors, many of which are outside of our control, and as a result, may not fully reflect the underlying performance of our business. Fluctuation in quarterly results may negatively impact the trading price of our Class A common stock. Factors that may cause fluctuations in our quarterly results of operations include, without limitation:

- our ability to attract new paying customers and, to a lesser extent, convert free customers to paying customers;
- our ability to retain and upgrade paying customers;
- the timing of expenses and recognition of revenue;
- the amount and timing of operating expenses related to the maintenance and expansion of our business, operations, and infrastructure, as well as entry into operating and capital leases and co-location, interconnection, and similar agreements related to the expansion of our network;
- the timing of expenses related to acquisitions;
- any large indemnification payments to our customers or other third parties;
- changes in our pricing policies or those of our competitors;
- the timing and success of new product feature and service introductions by us or our competitors;
- network outages or actual or perceived security breaches;
- our involvement in litigation or regulatory enforcement efforts, or the threat thereof;
- changes in the competitive dynamics of our industry, including consolidation among competitors;
- the length of the sales cycle for our contracted customers;
- changes in laws and regulations that impact our business; and
- general political, economic, market, and social conditions.

For example, the full impact of the coronavirus that originated in China in 2019 and began to spread globally in early 2020 is unknown at this time but could result in material adverse changes in our results of operations for an unknown period of time as the virus and its related political, social, and economic impacts spread.

We rely on our key technical, sales, and management personnel to grow our business, and the loss of one or more key employees or the inability to attract and retain qualified personnel could harm our business.

Our future success is substantially dependent on our ability to attract, retain, and motivate the members of our management team and other key employees throughout our organization, particularly Matthew Prince, our Chief Executive Officer, and Michelle Zatlyn, our Chief Operating Officer. We rely on our leadership team in the areas of operations, security, marketing, sales, support, research and development, and general and administrative functions, and on individual contributors on our research and development team. Although we have entered into employment offer letters with our key personnel, these agreements have no specific duration and constitute at-will employment. We do not maintain key person life insurance policies on any of our employees. The loss of one or more of our executive officers or key employees could seriously harm our business.

To execute our growth plan, we must attract and retain highly qualified personnel. In particular, it is critical for us to attract and retain engineering talent in our fast growing industry. Competition for these personnel in the San Francisco Bay Area, where our headquarters is located, and in London, Singapore, Austin, Texas, and other locations where we maintain offices, is intense, especially for experienced sales professionals and for engineers experienced in designing and developing cloud applications. We have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications. For example, in recent years, recruiting, hiring, and retaining employees with expertise in the cybersecurity industry has become increasingly difficult as the demand for cybersecurity professionals has increased as a result of high-profile cybersecurity attacks on global corporations and governments. Many of the companies with which we compete for experienced personnel have greater resources than we have and may provide higher levels of compensation. In addition, job candidates and existing employees often consider the value of the equity awards they receive in connection with their employment. Volatility or lack of performance in our stock price may affect our ability to attract and retain our key employees. Upon vesting of equity awards, many of our employees have acquired or may soon acquire a substantial amount of personal wealth. This may make it more difficult for us to retain and motivate these employees, and this wealth could affect their decision about whether or not they continue to work for us. Any failure to successfully attract, integrate, or retain qualified personnel to fulfill our current or future needs could materially and adversely affect our business, results of operations, and financial condition.

We believe our long-term value as a company will be greater if we focus on growth, which may negatively impact our profitability.

A significant part of our business strategy is to focus on long-term growth. For example, in the year ended December 31, 2019 we increased our operating expenses to \$331.5 million as compared to \$234.0 million and \$115.9 million in the years ended December 31, 2018 and 2017, respectively. In the year ended December 31, 2019 our net loss increased to \$105.8 million from \$87.2 million and \$10.7 million in the years ended December 31, 2018 and 2017, respectively. As a result, we may continue to operate at a loss or our profitability may be lower than it would be if our strategy were to maximize short-term profitability. Significant expenditures on sales and marketing efforts, and expenditures on growing our platform and expanding our research and development and portfolio of products, each of which we intend to continue to invest in, may not ultimately grow our business or cause long-term profitability. If we are ultimately unable to achieve or improve profitability at the level or during the time frame anticipated by industry or financial analysts and our stockholders, our stock price may decline.

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

We believe that maintaining our reputation as a provider of products with the highest levels of security, performance, and reliability is critical to our relationship with our existing customers and our ability to attract new customers. The successful promotion of our brand will depend on a number of factors, including our record of security, performance, and reliability; our marketing efforts; our ability to continue to develop high-quality features and products for our platform; and our ability to successfully differentiate our products from competitive products and services. Our brand promotion activities may not be successful or yield increased revenue.

Independent industry and financial analysts often provide reviews of our products, as well as those of our competitors. Perception of our offerings in the marketplace may be significantly influenced by these expert reviews.

In addition, the difficulty or inability of us to periodically provide certain types of financial information about our business and products requested by industry analysts could adversely impact these analysts' reviews of our products. If reviews of our products are negative, or less positive than those of our competitors', our brand may be adversely affected. The performance of our channel partners also may affect our brand and reputation, particularly if customers do not have a positive experience with our channel partners. The promotion of our brand requires us to make substantial expenditures, and we anticipate that the expenditures will increase as our markets become more competitive and we expand into new markets. Expenditures intended to maintain and enhance our brand may not be cost-effective or effective at all. If we do not successfully maintain and enhance our brand, we may have reduced pricing power relative to our competitors, we could lose customers, or we could fail to attract potential new customers or expand sales to our existing customers, all of which could materially and adversely affect our business, results of operations, and financial condition.

We provide service level commitments under our Enterprise plan customer contracts and our Business plan terms of service. If we fail to meet these contractual commitments, we could be obligated to provide credits for future service or allow customers to terminate their subscriptions and our business could suffer.

Our Enterprise plan agreements and our Business plan terms of service typically provide for service level commitments, which contain specifications regarding the availability and performance of our network. In particular, our Enterprise plan subscriptions and our Business plan terms of service include up to a 100% uptime guarantee. Any failure of or disruption to our infrastructure could adversely impact the security, performance, and reliability of our platform and products for our customers. If we are unable to meet our stated service level commitments or if we suffer extended periods of poor performance or unavailability of our platform and products, these customers could seek to bring claims against us or terminate their agreements with us and, in the case of our contracted customers, we may be contractually obligated to provide affected customers with service credits that they may apply against future subscription fees otherwise owed to us, and, in certain cases, refunds of pre-paid and other fees. For example, the June 2019 route leak and the July 2019 outage on our network triggered certain of these types of obligations. The impact of the June 2019 route leak and July 2019 outage did not have a material impact on our results of operations or financial condition; however, other future events like these may materially and adversely impact our results of operations or financial condition. Our revenue, other results of operations, and financial condition could be harmed if we suffer performance issues or downtime that exceeds the service level commitments under our agreements and terms of service with our paying customers.

If our products do not obtain and maintain market acceptance, our ability to grow our business and our results of operations may be adversely affected.

Our products are still evolving and it is difficult to predict customer demand and adoption rates for our product offerings. We believe that our platform and cloud-based products represent a major shift from traditional solutions. Many of our potential customers, particularly large enterprises and government entities, face barriers to adopting our offerings because of their prior investment in, and the familiarity of their IT personnel with, on-premises, appliance-based solutions. As a result, our sales process often involves extensive efforts to educate our customers about our products, particularly as we continue to pursue customer relationships with large organizations. Our customers also expect us to meet voluntary certifications or adhere to standards established by third parties and may demand that they be provided a report from our auditors that we are in compliance. Although we currently have certain certifications such as SOC2 Type 1 and Type 2, SOC3, PCI DSS, and ISO 27001, we may not be successful in continuing to maintain those certifications or in obtaining other certifications. In addition, sales to government entities and other large enterprises may in particular be conditioned upon adherence to the Federal Risk and Authorization Management Program (FedRAMP) and Electronic Identification and Trust Services Regulation standards in the United States and the EU, respectively, and we do not currently have these certifications. The costs of obtaining and maintaining certification pursuant to any of these standards are significant, and any failure to obtain and maintain such certifications for our platform and products could reduce demand for them, which would harm our business, results of operations, and financial condition. To the extent our competitors have, and we do not have, these certifications, we may lose the opportunity to obtain subscriptions from certain potential paying customers.

Despite our efforts, we can provide no assurance that our cloud-based products will obtain market acceptance or that competing products or services based on other cloud-based and/or on-premises technologies will not achieve market acceptance. If we fail to achieve market acceptance of our products or are unable to keep pace with industry changes or obtain necessary product certifications, our ability to grow our business, results of operations, and financial condition will be materially and adversely affected.

We may not be able to respond to rapid technological changes or develop new products and features that are attractive to our current and prospective future customers.

The industry in which we compete is characterized by rapid technological change, including frequent introductions of new products and services, evolving industry standards, changing regulations, and the development of novel cyber-attacks by hostile parties, as well as changing customer needs, requirements, and preferences. Our need for continuous innovation is driven not only by competitive forces within our industry but also by our need to out-innovate the highly motivated third parties seeking to breach or compromise our network and those of our customers for economic, political, military, or other purposes.

Our ability to attract new customers and increase revenue from existing customers will depend in significant part on our ability to anticipate and respond effectively to these forces on a timely basis and continue to introduce enhancements to our platform and develop new products. If new technologies emerge that deliver competitive products and services at lower prices, more efficiently, more conveniently, more securely or reliably, or are higher performing, these technologies could render our platform and existing products less attractive to our current and prospective future customers, or obsolete. The development of novel attacks or exploits by criminal or malicious elements or hostile state actors also could render our platform and existing products less effective or obsolete. The success of our business depends on our continued investment in our research and development organization to increase the integrity, reliability, availability, and scalability of our products. We may experience difficulties with development, design, or marketing of such enhancements to our platform and products that could delay or prevent their development, introduction, or implementation. We have in the past experienced delays in the planned expansion of our network and in our internally planned or publicly announced release dates of new products and new features and capabilities, and there can be no assurance that planned expansions of our network will occur on schedule and that new products, features, or capabilities will be released according to schedule. Any delays could result in adverse publicity, loss of revenue or market acceptance, or claims by customers brought against us, all of which could have a material and adverse effect on our reputation, business, results of operations, and financial condition.

Adverse economic conditions, including reduced spending on products and solutions for network security, performance, and reliability, may adversely impact our revenue and profitability.

Our operations and financial performance depend in part on worldwide economic conditions and the impact these conditions have on levels of spending on products and solutions for network security, performance, and reliability. Our business depends on the overall demand for these products and on the economic health and general willingness of our current and prospective customers to purchase our products. For example, the full impact of the coronavirus that originated in China in 2019 and began to spread globally in early 2020 is unknown at this time but has resulted in an adverse impact on economic conditions in China and other Asian countries, which adverse impact could spread to other countries around the globe as the virus and its political, social, and economic impact spread. Some of our paying customers may view a subscription to our products as a discretionary purchase and may reduce their discretionary spending on our products during an economic downturn. Weak economic conditions, including a reduction in spending on products and solutions for security, performance, and reliability, could reduce sales, lengthen sales cycles, increase churn, and lower demand for our products, any of which could adversely affect our business, results of operations, and financial condition.

Our relatively limited operating history makes it difficult to evaluate our current business and prospects, and may increase the risk that we will not be successful.

Our relatively limited operating history makes it difficult to evaluate our current business and prospects, and to plan for our anticipated future growth. We began operations in 2010 and much of our growth has occurred in recent years. As a result, our business model has not been fully proven, which subjects us to a number of uncertainties, including our ability to plan for and model future growth. While we have continued to expand our network and develop additional reliability products, we have encountered, and will continue to encounter, risks and uncertainties frequently experienced by rapidly growing companies in developing industries, including our ability to achieve broad market acceptance of our products, attract additional customers, identify and grow partnerships, withstand increasing competition in our existing and future markets, and manage increasing expenses as we continue to grow our business. If our assumptions regarding these risks and uncertainties are incorrect or change in response to changes in the markets for products and solutions for network security, performance, and reliability, our business could suffer and our results of operations and financial condition could differ materially from our expectations.

We have limited experience with our pricing models, and may not accurately predict the long-term rate of paying customer adoption or renewal, or the impact these will have on our revenue or results of operations.

We generate revenue primarily from subscriptions to our platform and products. We offer subscription plans that provide varying degrees of functionality, and also offer separate subscriptions to various add-on products and platform functionality. We have limited experience with respect to determining the optimal prices and pricing models for our subscription plans and products, particularly with respect to our newer products and solutions such as our recently announced Cloudflare for Teams suite of products. As the markets for our products mature, as we enter into newer product markets for our business, or as new competitors introduce new products or services that compete with ours, we may be unable to attract new customers or retain existing customers at the same price or based on the same pricing model as we have used historically. Moreover, our increasing focus on larger customers may lead to greater price concessions in the future or have a more significant impact period to period on our revenue and results of operations. As a result, in the future we may be required to reduce our prices, which could adversely affect our revenue, gross margin, profitability, financial condition, and cash flow.

We also have limited experience in determining which products and functionality to offer as part of our subscription plans and which to offer as add-on products. Our limited experience in determining the optimal manner in which to bundle our various products and functionalities could reduce our ability to capture the value delivered by our offerings, which could adversely impact our business, results of operations, and financial condition.

As we expand our sales to large customers, our sales cycle could lengthen and become unpredictable.

Historically, the implementation period to start using our products has been short, with most customers under our pay-as-you-go plans implementing usage of our products within a matter of minutes and our sales cycle for customers under our Enterprise plan typically lasting less than one quarter. As our business evolves, we are investing more resources into sales efforts directed to larger enterprises. These larger enterprises may undertake a significant evaluation and negotiation process, which could lengthen our sales cycle materially. The timing of sales to large customers can be more difficult to predict because of the length and unpredictability of the sales cycle for these customers. Our sales efforts typically involve educating our prospective large customers about the uses, benefits, and value proposition of our platform and products. Potential large customers often view the subscription to our products as a significant strategic decision and, as a result, in some cases require considerable time to evaluate, test, and qualify our platform and products prior to entering into or expanding a relationship with us.

Our sales force develops relationships directly with our customers and our channel partners on account penetration, account coordination, sales, and overall market development. We spend substantial time and resources on our sales efforts without any assurance that our efforts will produce a sale. Subscriptions to our products often are subject to budget constraints, multiple approvals, and unanticipated administrative, processing, and other delays. As a result, it is difficult to predict whether or when a sale to a prospective large customer will be completed and when revenue from a subscription will be recognized.

Sales to large customers involve risks that may not be present, or that are present to a lesser extent, with sales to smaller customers, including:

- competition from companies that traditionally target larger enterprises and that may have pre-existing relationships or purchase commitments from such customers;
- longer evaluation periods, more detailed evaluations, and more cumbersome contract negotiation and approval processes;
- increased purchasing power and leverage in negotiating contractual arrangements with us;
- requirements for more technically complex configurations, integrations, deployments, or features;
- more stringent requirements in our support obligations; and
- longer sales cycles and the associated risk that substantial time and resources may be spent on a potential customer that elects not to purchase our products.

These additional risks also can potentially act as a disincentive to our sales team's pursuit of these large customers. As a result, sales to large customers may lead to greater unpredictability in our business, results of operations, and financial condition. If our sales efforts are not successful or cost-effective, we could lose other sales opportunities or incur expenses that are not offset by an increase in revenue, either of which could harm our business.

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

To grow our business, we anticipate that we will continue to depend on relationships with third parties, such as channel partners. Identifying partners, negotiating and documenting relationships with them, and maintaining APIs that some of our partners use to interact with our business, each require significant time and resources. Our competitors may be effective in providing incentives to third parties to favor their products or services over subscriptions to our products. In addition, acquisitions of such partners by our competitors could result in a decrease in the number of our current and potential customers, as these partners may no longer facilitate the adoption of our applications by potential customers. Further, some of our partners are or may become competitive with certain of our products and may elect to no longer integrate with our platform and products. If we are unsuccessful in establishing or maintaining our relationships with third parties, our ability to compete in the marketplace or to grow our revenue could be impaired, and our results of operations may suffer. Even if we are successful, we cannot assure you that these relationships will result in increased customer usage of our products or increased revenue.

Our ability to maintain customer satisfaction depends in part on the quality of our customer support. Failure to maintain high-quality customer support could have an adverse effect on our business, results of operation, and financial condition.

We believe that the successful use of our platform and products requires a high level of support and engagement for many of our customers, particularly our large customers. In order to deliver appropriate customer support and engagement, we must successfully assist our customers in deploying and continuing to use our platform and products, resolving performance issues, addressing interoperability challenges with the customers' existing IT infrastructure, and responding to security threats and cyber attacks and performance and reliability problems that may arise from time to time. The IT architecture of our contracted customers, particularly the larger organizations, is very complex and may require high levels of focused support to effectively utilize our platform and products. Because our platform and products are designed to be highly configurable and to rapidly implement customers' reconfigurations, customer errors in configuring our platform and products can result in significant disruption to our customers. Our support organization faces additional challenges associated with our international operations, including those associated with delivering support, training, and documentation in languages other than English. Increased demand for customer support, without corresponding increases in revenue, could increase our costs and adversely affect our business, results of operations, and financial condition.

We also rely on channel partners in order to provide frontline support to some of our customers, including in regions where we do not have a significant physical presence or the customers primarily speak languages other than English. If our channel partners do not provide support to the satisfaction of our customers, we may be required to hire additional personnel and to invest in additional resources in order to provide an adequate level of support, generally at a higher cost than that associated with our channel partners. There can be no assurance that we will be able to hire sufficient support personnel as and when needed, particularly if our sales exceed our internal forecasts. To the extent that we are unsuccessful in hiring, training, and retaining adequate support resources, our ability to provide high-quality and timely support to our customers will be negatively impacted, and our customers' satisfaction with our platform and products could be adversely affected. Any failure to maintain high-quality customer support, or a market perception that we do not maintain high-quality customer support, could adversely affect our reputation, business, results of operations, and financial condition, particularly with respect to our large customers.

If our platform and products do not interoperate with our customers' internal networks and infrastructure or with third-party products, websites, or services, our network may become less competitive and our results of operations may be harmed.

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

our platform and products to function properly in customer internal networks and infrastructures that include these third-party products.

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

Because we provide some of our products through a reverse-proxy, which is a network arrangement in which Internet user requests initially are directed to our network's servers rather than those of our customers, the source of some traffic may be difficult to ascertain. When they cannot identify the source of the traffic, some governments, third-party products, websites, or services may block our traffic or blacklist our IP addresses. If our customers experience significant instances of traffic blockages, they will experience reduced functionality or other inefficiencies, which would reduce customer satisfaction with our platform and products and likelihood of renewal.

We rely on a limited number of suppliers for certain components of the equipment we use to operate our network and any disruption in the availability of these components could delay our ability to expand or increase the capacity of our global network or replace defective equipment.

We rely on a limited number of suppliers for several components of the equipment we use to operate our network and provide products to our customers. Our reliance on these suppliers exposes us to risks, including reduced control over production costs and constraints based on the then current availability, terms, and pricing of these components. For example, we generally rely on a single source to purchase the servers that we use in our network and we ordinarily purchase these components on a purchase-order basis, without any long-term contracts guaranteeing supply. While the network equipment and servers we purchase generally are commodity equipment and we believe an alternative supply source for servers on substantially similar terms could be identified quickly, our business could be adversely affected until those efforts were completed. In addition, the technology equipment industry has experienced component shortages and delivery delays in the past, and we may experience shortages or delays, including as a result of natural disasters, increased demand in the industry, or our suppliers lacking sufficient rights to supply the components in all jurisdictions in which we have co-location facilities that support our global network. For example, the coronavirus that originated in China in 2019 and began to spread globally in early 2020 could result in disruptions and delays for these components. If our supply of certain components is disrupted or delayed, there can be no assurance that additional supplies or components can serve as adequate replacements for the existing components or that supplies will be available on terms that are favorable to us, if at all. Any disruption or delay in the supply of our hardware components may delay the opening of new co-location facilities, limit capacity expansion or replacement of defective or obsolete equipment at existing co-location facilities, or cause other constraints on our operations that could damage our customer relationships.

Our business could be adversely impacted by changes in Internet access for our customers or laws specifically governing the Internet.

Our network performance and reliability depends on the quality of our customers' access to the Internet. Certain features of our network require significant bandwidth and fidelity to work effectively. Internet access is frequently provided by companies that have significant market power that could take actions that degrade, disrupt, or increase the cost of user access to our network, which would negatively impact our business. We could incur greater operating expenses and our customer acquisition and retention could be negatively impacted if other network operators:

- implement usage-based pricing;
- discount pricing for competitive products;
- otherwise materially change their pricing rates or schemes;
- charge us to deliver our traffic at certain levels or at all;
- throttle traffic based on its source or type;
- implement bandwidth caps or other usage restrictions; or

- otherwise try to monetize or control access to their networks.

In addition, there are various laws and regulations that could impede the growth of the Internet or online services, and new laws and regulations may be adopted in the future. These laws and regulations could involve interconnection and network management; taxation; tariffs; privacy; data protection; content; copyrights; distribution; electronic contracts and other communications; consumer protection; and requirements for the characteristics and quality of services, any of which could decrease the demand for, or the usage of, our products. Legislators and regulators may make legal and regulatory changes, or interpret and apply existing laws, in ways that require us to incur substantial costs, expose us to unanticipated civil or criminal liability, or cause us to change our business practices. If these changes are implemented, it could have an adverse and negative impact on our business. In addition, we may be banned from providing our products in certain countries, which would prevent our ability to grow our business in such markets and would also have a detrimental impact on the performance and scope of our network. These changes or increased costs could materially harm our business, results of operations, and financial condition.

Failure to comply with laws and regulations applicable to our business could subject us to fines and penalties and could also cause us to lose customers or otherwise harm our business.

Our business is subject to regulation by various federal, state, local, and foreign governmental agencies, including agencies responsible for monitoring and enforcing compliance with various legal obligations, such as privacy and data protection laws and regulations, intellectual property laws, employment and labor laws, workplace safety, environmental laws, consumer protection laws, anti-bribery laws, governmental trade sanctions laws, import and export controls, anti-corruption and anti-bribery laws, federal securities laws, and tax laws and regulations. In certain jurisdictions, these regulatory requirements may be more stringent than in the United States. These laws and regulations impose added costs on our business. Noncompliance with applicable regulations or requirements could subject us to:

- investigations, enforcement actions, and sanctions;
- mandatory changes to our network and products;
- disgorgement of profits, fines, and damages;
- civil and criminal penalties or injunctions;
- claims for damages by our customers or channel partners;
- termination of contracts;
- loss of intellectual property rights; and
- temporary or permanent debarment from sales to government organizations.

If any governmental sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations, and financial condition could be adversely affected. In addition, responding to any action will likely result in a significant diversion of our management's attention and resources and an increase in professional fees. Enforcement actions and sanctions could materially harm our business, results of operations, and financial condition.

Additionally, companies in the technology industry have recently experienced increased regulatory scrutiny. Any reviews by regulatory agencies or legislatures may result in substantial regulatory fines, changes to our business practices, and other penalties, which could negatively affect our business and results of operations. Changes in social, political, and regulatory conditions or in laws and policies governing a wide range of topics may cause us to change our business practices. Further, our expansion into a variety of new fields also could raise a number of new regulatory issues. These factors could negatively affect our business and results of operations in material ways.

Our actual or perceived failure to comply with privacy, data protection, and information security laws, regulations, and obligations could harm our business.

We receive, store, use, and otherwise process personal information and other information relating to individuals. There are numerous federal, state, local, and international laws and regulations regarding privacy, data protection, information security, and the storing, sharing, use, processing, transfer, disclosure, and protection of personal information and other content, the scope of which are changing, subject to differing interpretations, and may be

inconsistent among jurisdictions, or conflict with other rules. These data protection and privacy-related laws and regulations are evolving and may result in ever-increasing regulatory and public scrutiny and escalating levels of enforcement and sanctions. For example, the EU's General Data Protection Regulation (the GDPR), in effect since May 25, 2018, imposes more stringent data protection requirements than previously effective EU data protection law and provides for penalties for noncompliance of up to the greater of €20 million or four percent of worldwide annual revenues. Additionally, Brexit has created additional uncertainty with regard to the regulation of data protection in the United Kingdom. In particular, although the United Kingdom has enacted a Data Protection Act that is designed to be consistent with the GDPR, it is unclear how data transfers to and from the United Kingdom will be regulated after Brexit. In addition, the California Consumer Privacy Act (the CCPA) went into effect on January 1, 2020. Among other things, the CCPA requires covered companies to provide new disclosures to California consumers and afford such consumers new abilities to access and delete their personal information, and to opt-out of certain sales of personal information. The California Attorney General is expected to issue regulations implementing the CCPA in the spring of 2020, and it remains unclear how significantly these regulations will impact covered companies' CCPA compliance efforts already in place or underway. There is also an effort by a privately funded citizen group to further change the CCPA by introducing a new initiative to appear on the November 2020 California ballot called the California Privacy Rights and Enforcement Act. We cannot yet predict the impact of the CCPA and its implementing regulations on our business or operations, but it may require us to modify our data processing practices and policies and to incur substantial costs and expenses in an effort to comply.

We are also subject to the terms of our privacy policies and contractual obligations to third parties related to privacy, data protection, and information security. We strive to comply with applicable laws, regulations, policies, and other legal obligations relating to privacy, data protection, and information security to the extent possible. However, the regulatory framework for privacy and data protection worldwide is, and is likely to remain, uncertain for the foreseeable future, and it is possible that these or other actual or alleged obligations may be interpreted and applied in a manner that is inconsistent from one jurisdiction to another and may conflict with other rules or our practices.

We also expect that there will continue to be new laws, regulations, and industry standards concerning privacy, data protection, and information security proposed and enacted in various jurisdictions. For example, in the United States, various laws and regulations apply to the collection, processing, disclosure and security of certain types of data, including the Electronic Communications Privacy Act, the Computer Fraud and Abuse Act, the Health Insurance Portability and Accountability Act of 1996, the Gramm-Leach-Bliley Act, and state laws relating to privacy and data security. Additionally, there are a number of proposed U.S. federal and state privacy and data protection bills under consideration in Congress and state legislatures across the country.

Any failure or perceived failure by us to comply with our privacy policies, our privacy-related obligations to customers or other third parties, applicable laws or regulations, or any of our other legal obligations relating to privacy, data protection, or information security may result in governmental investigations or enforcement actions, litigation, claims, or public statements against us by consumer advocacy groups or others and could result in significant liability or cause our customers to lose trust in us, which could cause them to cease or reduce use of our products and otherwise have an adverse effect on our reputation and business. Furthermore, the costs of compliance with, and other burdens imposed by, the laws, regulations, and policies that are applicable to the businesses of our customers may limit the adoption and use of, and reduce the overall demand for, our products.

Additionally, if third parties we work with, such as sub-processors, vendors, or developers, violate applicable laws or regulations, contractual obligations, or our policies—or if it is perceived that such violations have occurred—such actual or perceived violations may also have an adverse effect on our business. Further, any significant change to applicable laws, regulations, or industry practices regarding the collection, use, retention, security, disclosure, or other processing of users' content, or regarding the manner in which the express or implied consent of users for the collection, use, retention, disclosure, or other processing of such content is obtained, could increase our costs and require us to modify our network, products, and features, possibly in a material manner, which we may be unable to complete, and may limit our ability to store and process customer data or develop new products and features.

We are subject to anti-corruption, anti-bribery, and similar laws, and noncompliance with such laws can subject us to criminal penalties or significant fines and harm our business and reputation.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, the UK Bribery Act 2010, and other anti-corruption, anti-bribery, anti-money laundering, and similar laws in the United States and other countries in which we conduct activities. Anti-corruption and anti-bribery laws, which have been enforced aggressively and are interpreted broadly, prohibit companies and their employees and agents from promising, authorizing, making, or

offering improper payments or other benefits to government officials and others in the public sector. We leverage third parties, including channel partners, to sell subscriptions to our products, host many of our co-location facilities for our network, and conduct our business abroad. We and these third parties may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities and we may be held liable for the corrupt or other illegal activities of our business partners and intermediaries, our employees, representatives, contractors, channel partners and agents, even if we do not explicitly authorize such activities. Further, some of our international sales activity occurs, and some of our network infrastructure is located, in parts of the world that are recognized as having a greater potential for business practices that violate anti-corruption, anti-bribery, or similar laws.

We cannot assure you that all of our employees and agents have complied with, or in the future will comply with, our policies and applicable law. As we continue to increase our international sales and business and expand our network globally, our risks under these laws may increase. The investigation of possible violations of these laws, including internal investigations and compliance reviews that we may conduct from time to time, could have a material adverse effect on our business. Noncompliance with these laws could subject us to investigations, severe criminal or civil sanctions, settlements, prosecution, loss of export privileges, suspension or debarment from U.S. government contracts and other contracts, other enforcement actions, the appointment of a monitor, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, whistleblower complaints, adverse media coverage and other consequences. Other internal and government investigations, regulatory proceedings, or litigation, including private litigation filed by our stockholders, may also follow as a consequence. Any investigations, actions, or sanctions could materially harm our reputation, business, results of operations, and financial condition. Further, the promulgation of new laws, rules or regulations or new interpretations of current laws, rules or regulations could impact the way the we do business in other countries, including requiring us to change certain aspects of our business to ensure compliance, which could reduce revenue, increase costs, or subject us to additional liabilities.

We may face fines, penalties, or other costs, either directly or vicariously, if any of our partners, resellers, contractors, vendors or other third parties fail to adhere to their compliance obligations under our policies and applicable law.

We use a number of third parties to perform services or act on our behalf in areas like sales, network infrastructure, administration, research, and marketing. It may be the case that one or more of those third parties fail to adhere to our policies or violate applicable federal, state, local, and international laws, including but not limited to, those related to corruption, bribery, economic sanctions, and export/import controls. Despite the significant challenges in asserting and maintaining control and compliance by these third parties, we may be held fully liable for third parties' actions as fully as if they were a direct employee of ours. Such liabilities may create harm to our reputation, inhibit our plans for expansion, or lead to extensive liability either to private parties or government regulators, which could adversely impact our business, results of operations, and financial condition.

We are currently, and may be in the future, party to intellectual property rights claims and other litigation matters that, if resolved adversely, could have a material impact on our business, results of operations, or financial condition.

We own a large number of patents, copyrights, trademarks, domain names, and trade secrets and, from time to time, are subject to litigation based on allegations of infringement, misappropriation, or other violations of intellectual property or other rights. As we face increasing competition and gain an increasingly high profile, the possibility of intellectual property rights claims, commercial claims, and other assertions against us grows. In addition, a number of companies in our industry hold a large number of patents and also protect their copyright, trade secret, and other intellectual property rights, and companies in the networking and security industry frequently enter into litigation based on allegations of patent infringement or other violations of intellectual property rights. We have in the past been, are currently, and may from time to time in the future become, a party to litigation and disputes related to intellectual property, our business practices, and our products. For example, we are a defendant in lawsuits, both in the United States and abroad, seeking injunctive relief and/or damages against us based on content that is made available through our customers' websites, and a number of these lawsuits involve copyright infringement claims. We may also be subject to governmental and other regulatory investigations from time to time. The costs of supporting litigation and dispute resolution proceedings are considerable, and there can be no assurances that a favorable outcome will be obtained. Disputes, whether or not favorably resolved, may generate negative publicity and damage our reputation. We may need to settle litigation and disputes on terms that are unfavorable to us, or we may be subject to an unfavorable judgment that may not be reversible upon appeal. The terms of any settlement or

judgment may require us to cease some or all of our operations or pay substantial amounts to the other party. With respect to any intellectual property rights claim, we may have to seek a license to continue practices found to be in violation of third-party rights, which may not be available on reasonable terms and may significantly increase our operating expenses. A license to continue such practices may not be available to us at all, and we may be required to develop alternative non-infringing technology or practices or discontinue the practices. The development of alternative, non-infringing technology or practices could require significant effort and expense. Our business, results of operations, and financial condition could be materially and adversely affected as a result.

Indemnity provisions in various agreements potentially expose us to substantial liability for intellectual property infringement and other losses.

Our agreements with certain of our customers or other third parties may include indemnification or other provisions under which we agree to indemnify or otherwise be liable to them for losses suffered or incurred as a result of claims of intellectual property infringement, damages caused by us to property or persons, or other liabilities relating to or arising from the use of our platform or other acts or omissions. The term of these contractual provisions often survives termination or expiration of the applicable agreement. We have in the past been sued on the basis of alleged violation of intellectual property rights in the form of patents and trade secrets. Although we were successful in defending the claims to date, as we continue to grow, the possibility of these and other intellectual property rights claims against us may increase. For any intellectual property rights indemnification claim against us or our customers, we may incur significant legal expenses and have to pay damages, pay license fees and/or stop using technology found to be in violation of the third party's rights. Large indemnity payments could harm our business, results of operations, and financial condition. We may also have to seek a license for the disputed technology. Such license may not be available on reasonable terms, if at all, and may significantly increase our operating expenses or may require us to restrict our business activities and limit our ability to deliver certain products. As a result, we may also be required to develop alternative non-infringing technology, which could require significant effort and expense and/or cause us to alter our platform, which could negatively affect our business.

From time to time, customers require us to indemnify or otherwise be liable to them for breach of confidentiality, violation of applicable law, or failure to implement adequate security measures with respect to their data stored, transmitted, or accessed using our platform. Our standard Enterprise plan agreements provide limited indemnification to our customers based on third-party claims related to our violation of intellectual property rights, and some of our Enterprise plan agreements offer indemnification for claims beyond that scope. The existence of such a dispute may have adverse effects on our customer relationship and reputation and we may still incur substantial liability related to them.

Any assertions by a third party, whether or not successful, with respect to such indemnification obligations could subject us to costly and time-consuming litigation, expensive remediation and licenses, divert management attention and financial resources, harm our relationship with that customer and other current and prospective customers, reduce demand for our products, and harm our brand, business, results of operations, and financial condition.

Our failure to protect our intellectual property rights and proprietary information could diminish our brand and other intangible assets.

We rely and expect to continue to rely on a combination of patent, patent licenses, trade secret, domain name protection, trademarks, copyrights, and confidentiality and license agreements with our employees, consultants, and third parties in order to protect our intellectual property and proprietary rights. As of December 31, 2019, we had over 110 issued patents and over 70 pending patent applications in the United States and abroad. However, third parties may knowingly or unknowingly infringe our proprietary rights. Third parties may challenge our proprietary rights, pending and future patent, trademark, and copyright applications may not be approved, and we may not be able to prevent infringement without incurring substantial expense. We have also devoted substantial resources to the development of our proprietary technologies and related processes, and we provide access to these technologies and processes to certain of our vendors and partners, including Baidu with respect to the facilities included within our network in China. We must protect this proprietary information in order to realize commercial benefit from our investment.

In order to protect our proprietary technologies and processes, we rely in part on trade secret laws and confidentiality agreements with our employees, consultants, and third parties. These agreements may not effectively prevent disclosure of confidential information and may not provide an adequate remedy in the event of unauthorized disclosure of confidential information. In addition, others may independently discover our trade secrets or develop

similar technologies and processes, in which case we would not be able to assert trade secret rights against them. Laws in certain jurisdictions may afford little or no trade secret protection, and any changes in, or unexpected interpretations of, the intellectual property laws in any country in which we operate may compromise our ability to enforce our intellectual property rights. We may not be effective in policing unauthorized use of our intellectual property rights, and even if we do detect violations, costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and any such litigation could be unsuccessful, lead to the invalidation of our proprietary rights, or lead to counterclaims by other parties against us. If the protection of our proprietary rights is inadequate to prevent use or appropriation by third parties, the value of our platform, brand, and other intangible assets may be diminished and competitors may be able to more effectively replicate our platform and its features. Any of these events could materially and adversely affect our business, results of operations, and financial condition.

We depend and rely upon software and technologies licensed from third parties to operate our business, and interruptions or the unavailability of these technologies may adversely affect our products, network, business, and results of operations.

We rely on software, services, and other technology from third parties that we incorporate into, or integrate with, our platform and products. We also rely on software, services, and other technology from third parties in order to operate critical functions of our business, including enterprise resource planning and customer relationship management services. If the software, services, or other technology we rely on become unavailable due to extended outages, the third-party provider disabling our access, expiration or termination of licenses, or because they are otherwise no longer available on commercially reasonable terms, our expenses could increase, and our ability to operate our network, provide our products, and our results of operations could be impaired until equivalent software, technology, or services are obtained or replacements are developed, all of which could adversely affect our business.

If we are unable to license necessary technology from third parties now or in the future, we may be forced to acquire or develop alternative technology, which we may be unable to do in a commercially feasible manner or at all, and we may be required to use alternative technology of lower quality or performance. This could limit and delay our ability to offer new or competitive products and increase our costs of production. As a result, our business and results of operations could be significantly harmed.

We cannot be certain that those from whom we license software and other technology are not infringing the intellectual property rights of third parties or have sufficient rights to the licensed intellectual property in all jurisdictions in which we may sell our products. Accordingly, our use of this intellectual property may expose us to third-party claims of infringement. In addition, many licenses are non-exclusive and may not prevent our competitors from licensing the same technology on equivalent or more favorable terms.

Some of our technology incorporates “open source” software, we license some of our software through open source projects and we voluntarily make available some of our software on an open source basis, which could negatively affect our ability to sell our products, subject us to possible litigation, and be used by other companies to compete against us.

Our platform and products incorporate software licensed under open source licenses, including open source software included in software we receive from third-party commercial software vendors. Use of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide support, updates, or warranties, or other contractual protections regarding infringement claims or the quality of the software. In addition, the wide availability of source code incorporated in our products could allow hostile parties to more easily identify security vulnerabilities in our platform and products. The terms of some open source licenses may provide that under certain conditions we could be required to release the source code of our proprietary software, and to make our proprietary software available under open source licenses, including authorizing further modification and redistribution. In the event that certain portions of our proprietary software are determined to be subject to such requirements by an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our network or applicable products, or otherwise be limited in the licensing of our products, each of which provide an advantage to our competitors or other entrants to the market, create security vulnerabilities in our products, and could reduce or eliminate the value of our products. Because the terms of open source licenses are novel and have not been widely interpreted by courts, we could be subject to lawsuits by parties claiming ownership of what we believe to be open source software or by third parties seeking to enforce the terms of open source licenses against us in a manner we do not anticipate. In

addition, we voluntarily make available certain portions of our software on an open source basis to the public and such software could then be used by other companies to compete against us.

Any unanticipated disclosure of, or litigation regarding, our source code and any open source software incorporated into our source code could result in adverse judgments and liabilities, require us to reengineer all or a portion of our platform and products, limit the marketing of our products, provide an advantage to our competitors or other entrants to the market, create new security vulnerabilities or highlight existing security vulnerabilities in our platform and products, and reduce or eliminate the value of our platform and products. We cannot assure you that our processes for controlling our use of open source software in our platform and products will be effective.

Our business depends, in part, on sales to U.S. and foreign government organizations, which are subject to a number of challenges and risks.

We derive a portion of our revenue from contracts with government organizations, and we believe the success and growth of our business will in part depend on adding additional public sector customers. However, demand from government organizations is often unpredictable, and we cannot assure you that we will be able to maintain or grow our revenue from the public sector. Sales to government entities are subject to substantial additional risks that are not present in sales to other customers, including:

- selling to government agencies can be more highly competitive, expensive, and time-consuming than sales to other customers, often requiring significant upfront time and expense without any assurance that such efforts will generate a sale;
- U.S., European, or other government certification and audit requirements potentially applicable to our network, including the FedRAMP in the U.S., are often difficult and costly to obtain and maintain, and failure to do so will restrict our ability to sell to government customers;
- government demand and payment for our products may be impacted by public sector budgetary cycles, funding authorizations, or government shutdowns;
- governments routinely investigate and audit government contractors' administrative processes and any unfavorable audit could result in fines, civil or criminal liability, further investigations, damage to our reputation, and debarment from further government business;
- governments often require contract terms that differ from our standard customer arrangements, including terms that can lead to those customers obtaining broader rights in our products than would be expected under a standard commercial contract and terms that can allow for early termination; and
- governments may demand better pricing terms and public disclosure of such pricing terms, which may harm our ability to negotiate pricing terms with our non-government customers.

In addition, we must comply with laws and regulations relating to the formation, administration, and performance of contracts with the public sector, including U.S. federal, state, and local governmental organizations, which affect how we and our channel partners do business with governmental agencies. Selling our products to the U.S. government, whether directly or through channel partners, also subjects us to certain regulatory and contractual requirements. Failure to comply with these requirements by either us or our channel partners could subject us to investigations, fines, and other penalties, which could have an adverse effect on our business, results of operations, and financial condition. For example, the U.S. Department of Justice (the DOJ) and the General Services Administration (the GSA) have in the past pursued claims against and financial settlements with vendors under the False Claims Act and other statutes related to pricing and discount practices and compliance with certain provisions of GSA contracts for sales to the federal government. The DOJ and GSA continue to actively pursue such claims. Violations of certain regulatory and contractual requirements could also result in us being suspended or debarred from future government contracting. Any of these outcomes could have a material adverse effect on our revenue, results of operations, and financial condition. Any inability to address these risks and challenges could reduce the commercial benefit to us or otherwise preclude us from selling subscriptions to our products to government organizations.

We may have exposure to greater than anticipated income tax liabilities and may be affected by changes in tax laws, which could adversely impact our results of operations.

We operate in a number of tax jurisdictions globally, including in the United States at the federal, state, and local levels, and in many other countries, and plan to continue to expand the scale of our operations in the future.

Accordingly, we are subject to income taxes in the United States and various jurisdictions outside of the United States. While to date we have not incurred significant income taxes in operating our business, we may in the future face significant tax liabilities. Our tax expense could also be impacted by changes in non-deductible expenses, changes in excess tax benefits from stock-based compensation, changes in the valuation of deferred tax assets and liabilities and our ability to utilize them, the applicability of withholding taxes, and effects from acquisitions.

Our tax provision could also be impacted by changes in accounting principles, changes in U.S. federal, state, or international tax laws applicable to corporate multinationals such as the recent legislation enacted in the United States, other fundamental law changes currently being considered by many countries, and changes in taxing jurisdictions' administrative interpretations, decisions, policies, and positions. For example, on December 22, 2017, tax reform legislation referred to as the Tax Cuts and Jobs Act (the Tax Act) was enacted in the United States. The Tax Act significantly revises U.S. federal income tax law, including lowering the corporate income tax rate to 21%, requiring companies to pay a one-time transition tax on certain unrepatriated earnings of foreign subsidiaries, implementing a modified territorial tax system, requiring a current inclusion in U.S. federal taxable income of certain earnings of controlled foreign corporations, and creating a base erosion anti-abuse tax.

Additionally, in October 2015, the Organisation for Economic Co-Operation and Development (the OECD) released final guidance covering various topics, including transfer pricing, country-by-country reporting, and definitional changes to permanent establishment that could ultimately impact our tax liabilities. In March 2018, the European Commission released a proposal for a European Council directive on taxation of specified digital services. The proposal calls for an interim tax on certain revenues from digital activities, as well as a longer-term regime that creates a taxable presence for digital services and imposes tax on digital profits. We do not yet know the impact this proposal, if implemented, would have on our financial results. A number of other jurisdictions, including the United Kingdom, are considering enacting similar digital tax regimes. These efforts are alongside the OECD's ongoing work, as part of its Base Erosion and Profit Shifting Action Plan, to issue a final report in 2020 that provides a long-term, multilateral proposal on taxation of the digital economy. Any of the foregoing changes could have an adverse impact on our results of operations, cash flows, and financial condition.

Our results of operations may be harmed if we are required to collect sales and use, gross receipts, value-added, or similar taxes for our products in jurisdictions where we have not historically done so.

Sales and use, value-added, goods and services, and similar tax laws and rates vary greatly by jurisdiction. Our customers can be located in one jurisdiction, utilize our platform and products through our network equipment in a different jurisdiction, and pay us from an account located in a third jurisdiction. This divergence, along with the jurisdiction-by-jurisdiction variance in tax laws, causes significant uncertainty in the tax treatment of our business. There is further uncertainty as to what constitutes sufficient physical presence or nexus for a national, state, or local jurisdiction to levy taxes, fees, and surcharges for sales made over the Internet, and there is also uncertainty as to whether our characterization of our platform and products as not taxable in certain jurisdictions will be accepted by national, state, and local taxing authorities. In determining our tax filing obligations, management has made judgments regarding whether our activities in a jurisdiction rise to the level of taxability. These judgments may prove inaccurate, and one or more states or countries may seek to impose additional sales, use, or other tax collection obligations on us, including for past sales by us. It is possible that we could face sales tax audits and that our liability for these taxes could exceed our estimates as state and other tax authorities could still assert that we are obligated to collect additional amounts as taxes from our customers and remit those taxes to those authorities. Furthermore, the U.S. Supreme Court's ruling in *South Dakota v. Wayfair* may permit wider enforcement of sales tax collection requirements. A successful assertion by a state, country, or other jurisdiction that we should have been or should be collecting additional sales, use, or other taxes on our platform and products could, among other things, result in substantial tax liabilities for past sales, create significant administrative burdens for us, discourage customers from purchasing our platform and products, or otherwise harm our business, results of operations, and financial condition.

Our international operations require us to exercise judgment in determining the applicability of tax laws, which may subject us to potentially adverse tax consequences.

We are subject to income taxes as well as non-income-based taxes, such as payroll, sales, use, value-added, property, and goods and services taxes, in both the United States and various foreign jurisdictions. Our domestic and international tax liabilities are subject to various jurisdictional rules regarding the timing and allocation of revenue and expenses. Additionally, the amount of income taxes paid is subject to our interpretation of applicable tax laws in the jurisdictions in which we file and to changes in tax laws. Significant judgment is required in

determining our worldwide provision for income taxes and other tax liabilities. From time to time, we may be subject to income and non-income tax audits. While we believe we have complied with all applicable income tax laws, there can be no assurance that a governing tax authority will not have a different interpretation of the law and assess us with additional taxes, including with respect to intercompany transfer pricing and the collection of sales and use tax, value-added tax, and goods and services tax. Should we be assessed with additional taxes, there could be a material adverse effect on our business, results of operations, and financial condition.

Our future effective tax rate may be affected by such factors as changes in tax laws, regulations, or rates, changing interpretation of existing laws or regulations, the impact of accounting for stock-based compensation, the impact of accounting for business combinations, changes in our international organization, and changes in our overall levels of income before tax. In addition, in the ordinary course of our global business, there are many intercompany transactions and calculations where the ultimate tax determination is uncertain. Although we believe that our tax estimates are reasonable, we cannot ensure that the final determination of tax audits or tax disputes will not be different from what is reflected in our historical income tax provisions and accruals. There can be no assurance that the outcomes from these continuous examinations will not have an adverse effect on our results of operations.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

As of December 31, 2019, we had net operating loss carryforwards for U.S. federal income tax purposes of \$221.5 million, net of uncertain tax positions, available to offset future U.S. federal taxable income that will begin to expire in 2029 for tax years beginning before December 31, 2017. Also as of December 31, 2019, we had net operating loss carryforwards for state income tax purposes of \$104.7 million, net of uncertain tax positions, available to offset future state taxable income that will begin to expire in 2026. As of December 31, 2019, we had foreign tax credit carryforwards for federal income tax purposes of \$1.8 million that will begin to expire, if not utilized, in 2025. Also as of December 31, 2019, we had federal research and development tax credit carryforwards of \$8.5 million that will begin to expire in 2029 and state research and development tax credit carryforwards of \$6.5 million that can be carried forward indefinitely.

Utilization of our net operating loss carryforwards and other tax attributes, such as research and development tax credits, may be subject to annual limitations, or could be subject to other limitations on utilization or benefit due to the ownership change limitations provided by Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), and other similar provisions. Under Sections 382 and 383 of the Code, if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change attributes, such as research tax credits, to offset its post-change income may be limited. In general, an "ownership change" will occur if there is a cumulative change in our ownership by "5-percent shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. We may have experienced various ownership changes, as defined by the Code, as a result of past financing transactions (or other activities), and we may experience ownership changes in the future as a result of subsequent changes in our stock ownership, some of which may be outside our control. Accordingly, our ability to utilize the aforementioned carryforwards may be limited.

Further, the Tax Act changed the federal rules governing net operating loss carryforwards. For net operating loss carryforwards arising in tax years beginning after December 31, 2017, the Tax Act limits a taxpayer's ability to utilize such carryforwards to 80% of taxable income. In addition, net operating loss carryforwards arising in tax years ending after December 31, 2017 can be carried forward indefinitely, but carryback is generally prohibited. Net operating loss carryforwards generated before January 1, 2018 will not be subject to the Tax Act's taxable income limitation and will continue to have a twenty-year carryforward period. Nevertheless, our net operating loss carryforwards and other tax assets could expire before utilization and could be subject to limitations, which could harm our business, revenue, and financial results.

We rely on third-party software for certain essential financial and operational services, and a failure or disruption in these services could materially and adversely affect our ability to manage our business effectively.

We rely on third-party software to provide many essential financial and operational services to support our business, including NetSuite, Salesforce, Atlassian, and Workday. Many of these vendors are less established and have shorter operating histories than traditional software vendors. Moreover, these vendors provide their services to us via a cloud-based model instead of software that is installed on our premises. As a result, we depend upon these vendors to provide us with services that are always available and are free of errors or defects that could cause

disruptions in our business processes. Any failure by these vendors to do so, or any disruption in our ability to access the Internet, would materially and adversely affect our ability to manage our operations.

Our business is exposed to risks associated with credit card and other online payment processing methods.

Many of our customers pay for our service using a variety of different payment methods, including credit and debit cards, prepaid cards, direct debit, and online wallets. We rely on internal systems as well as those of third parties to process payments. Acceptance and processing of these payment methods are subject to certain rules and regulations and require payment of interchange and other fees. To the extent there are increases in payment processing fees, material changes in the payment ecosystem, such as large re-issuances of payment cards, delays in receiving payments from payment processors, changes to rules or regulations concerning payment processing, loss of payment partners, and/or disruptions or failures in our payment processing systems or payment products, including products we use to update payment information, our revenue, operating expenses, and results of operation could be adversely impacted. In addition, from time to time, we encounter fraudulent use of payment methods, which could impact our results of operations and if not adequately controlled and managed could create negative consumer perceptions of our service. If we are unable to maintain our chargeback rate at acceptable levels, card networks may impose fines and our card approval rate may be impacted. If we fail to comply with the rules or requirements applicable to processing payments, or if our data security systems are breached, compromised, or otherwise unable to detect or prevent fraudulent activity, we may be liable for card issuing banks' costs, subject to fines and higher transaction fees, and lose our ability to accept certain payments from our customers. The termination of our ability to process payments using any major payment method our business, results of operations, and financial condition could be harmed.

Because we recognize revenue from subscriptions for our products over the term of the subscription, downturns or upturns in new business may not be immediately reflected in our results of operations and may be difficult to discern.

We generally recognize revenue from customers ratably over the term of their subscription, which in the case of our contracted customers range from one to three years and in the case of our pay-as-you-go customers is typically monthly. Consequently, any increase or decline in new sales or renewals to these customers in any one period may not be immediately reflected in our revenue for that period. Any such change, however, may affect our revenue in future periods. Accordingly, the effect of downturns or upturns in new sales and potential changes in our rate of renewals may not be fully reflected in our results of operations until future periods. We may also be unable to reduce our cost structure in line with a significant deterioration in sales or renewals. Our subscription model also makes it difficult for us to rapidly increase our revenue through additional sales in any period, as revenue from new customers must be recognized over the applicable subscription term.

By contrast, a significant majority of our costs are expensed as incurred, which occurs as soon as a customer starts using our platform. As a result, an increase in customers could result in our recognition of more costs than revenue in the earlier portion of the subscription term. We may not attain sufficient revenue to maintain positive cash flow from operations or achieve profitability in any given period.

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

Substantially all of our sales contracts are denominated in U.S. dollars and, therefore, substantially all of our revenue is not subject to foreign currency risk. However, a strengthening of the U.S. dollar could increase the real cost of our products to our customers outside of the United States, which could reduce demand for our products and adversely affect our financial condition and results of operations.

As our international operations expand, an increasing portion of our revenue and operating expenses is incurred outside the United States and is denominated in foreign currencies, such as the British Pound and Singapore Dollar. Accordingly, our revenue and operating expenses are increasingly subject to fluctuations due to changes in foreign currency exchange rates. As we continue to expand our international operations, we may become more exposed to foreign currency risk or remeasurement risk. If we become more exposed to currency fluctuations and are not able to successfully hedge against the risks associated with currency fluctuations, our results of operations could be materially and adversely affected.

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

The preparation of financial statements in conformity with generally accepted accounting principles in the United States (U.S. GAAP) requires our management to make estimates and assumptions that affect the amounts reported and disclosed in our consolidated financial statements and accompanying notes. We base our estimates and assumptions on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities, and equity, and the amount of revenue and expenses that are not readily apparent from other sources. Significant assumptions and estimates used in preparing our consolidated financial statements include those related to determination of deferred contract acquisitions costs, the period of benefit generated from our deferred contract acquisition costs, the capitalization and estimated useful life of internal-use software, useful lives of property and equipment, the valuation and recognition of stock-based compensation, uncertain tax positions, and the recognition and measurement of current and deferred income tax assets and liabilities. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of industry or financial analysts and investors, resulting in a decline in the trading price of our common stock.

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

If we fail to maintain an effective system of disclosure controls and internal control over financial reporting, our ability to produce timely and accurate financial statements or comply with applicable regulations could be impaired.

We are subject to the reporting requirements of the Securities Exchange Act of 1934, as amended (the Exchange Act), the Sarbanes-Oxley Act of 2002 (the Sarbanes-Oxley Act), and the rules and regulations of the applicable listing standards of the New York Stock Exchange (the NYSE). We expect that the requirements of these rules and regulations will continue to increase our legal, accounting, and financial compliance costs, make some activities more difficult, time-consuming, and costly, and place significant strain on our personnel, systems, and resources.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are continuing to develop and refine our disclosure controls and other procedures that are designed to ensure that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms and that information required to be disclosed in reports under the Exchange Act is accumulated and communicated to our principal executive and financial officers. We are also continuing to improve our internal control over financial reporting. In order to maintain and improve the effectiveness of our disclosure controls and procedures and internal control over financial reporting, we have expended, and anticipate that we will continue to expend, significant resources, including accounting-related costs, and significant management oversight.

Our current controls and any new controls that we develop may become inadequate because of changes in conditions in our business. Further, weaknesses in our disclosure controls and internal control over financial reporting may be discovered in the future. Any failure to develop or maintain effective controls or any difficulties encountered in their implementation or improvement could harm our results of operations or cause us to fail to meet our reporting obligations and may result in a restatement of our financial statements for prior periods. Any failure to implement and maintain effective internal control over financial reporting also could adversely affect the results of periodic management evaluations and annual independent registered public accounting firm attestation reports regarding the effectiveness of our internal control over financial reporting that we will eventually be required to include in our periodic reports that will be filed with the SEC. Ineffective disclosure controls and procedures and internal control over financial reporting could also cause investors to lose confidence in our reported financial and other information, which would likely have a negative effect on the trading price of our Class A common stock. In

addition, if we are unable to continue to meet these requirements, we may not be able to remain listed on the NYSE. We will be required to provide an annual management report on the effectiveness of our internal control over financial reporting commencing with our second annual report on Form 10-K.

In the period ended December 31, 2017, we identified one material weakness in our internal control over financial reporting related to our lack of a formal process over stock administration and lack of adequate controls to ensure that all stock issuances and stock-based compensation transactions were completely and accurately documented, executed, and properly reflected in our consolidated financial statements and our capitalization table. Although the material weakness was remediated as of December 31, 2018, there can be no assurance that we will maintain internal control over financial reporting sufficient to enable us to identify or avoid material weaknesses in the future.

Our independent registered public accounting firm is not required to formally attest to the effectiveness of our internal control over financial reporting until after we are no longer an “emerging growth company” as defined in the JOBS Act. At such time, our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our internal control over financial reporting is documented, designed, or operating. Any failure to maintain effective disclosure controls and internal control over financial reporting could materially and adversely affect our business, results of operations, and financial condition and could cause a decline in the trading price of our Class A common stock.

Our business is subject to the risks of catastrophic events.

The occurrence of any catastrophic event, including an earthquake, fire, flood, tsunami, or other weather event, power loss, telecommunications failure, software or hardware malfunctions, epidemic or pandemic diseases (such as the coronavirus that originated in China in 2019 and began to spread globally in early 2020), cyber-attack, war, or terrorist attack, could result in lengthy interruptions in our service. Our corporate headquarters is located in the San Francisco Bay Area and one of our core co-location facilities is located in the U.S. Pacific Northwest, both regions known for seismic activity, and we also have a second core co-location facility in Luxembourg. Our insurance coverage may not compensate us for losses that may occur in the event of an earthquake or other significant natural disaster. In addition, acts of terrorism could cause disruptions to the Internet or the economy as a whole. Even with our disaster recovery arrangements, our service could be interrupted. If our systems were to fail or be negatively impacted as a result of a natural disaster or other event, our ability to deliver products to our customers would be impaired or we could lose critical data.

Our partners, suppliers, and customers are also subject to the risk of catastrophic events. In those events, our ability to deliver our products in a timely manner, as well as the demand for our products, may be divided on account of factors outside our control.

Future acquisitions, strategic investments, partnerships, or alliances could be difficult to identify and integrate, divert the attention of key management personnel, disrupt our business, dilute stockholder value, and adversely affect our results of operations, financial condition, and prospects.

Part of our business strategy is to make acquisitions of other companies, products, and technologies. For example, in January 2020, we acquired S2 Systems Corporation, a company that has developed patented browser isolation technology. We have limited experience in making acquisitions. We also may not be able to find suitable acquisition candidates and we may not be able to complete acquisitions on favorable terms, if at all. If we do complete acquisitions, we may not ultimately strengthen our competitive position or achieve our goals, and any acquisitions we complete could be viewed negatively by customers, developers, or investors. In addition, we may not be able to integrate acquired businesses successfully or effectively manage the combined company following an acquisition. If we fail to successfully integrate our acquisitions, or the people or technologies associated with those acquisitions, into our company, the results of operations of the combined company could be adversely affected. Any integration process will require significant time and resources, require significant attention from management, and disrupt the ordinary functioning of our business, and we may not be able to manage the process successfully, which could adversely affect our business, results of operations, and financial condition. In addition, we may not successfully evaluate or utilize the acquired technology and accurately forecast the financial impact of an acquisition transaction, including accounting charges.

In order to expand our network and product offerings, we also may enter into relationships with other businesses, which could involve joint ventures, preferred or exclusive licenses, additional channels of distribution, or investments in other companies. Negotiating these transactions can be time-consuming, difficult, and costly, and our ability to

close these transactions may be subject to third-party approvals, such as government regulatory approvals, which are beyond our control. Consequently, we cannot assure you that these transactions, once undertaken and announced, will close or will lead to commercial benefit for us.

In connection with the foregoing strategic transactions, we may:

- issue additional equity securities that would dilute our stockholders;
- use cash that we may need in the future to operate our business;
- incur debt on terms unfavorable to us or that we are unable to repay;
- incur large charges or substantial liabilities;
- encounter difficulties integrating diverse business cultures; and
- become subject to adverse tax consequences, substantial depreciation, or deferred compensation charges.

These challenges related to acquisitions or other strategic transactions could adversely affect our business, results of operations, financial condition, and prospects.

Certain of our key business metrics could prove to be inaccurate, and any real or perceived inaccuracies may harm our reputation and negatively affect our business.

We rely on assumptions and estimates to calculate certain of our key business metrics, such as dollar-based net retention rate. We regularly review and may adjust our processes for calculating our key business metrics to improve their accuracy. For example, we recently announced a change in how we will calculate our key business metrics starting during 2020 so that they will be based on revenue instead of billings. Our key business metrics may differ from estimates published by third parties or from similarly titled metrics of our competitors due to differences in methodology. If investors or analysts do not perceive our key business metrics to be accurate representations of our business, or if we discover material inaccuracies in our key business metrics, our reputation, business, results of operations, and financial condition would be harmed.

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

We are subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, the listing requirements of the NYSE, and other applicable securities rules and regulations. Compliance with these rules and regulations increases our legal and financial compliance costs, makes some activities more difficult, time-consuming, or costly, and increases demand on our systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly, and current reports with respect to our business and results of operations. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight is required. We are required to disclose changes made in our internal control and procedures on a quarterly basis and we will be required to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting. As a result of the complexity involved in complying with the rules and regulations applicable to public companies, our management's attention may be diverted from other business concerns, which could adversely affect our business and results of operations. Although we have already hired additional employees and have engaged outside consultants to assist us in complying with these requirements, we may need to hire more employees in the future or engage additional outside consultants, which will increase our operating expenses.

In addition, changing laws, regulations, and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs, and making some activities more time consuming. These laws, regulations, and standards are subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest substantial resources to comply with evolving laws, regulations, and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations, and

standards differ from the activities intended by regulatory or governing bodies due to ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be adversely affected.

Failure to comply with the aforementioned rules and regulations may make it more expensive for us to maintain director and officer liability insurance, and in the future we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our Board of Directors, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

As a result of disclosure of information in our filings with the SEC, our business and financial condition are visible, which we believe may result in threatened or actual litigation, including by competitors and other third parties. If such claims are successful, our business and results of operations could be adversely affected, and even if the claims do not result in litigation or are resolved in our favor, these claims, and the time and resources necessary to resolve them, could divert the resources of our management and adversely affect our business and results of operations.

Our management team has limited experience managing a public company.

Most members of our management team have limited experience managing a publicly traded company, interacting with public company investors, and complying with the increasingly complex laws pertaining to public companies. Our management team may not successfully or efficiently manage our company, which is subject to significant regulatory oversight and reporting obligations under the federal securities laws and the continuous scrutiny of securities analysts and investors. These new obligations and constituents require significant attention from our senior management and could divert their attention away from the day-to-day management of our business, which could harm our business, results of operations, and financial condition.

Risks Related to Ownership of Our Class A Common Stock

The trading price of our Class A common stock may be volatile, and you could lose all or part of your investment.

Prior to our IPO, there was no public market for shares of our Class A common stock. The trading price of our Class A common stock is likely to be volatile and could be subject to fluctuations in response to various factors, some of which are beyond our control. These fluctuations could cause you to lose all or part of your investment in our Class A common stock. Factors that could cause fluctuations in the trading price of our Class A common stock include:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the trading prices and trading volumes of technology stocks;
- changes in operating performance and stock market valuations of other technology companies generally, or those in our industry in particular;
- sales of shares of our Class A common stock and Class B common stock by us or our stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow our company, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections, or our failure to meet those projections;
- announcements by us or our competitors of new products, features, or services;
- the public's reaction to our press releases, other public announcements, and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our results of operations or fluctuations in our results of operations;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;

- litigation involving us, our industry, or both, or investigations by regulators into our operations or those of our competitors;
- developments or disputes concerning our intellectual property or other proprietary rights;
- actual or perceived data security breaches or other data security incidents;
- announced or completed acquisitions of businesses, products, services, or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations, or principles;
- any significant change in our management; and
- general economic conditions and slow or negative growth of our markets.

In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources.

We may need additional capital, and we cannot be certain that additional financing will be available on favorable terms, or at all.

Historically, we have financed our operations primarily through the sale of our equity securities as well as payments received from customers using our global cloud platform. Although we currently anticipate that our existing cash, cash equivalents, and available-for-sale securities, and cash flow from operations will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months, we may require additional financing. We evaluate financing opportunities from time to time, and our ability to obtain financing will depend, among other things, on our development efforts, business plans, and operating performance, and the condition of the capital markets at the time we seek financing. We cannot assure you that additional financing will be available to us on favorable terms when required, or at all. If we raise additional funds through the issuance of equity or equity-linked or debt securities, those securities may have rights, preferences or privileges senior to the rights of our Class A common stock, and, in the case of equity or equity-linked securities, our stockholders may experience dilution.

The dual-class structure of our common stock has the effect of concentrating voting control with those stockholders who held our capital stock prior to the completion of our initial public offering, and it may depress the trading price of our Class A common stock.

Our Class B common stock has 10 votes per share and our Class A common stock has one vote per share. As of December 31, 2019, our directors, executive officers, and holders of more than 5% of our common stock, and their respective affiliates, held in the aggregate 84.6% of the voting power of our capital stock. Because of the ten-to-one voting ratio between our Class B and Class A common stock, the holders of our Class B common stock collectively continue to control a majority of the combined voting power of our common stock and therefore are able to control all matters submitted to our stockholders for approval. This concentrated control will limit or preclude the ability of holders of Class A common stock to influence corporate matters for the foreseeable future, including the election of directors, amendments of our organizational documents, and any merger, consolidation, sale of all or substantially all of our assets, or other major corporate transaction requiring stockholder approval. In addition, this may prevent or discourage unsolicited acquisition proposals or offers for our capital stock that you may feel are in your best interest as one of our stockholders.

Future transfers by holders of shares of Class B common stock and the cessation of employment by holders of our Class B common stock generally result in those shares converting to Class A common stock, subject to limited exceptions, such as certain transfers effected for estate planning purposes and transfers between related entities. The conversion of Class B common stock to Class A common stock will have the effect, over time, of increasing the relative voting power of those individual holders of Class B common stock who retain their shares in the long-term.

In July 2017, FTSE Russell and Standard & Poor's announced that they would cease to include most newly public companies utilizing dual or multi-class capital structures in their indices. Affected indices include the Russell 2000 and the S&P 500, S&P MidCap 400, and S&P SmallCap 600, which together make up the S&P Composite 1500.

Under the announced policies, our multi-class capital structure likely makes us ineligible for inclusion in any of these indices, and as a result, mutual funds, exchange-traded funds, and other investment vehicles that attempt to passively track these indices may not invest in our stock. These policies are still new and it is as of yet unclear what effect, if any, they will have on the valuations of publicly traded companies excluded from the indices, but it is possible that they may depress these valuations compared to those of other similar companies that are included.

Substantial future sales could depress the market price of our Class A common stock.

The market price of our Class A common stock could decline as a result of sales of a large number of shares of such stock, and the perception that these sales could occur may also depress the market price of our Class A common stock.

Under our investors' rights agreement, certain stockholders can require us to register shares owned by them for public sale in the United States. In addition, we file registration statements to register shares reserved for future issuance under our equity compensation plans. As a result, subject to the satisfaction of applicable exercise periods, the shares issued upon exercise of outstanding stock options or upon settlement of outstanding RSU awards are available for immediate resale in the United States in the open market.

Sales of our shares may make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate. These sales also could cause the trading price of our Class A common stock to fall and make it more difficult for you to sell shares of our Class A common stock.

We have broad discretion over the use of the net proceeds from our IPO and we may not use them effectively.

We cannot specify with any certainty the particular uses of the net proceeds that we received from our IPO and our management has broad discretion in the application of the net proceeds. The failure by our management to apply these proceeds effectively could adversely affect our business, results of operations, and financial condition. Pending their use, we may invest our proceeds in a manner that does not produce income or that loses value. Our investments may not yield a favorable return to our investors and may negatively impact the price of our Class A common stock.

We are an "emerging growth company" and we cannot be certain if the reduced disclosure requirements applicable to emerging growth companies will make our Class A common stock less attractive to investors.

We are an "emerging growth company," as defined in the JOBS Act, and we intend to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not "emerging growth companies," including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in our periodic reports and proxy statements, exemptions from the requirements of holding a non-binding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved, and exemptions from complying with new or revised financial accounting standards until private companies are required to comply with the new or revised accounting standards. We may take advantage of these exemptions for so long as we are an "emerging growth company," which could be as long as five years following the IPO. We expect, however, that we will cease being an "emerging growth company" prior to such time. We cannot predict if investors will find our Class A common stock less attractive to the extent that we rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and the price of our common stock may be more volatile.

Delaware law and provisions in our amended and restated certificate of incorporation and amended and restated bylaws could make a merger, tender offer, or proxy contest difficult, thereby depressing the market price of our Class A common stock.

Our status as a Delaware corporation and the anti-takeover provisions of the Delaware General Corporation Law may discourage, delay, or prevent a change in control by prohibiting us from engaging in a business combination with an interested stockholder for a period of three years after the person becomes an interested stockholder, even if a change of control would be beneficial to our existing stockholders. In addition, our amended and restated

certificate of incorporation and amended and restated bylaws contain provisions that may make the acquisition of our company more difficult, including the following:

- our dual-class common stock structure, which provides Mr. Prince and Ms. Zatlyn with the ability to significantly influence the outcome of matters requiring stockholder approval, even if they own significantly less than a majority of the shares of our outstanding Class A common stock and Class B common stock;
- our Board of Directors is classified into three classes of directors with staggered three-year terms and directors are only able to be removed from office for cause;
- vacancies on our Board of Directors will be able to be filled only by our Board of Directors and not by stockholders;
- only the Chair of our Board of Directors, our Chief Executive Officer, or a majority of our entire Board of Directors are authorized to call a special meeting of stockholders;
- certain litigation against us can only be brought in Delaware;
- our amended and restated certificate of incorporation authorizes undesignated preferred stock, the terms of which may be established and shares of which may be issued, without the approval of the holders of Class A common stock;
- advance notice procedures apply for stockholders to nominate candidates for election as directors or to bring matters before an annual meeting of stockholders;
- our stockholders will only be able to take action at a meeting of stockholders and not by written consent; and
- any amendment of the above anti-takeover provisions in our amended and restated certificate of incorporation or amended and restated bylaws will require the approval of two-thirds of the combined vote of our then-outstanding shares of Class A common stock and Class B common stock.

These anti-takeover defenses could discourage, delay, or prevent a transaction involving a change in control of our company. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors of their choosing and to cause us to take other corporate actions they desire, any of which, under certain circumstances, could limit the opportunity for our stockholders to receive a premium for their shares of our capital stock, and could also affect the price that some investors are willing to pay for our Class A common stock.

Our amended and restated bylaws designate a state or federal court located within the State of Delaware as the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware is the exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, or other employees to us or our stockholders; (iii) any action arising pursuant to any provision of the Delaware General Corporation Law, our amended and restated certificate of incorporation or our amended and restated bylaws; or (iv) any other action asserting a claim that is governed by the internal affairs doctrine shall be the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware), in all cases subject to the court having jurisdiction over indispensable parties named as defendants. The provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Additionally, nothing in our amended and restated bylaws precludes stockholders that assert claims under the Securities Act from bringing such claims in state or federal court, subject to applicable law.

Any person or entity purchasing or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to this provision. This exclusive-forum provision may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or our directors, officers, or other employees, which may discourage lawsuits against us and our directors, officers, and other employees. If a court were to find the exclusive-forum provision in our amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving the dispute in other jurisdictions, which could harm our results of operations.

Our Class A common stock market price and trading volume could decline if equity or industry analysts do not publish research or publish inaccurate or unfavorable research about our business.

The trading market for our Class A common stock depends in part on the research and reports that equity or industry analysts publish about us or our business. The analysts' estimates are based upon their own opinions and are often different from our estimates or expectations. If one or more of the analysts who cover us downgrade our Class A common stock or publish inaccurate or unfavorable research about our business, the price of our securities would likely decline. If few securities analysts commence coverage of us, or if one or more of these analysts cease coverage of us or fail to publish reports on us regularly, demand for our securities could decrease, which might cause the price and trading volume of our Class A common stock to decline.

An active trading market for our Class A common stock may not be sustained.

Our Class A common stock is listed on the NYSE under the symbol "NET." However, we cannot assure you of the likelihood that an active trading market for our Class A common stock will be maintained, the liquidity of any trading market, your ability to sell your shares of our Class A common stock when desired, or the prices that you may obtain for your shares.

We do not intend to pay dividends for the foreseeable future.

We have never declared nor paid cash dividends on our capital stock. We currently intend to retain any future earnings to finance the operation and expansion of our business, and we do not expect to declare or pay any dividends in the foreseeable future. As a result, stockholders must rely on sales of their Class A common stock after price appreciation as the only way to realize any future gains on their investment.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our corporate headquarters is located in San Francisco, California, where we lease approximately 81,000 square feet. Of the total leased space in San Francisco, approximately 66,000 square feet is concentrated in our adjoining buildings located at 101 Townsend Street and 111 Townsend Street pursuant to lease agreements expiring in October 2022. In addition, we lease approximately 15,000 square feet at 634 Second Street pursuant to a lease agreement expiring in December 2027. We also maintain offices in multiple locations in the United States, including Austin, Texas; Champaign, Illinois; New York, New York; San Jose, California; and Washington, D.C., as well as multiple locations internationally, including Australia, China, Germany, Portugal, Singapore and the United Kingdom to support our global team.

We believe that our facilities are suitable to meet our current needs. We intend to expand our facilities or add new facilities as we add employees and enter new geographic markets, and we believe that suitable additional or alternative space will be available as needed to accommodate any such growth.

Item 3. Legal Proceedings

From time to time we are subject to legal proceedings and claims arising in the ordinary course of business. We are not presently a party to any legal proceeding that we believe is likely to have a material impact on our business, results of operations, or financial condition.

Future litigation may be necessary, among other things, to defend ourselves or our customers by determining the scope, enforceability, and validity of third-party proprietary rights or to establish our proprietary rights. The results of any litigation cannot be predicted with certainty, particularly in the areas of unsettled and evolving law in which we operate, and an unfavorable resolution in any legal proceedings could materially affect our future business, results

of operations, or financial condition. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors. For additional information, see "Risk Factors - Activities of our paying and free customers or the content of their websites and other Internet properties could subject us to liability" and "We are currently, and may be in the future, party to intellectual property rights claims and other litigation matters that, if resolved adversely, could have a material impact on our business, results of operations, or financial condition" and Note 7. Commitments and Contingencies - Legal Matters to the consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

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

Market Information for Our Class A Common Stock

Our Class A common stock has been listed on the New York Stock Exchange (NYSE) under the symbol "NET" since September 13, 2019. Prior to that date, there was no public trading market for our Class A common stock. There is no public trading market for our Class B common stock.

Holders of Record

As of February 21, 2020, we had 505 holders of record of our Class A and Class B common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees.

Dividend Policy

We have never declared nor paid any cash dividends on our capital stock. We currently intend to retain any future earnings and do not expect to pay any dividends in the foreseeable future. Any future determination to declare cash dividends will be made at the discretion of our Board of Directors, subject to applicable laws, and will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual restrictions, general business conditions, and other factors that our Board of Directors may deem relevant.

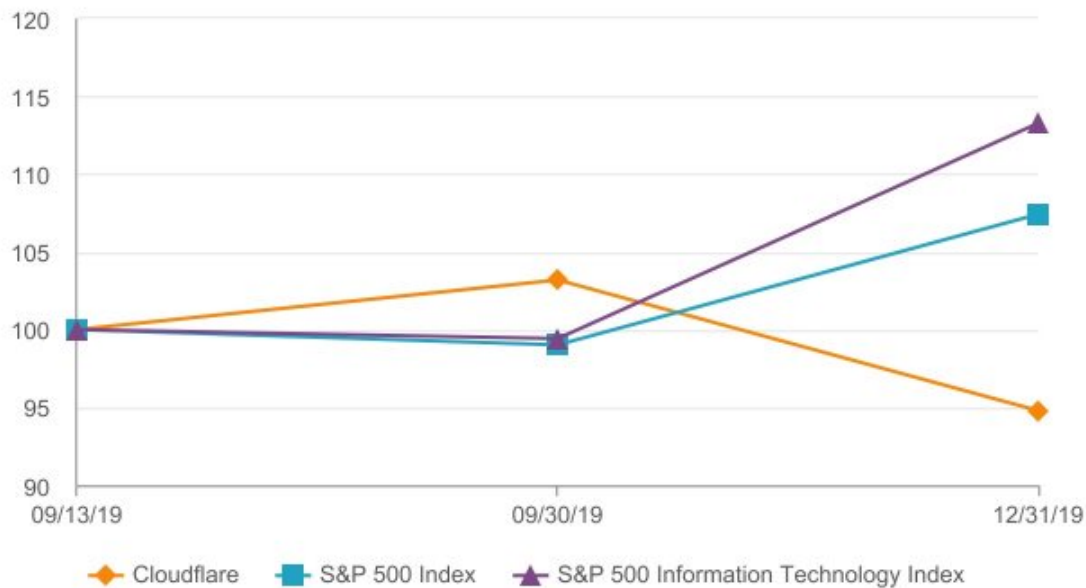
Securities Authorized for Issuance Under Equity Compensation Plans

The information required by this item with respect to our equity compensation plans is incorporated by reference to our Proxy Statement for the 2020 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2019.

Stock Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission, or the SEC, for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any of our filings under the Securities Act of 1933, as amended, or the Securities Act.

The following graph compares (i) the cumulative total stockholder return on our Class A common stock from September 13, 2019 (the date our Class A common stock commenced trading on the NYSE) through December 31, 2019 with (ii) the cumulative total return of the Standard & Poor's 500 Index and Standard & Poor's Information Technology Index over the same period, assuming the investment of \$100 in our Class A common stock and in each index on September 13, 2019 and the reinvestment of dividends. The graph uses the closing market price on September 13, 2019 of \$18.00 per share as the initial value of our common stock. The comparisons are based on historical data and are not indicative of, nor intended to forecast, future performance of our Class A common stock.



Company/Index	Base Period		
	9/13/2019	9/30/2019	12/31/2019
Cloudflare	\$ 100.00	\$ 103.17	\$ 94.78
S&P 500 Index	100.00	98.98	107.43
S&P 500 Information Technology Index	100.00	99.44	113.36

Unregistered Sales of Equity Securities

From January 1, 2019 through September 13, 2019 (the date of the filing of our registration statement on Form S-8), we granted to our directors, officers, employees, consultants and other service providers options to purchase an aggregate of 393,716 shares of our Class B common stock under our 2010 Equity Incentive Plan (our 2010 Plan) at exercise prices ranging from \$8.56 to \$9.97 per share.

From January 1, 2019 through September 13, 2019 (the date of the filing of our registration statement on Form S-8), we granted to our directors, officers, employees, consultants and other service providers restricted stock units for an aggregate of 6,465,154 shares of Class B common stock under our 2010 Plan.

From January 1, 2019 through September 13, 2019 (the date of the filing of our registration statement on Form S-8), we issued and sold to our employees, consultants, and other services providers an aggregate of 2,548,237 shares of Class B common stock upon the exercise of options issued under our 2010 Plan at exercises prices ranges from \$0.07 to \$9.97, for an aggregate exercise price of \$5,702,085 and an aggregate of zero shares of Class A common stock upon the exercise of options issued under our 2010 Plan.

On September 9, 2019, we entered into an Exchange Agreement with certain of our existing stockholders, pursuant to which we exchanged, for no consideration, an aggregate of 2,200,000 shares of Class B common stock for an equivalent number of newly issued shares of Class B common stock.

On September 19, 2019, we also issued an aggregate of 174,347 shares of Class B common stock to a warrant holder upon the exercise of an outstanding warrant to purchase an aggregate of 177,410 shares of Class B common stock pursuant to a net exercise mechanism under the warrant. The warrant had an exercise price of \$0.3382 per share.

None of the foregoing transactions involved any underwriters, underwriting discounts or commissions, or any public offering. We believe the offers, sales, and issuances of the above securities were exempt from registration under the Securities Act (or Regulation D or Regulation S promulgated thereunder) by virtue of Section 4(a)(2) of the Securities Act because the issuance of securities to the recipients did not involve a public offering, Section 3(a)(9) of the Securities Act because the issuance of securities involved an exchange with existing securityholders for no consideration, or in reliance on Rule 701 because the transactions were pursuant to compensatory benefit plans or contracts relating to compensation as provided under such rule. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about us. The sales of these securities were made without any general solicitation or advertising.

Issuer Purchases of Equity Securities

None.

Use of Proceeds from Initial Public Offering of Class A Common Stock

In September 2019, we closed our initial public offering in which we sold 40,250,000 shares of Class A common stock at a price to the public of \$15.00 per share, including shares sold in connection with the exercise of the underwriters' option to purchase additional shares. The offer and sale of all of the shares in the IPO were registered under the Securities Act pursuant to a registration statement on Form S-1 (File No. 333-233296), which was declared effective by the SEC on September 12, 2019. We raised aggregate net proceeds of \$565.0 million from the IPO, after deducting underwriting discounts and commissions and offering costs. There has been no material change in the planned use of proceeds from the IPO as described in our final prospectus filed with the SEC on September 13, 2019 pursuant to Rule 424(b)(4).

The managing underwriters of the IPO were Goldman Sachs & Co. LLC, Morgan Stanley & Co. LLC and J.P. Morgan Securities LLC. No payments were made by us to directors, officers, or persons owning ten percent or more of our common stock or to their associates, or to our affiliates, other than payments in the ordinary course of business to officers for salaries and to non-employee directors pursuant to our director compensation policy.

Item 6. Selected Financial and Other Data

The following selected consolidated financial and other data should be read in conjunction with the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. The selected consolidated statements of operations data presented below for the years ended December 31, 2019, 2018, and 2017 and the consolidated balance sheet data as of December 31, 2019 and 2018, are derived from our audited consolidated financial statements that are included elsewhere in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of our future results. The selected consolidated financial data in this section are not intended to replace the consolidated financial statements and are qualified in their entirety by the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K.

	Year Ended December 31,			
	2019	2018	2017	2016
	(in thousands, except per share data)			
Consolidated Statements of Operations Data:				
Revenue	\$ 287,022	\$ 192,674	\$ 134,915	\$ 84,791
Cost of revenue ⁽¹⁾	63,423	43,537	28,788	23,962
Gross profit	223,599	149,137	106,127	60,829
Operating expenses:				
Sales and marketing ⁽¹⁾	159,298	94,394	61,899	40,122
Research and development ⁽¹⁾	90,669	54,463	33,650	23,663
General and administrative ⁽¹⁾	81,578	85,179	20,308	14,073
Total operating expenses	331,545	234,036	115,857	77,858
Loss from operations	(107,946)	(84,899)	(9,730)	(17,029)
Non-operating income (expense):				
Interest income	5,787	1,895	762	626
Interest expense	(1,112)	(992)	(862)	(654)
Other income (expense), net	(1,442)	(2,091)	115	(208)
Total non-operating income (expense), net	3,233	(1,188)	15	(236)
Loss before income taxes	(104,713)	(86,087)	(9,715)	(17,265)
Provision for income taxes	1,115	1,077	1,033	69
Net loss	\$ (105,828)	\$ (87,164)	\$ (10,748)	\$ (17,334)
Net loss per share attributable to common stockholders, basic and diluted ⁽²⁾	\$ (0.72)	\$ (1.08)	\$ (0.14)	\$ (0.23)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted ⁽²⁾	146,306	80,981	77,147	75,721

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

(2) Refer to Note 11 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for an explanation of the method used to calculate our basic and diluted net loss per share attributable to common stockholders and the weighted-average number of shares used in the computation of per share amounts.

	Year Ended December 31,			
	2019	2018	2017	2016
	(in thousands)			
Cost of revenue	\$ 716	\$ 119	\$ 47	\$ 64
Sales and marketing	8,709	979	488	381
Research and development	13,037	1,532	969	1,043
General and administrative	14,165	24,717	1,251	4,212
Total stock-based compensation expense	\$ 36,627	\$ 27,347	\$ 2,755	\$ 5,700

	December 31,		
	2019	2018	2017
	(in thousands)		
Consolidated Balance Sheet Data			
Cash, cash equivalents, and available-for-sale securities	\$ 636,948	\$ 160,657	\$ 73,407
Working capital ⁽¹⁾	\$ 605,989	\$ 135,358	\$ 64,861
Property and equipment, net	\$ 101,466	\$ 73,210	\$ 51,423
Total assets	\$ 830,824	\$ 298,380	\$ 163,143
Deferred revenue, current and noncurrent	\$ 31,647	\$ 17,037	\$ 12,134
Redeemable convertible preferred stock	\$ —	\$ 331,521	\$ 181,546
Accumulated deficit	\$ (301,706)	\$ (195,878)	\$ (108,714)
Total stockholders' (deficit) equity	\$ 725,828	\$ (113,505)	\$ (59,834)

(1) Working capital is defined as current assets less current liabilities.

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. In addition to historical financial information, the following discussion contains forward-looking statements that are based upon current plans, expectations, and beliefs that involve risks and uncertainties. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of various factors, including those set forth under the section titled "Risk Factors" included elsewhere in this Annual Report on Form 10-K. Our fiscal year end is December 31.

Overview

Cloudflare's mission is to help build a better Internet. We have built a global cloud platform that delivers a broad range of network services to businesses of all sizes and in all geographies—making them more secure, enhancing the performance of their business-critical applications, and eliminating the cost and complexity of managing individual network hardware. Our platform serves as a scalable, easy-to-use, unified control plane to deliver security, performance, and reliability across their on-premise, hybrid, cloud, and software-as-a-service (SaaS) applications.

Our Business Model

Our business model benefits from our ability to serve the needs of all customers ranging from individual developers to the largest enterprises, in a cost-effective manner. Our products are easy to deploy and allow for rapid and efficient onboarding of new customers and expansion of our relationships with customers over time. Given the large customer base we have and the immense amount of Internet traffic that we manage, we are able to negotiate mutually beneficial agreements with Internet Service Providers (ISPs) that allow us to place our equipment directly in their data centers, which dramatically drives down our bandwidth and co-location expenses. This symbiotic relationship that we have with ISPs and the efficiency of our serverless network architecture allows us to introduce new products on our platform at low marginal cost.

We generate revenue primarily from sales to our customers of subscriptions to access our platform. We offer a variety of plans to our free and paying customers depending on their required features and functionality.

- **Pay-As-You-Go Customers.** For our pay-as-you-go customers (and which we previously referred to as self-serve customers), we offer Pro and Business subscription plans through our website per registered domain, and it is common for customers to purchase subscriptions to cover multiple Internet properties (e.g., domains, websites, application programming interfaces (APIs), and mobile applications). Our Pro plan provides basic functionality to improve the security, performance, and reliability of applications, such as enhanced web application firewall and image and mobile optimization. Our Business plan includes additional functionality often required by larger organizations, including service level agreements of up to 100% uptime, dynamic content acceleration, and enhanced customer support. Our implementation period for pay-as-you-go customers is extremely short with most customers implementing our services within a matter of minutes. While our Pro and Business plans offer significant value to customers, customers can subscribe to add-on products and platform functionality we offer to meet their more advanced needs. Our pay-as-you-go customers typically pay with a credit card on a monthly basis.
- **Contracted Customers.** Our contracted customers, which consist of customers that enter into contracts for our Enterprise subscription plan (and which we previously referred to as enterprise customers), have contracts that range from one to three years and are typically billed on a monthly basis. Our contracted customer sales cycle typically lasts less than one quarter. Our agreements with contracted customers are tailored and priced to meet their varying needs and requirements. Enterprise subscription plan agreements for our contracted customers generally include a base subscription and a smaller portion based on usage.

Key elements of our business model include:

- **Free customer base.** Free customers are an important part of our business. These customers, like our pay-as-you-go customers, sign up for our service through our website and are typically individual developers, early stage startups, hobbyists, and other users. Our free customers create scale, serve as

efficient brand marketing, and help us attract developers, customers, and potential employees. These free customers expose us to diverse traffic, threats, and problems, often allowing us to see potential security, performance, and reliability issues at the earliest stage. This knowledge allows us to improve our products and deliver more effective solutions to our paid customers. In addition, the added scale and diversity of this traffic makes us valuable to a diverse set of global ISPs, improving the breadth and economic terms of our interconnections, bandwidth costs, and co-location expenses. Finally, the enthusiastic engagement of our free customer base represents a "virtual quality assurance" function that allows us to maintain a high rate of product innovation, while ensuring our products are extensively tested in real world environments before they are deployed to enterprise customers.

- **Significant investment in ongoing product development.** We invest significantly in research and development. Our focus on research and development allows us to continually enhance the capabilities and functionality of our global cloud platform with new products that are innovative and powerful and can be quickly adopted by our customers and helps us grow our free and paying customer base, which allows us to serve a greater portion of the world's Internet traffic. That in turn provides us with greater knowledge and insight into the challenges that Internet users face every day.
- **Investments in our network for growth.** We believe that the size, sophistication, and distributed nature of our network provide us with a significant competitive advantage. We intend to continue to make substantial investments in network infrastructure to support the growth of our business. As we invest in our network, we believe the service that we can provide our customers and the insight and knowledge that we can gain will continue to grow.
- **Efficient go-to-market model.** We have built an efficient go-to market model that reflects the flexibility and ease of use our platform offers to our customers around the world. This has enabled us to acquire new customers as well as to expand within our existing customer base in a rapid, cost-effective manner. In particular, we have invested heavily in our contracted customer sales efforts.
 - *New customer acquisition.* We believe that any person or business that relies on the Internet to deliver products, services or content can be a Cloudflare customer. As such, we are focused on driving an increased number of customers on our platform to support our long-term growth. Through our pay-as-you-go offering, a customer can subscribe to one of our many plans and begin using our platform within minutes, with minimal technical skill and no professional services. This has allowed us to acquire a large portion of paying customers very rapidly and at significantly lower customer acquisition costs. Additionally, we continue to invest to build our direct sales force and improve the sophistication of our sales operations.
 - *Expansion of our existing customers.* We believe that our platform enables a large opportunity for growth within our existing customer base given the breadth of products we offer on our platform. Our relationships with customers often start with servicing a portion of their overall network needs and expand over time as they realize the significant value we deliver. Once a customer has adopted one product on our platform it can easily add additional products with a single click. As we add more products and functionality to our platform, we see opportunities to drive upsell as customers seek to consolidate onto one platform to meet all of their security, performance, and reliability network requirements.
 - *International reach.* Our global network, with a presence in 200 cities in over 90 countries, has helped to foster our strong international growth. International markets represented at least 50% of our revenue in the years ended December 31, 2019, 2018, and 2017, and we intend to continue to invest in our international growth as a strategy to expand our customer base around the world.

Initial Public Offering

In September 2019, we completed an Initial Public Offering (IPO) in which we issued and sold 40,250,000 shares of Class A common stock, which included 5,250,000 shares sold pursuant to the exercise by the underwriters of an option to purchase additional shares, at the public offering price of \$15.00 per share. We received net proceeds of \$570.5 million from sales of our shares in the IPO, after deducting underwriting discounts and commissions, but before deducting offering costs of \$5.5 million. The net proceeds included proceeds of \$74.4 million, net of underwriters' discounts and commissions, from the exercise of the underwriters' option to purchase an additional 5,250,000 shares of our Class A common stock. Upon completion of the IPO, 31,381,152 shares of redeemable

convertible preferred stock were automatically converted into an equal number of shares of Class A common stock, 134,276,690 shares of redeemable convertible preferred stock were automatically converted into an equal number of shares of Class B common stock, outstanding warrants to purchase shares of redeemable convertible preferred stock were automatically converted into outstanding warrants to purchase shares of Class B common stock, and 15,198,587 shares of Class B common stock held by former employees were automatically converted into an equal number of shares of Class A common stock.

Opportunities, Challenges, and Risks

We believe that the growth of our business and our future success are dependent upon many factors, including growing our customer base, expanding our relationships with existing paid customers, developing and successfully launching new products, expanding into additional market segments, expanding our base of free customers, and developing and maintaining favorable peering and co-location relationships. Each of these factors presents significant opportunities for us, but also poses material challenges and risks that we must successfully address in order to grow our business and improve our operating results. We expect that addressing these challenges and risks will increase our operating expenses significantly over the next several years. The timing of our future profitability, if we achieve profitability at all, will depend upon many variables, including the success of our growth strategies and the timing and size of investments and expenditures that we choose to undertake, as well as market growth and other factors that are not within our control. In addition, we must comply with complex, uncertain, and evolving laws, rules, and regulatory requirements across federal, state, and international jurisdictions. If we fail to successfully address these challenges, risks, and variables, our business, operating results, financial condition, and prospects may be adversely affected. Refer to Part I, Item 1A “Risk Factors” of this Annual Report on Form 10-K for additional information on the challenges and risks we face.

Key Business Metrics and Non-GAAP Financial Measures

We review a number of operating and financial metrics, including the following key metrics and non-GAAP financial measures to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans, and make strategic decisions.

	Year Ended December 31,		
	2019	2018	2017
	(dollars in thousands)		
Gross profit	\$ 223,599	\$ 149,137	\$ 106,127
Gross margin	78 %	77 %	79 %
Loss from operations	\$ (107,946)	\$ (84,899)	\$ (9,730)
Non-GAAP loss from operations	\$ (71,194)	\$ (57,035)	\$ (6,513)
Operating margin	(38) %	(44) %	(7) %
Non-GAAP operating margin	(25) %	(30) %	(5) %
Net cash used in operating activities	\$ (38,917)	\$ (43,281)	\$ 3,167
Net cash used in investing activities	\$ (417,641)	\$ (120,795)	\$ 9,544
Net cash provided by financing activities	\$ 570,768	\$ 168,621	\$ (149)
Free cash flow	\$ (96,196)	\$ (78,120)	\$ (19,808)
Net cash provided by (used in) operating activities (as a percentage of revenue)	(14) %	(22) %	2 %
Free cash flow margin	(34) %	(40) %	(15) %
Paying customers	82,882	67,899	49,309
Paying customers (> \$100,000 Annualized Billings)	550	313	184

Non-GAAP Financial Measures

In addition to our results determined in accordance with generally accepted accounting principles in the United States (U.S. GAAP), we believe the following non-GAAP measures are useful in evaluating our operating performance. We use the following non-GAAP financial information to evaluate our ongoing operations and for internal planning and forecasting purposes. We believe that non-GAAP financial information, when taken collectively, may be helpful to investors because it provides consistency and comparability with past financial performance. However, non-GAAP financial information is presented for supplemental informational purposes only, has limitations as an analytical tool and should not be considered in isolation or as a substitute for financial information presented in accordance with U.S. GAAP. In particular, free cash flow is not a substitute for cash provided by (used in) operating activities. Additionally, the utility of free cash flow as a measure of our liquidity is further limited as it does not represent the total increase or decrease in our cash balance for a given period. In addition, other companies, including companies in our industry, may calculate similarly-titled non-GAAP measures differently or may use other measures to evaluate their performance, all of which could reduce the usefulness of our non-GAAP financial measures as tools for comparison. A reconciliation is provided below for each non-GAAP financial measure to the most directly comparable financial measure stated in accordance with U.S. GAAP. Investors are encouraged to review the related U.S. GAAP financial measures and the reconciliation of these non-GAAP financial measures to their most directly comparable U.S. GAAP financial measures, and not to rely on any single financial measure to evaluate our business.

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

We define non-GAAP loss from operations and non-GAAP operating margin as U.S. GAAP loss from operations and U.S. GAAP operating margin, respectively, excluding stock-based compensation expense and amortization of acquired intangible assets. We exclude stock-based compensation expense, which is a non-cash expense, from certain of our non-GAAP financial measures because we believe that excluding this item provides meaningful supplemental information regarding operational performance. We exclude amortization of intangible assets, which is a non-cash expense, related to business combinations from certain of our non-GAAP financial measures because such expenses are related to business combinations and have no direct correlation to the operation of our business.

	Year Ended December 31,		
	2019	2018	2017
	(dollars in thousands)		
Loss from operations	\$ (107,946)	\$ (84,899)	\$ (9,730)
Add:			
Stock-based compensation expense	36,627	27,347	2,755
Amortization of acquired intangible assets	125	517	462
Non-GAAP loss from operations	<u>\$ (71,194)</u>	<u>\$ (57,035)</u>	<u>\$ (6,513)</u>
Operating margin	(38)%	(44)%	(7)%
Non-GAAP operating margin (non-GAAP loss from operations as a percentage of revenue)	(25)%	(30)%	(5)%

Free Cash Flow and Free Cash Flow Margin

Free cash flow is a non-GAAP financial measure that we calculate as net cash provided by (used in) operating activities less cash used for purchases of property and equipment and capitalized internal-use software. Free cash flow margin is calculated as free cash flow divided by revenue. We believe that free cash flow and free cash flow margin are useful indicators of liquidity that provide information to management and investors about the amount of cash generated from our operations that, after the investments in property and equipment and capitalized internal-use software, can be used for strategic initiatives, including investing in our business, and strengthening our financial position. We believe that historical and future trends in free cash flow and free cash flow margin, even if negative, provide useful information about the amount of cash generated (or consumed) by our operating activities that is available (or not available) to be used for strategic initiatives. For example, if free cash flow is negative, we may need to access cash reserves or other sources of capital to invest in strategic initiatives. One limitation of free cash flow and free cash flow margin is that they do not reflect our future contractual commitments. Additionally, free cash flow does not represent the total increase or decrease in our cash balance for a given period.

	Year Ended December 31,		
	2019	2018	2017
	(dollars in thousands)		
Net cash provided by (used in) operating activities	\$ (38,917)	\$ (43,281)	\$ 3,167
Less: Purchases of property and equipment	(43,289)	(25,466)	(19,031)
Less: Capitalized internal-use software	(13,990)	(9,373)	(3,944)
Free cash flow	<u>\$ (96,196)</u>	<u>\$ (78,120)</u>	<u>\$ (19,808)</u>
Net cash used in investing activities	\$ (417,641)	\$ (120,795)	\$ 9,544
Net cash provided by financing activities	\$ 570,768	\$ 168,621	\$ (149)
Net cash used in operating activities (as a percentage of revenue)	(14)%	(22)%	2%
Less: Purchases of property and equipment (as a percentage of revenue)	(15)%	(13)%	(14)%
Less: Capitalized internal-use software (as a percentage of revenue)	(5)%	(5)%	(3)%
Free cash flow margin	<u>(34)%</u>	<u>(40)%</u>	<u>(15)%</u>

Key Business Metrics

Paying Customers

We believe our ability to grow the number of paying customers on our platform provides a key indicator of the growth of our business and our future business opportunities. We define a paying customer at the end of any period as a person or entity who has been billed for our services in the last month of the period, excluding (i) Baidu, (ii) other customers that were not acquired through ordinary sales channels, and (iii) customers using our consumer products, such as 1.1.1.1 and Warp. An entity is defined as a company, a government institution, a non-profit

organization, or a distinct business unit of a large company that has an active contract with us or one of our partners. The number of paying customers was 82,882, 67,899, and 49,309 as of December 31, 2019, 2018, and 2017, respectively.

Paying Customers (> \$100,000 Annualized Billings)

While we continue to grow customers across all sizes, over time, our large customers have contributed an increasing share of our revenue. We view the number of customers with Annualized Billings greater than \$100,000 as indicative of our penetration within large enterprise accounts. To measure Annualized Billings, we take the billings for each customer in the final month of a period and multiply that amount by 12. Our Annualized Billings calculation excludes (i) our strategic agreement with Baidu, (ii) other agreements that were not entered into through our ordinary sales channels, and (iii) customers using our consumer products, such as 1.1.1.1 and Warp, and that together represent an insignificant amount of our revenue. We include both month-to-month subscriptions and longer-term agreements with our contracted customers in the calculation of Annualized Billings. Our Annualized Billings metric also includes any usage charges by a customer during a period, which represent a small portion of our total billings and may not be recurring. As a result, Annualized Billings may be higher than actual billings over the course of the year. For example, if we signed a new customer that was billed for \$200 in December, that customer would account for \$2,400 of Annualized Billings for that year. The number of paying customers with Annualized Billings greater than \$100,000 was 550, 313, and 184 as of December 31, 2019, 2018, and 2017, respectively. We believe this trend will continue as customers increasingly adopt cloud technology and we are able to compete with an increasing share of our customers' legacy hardware solutions by adding new capabilities to our global cloud platform.

Dollar-Based Net Retention Rate

Our ability to maintain long-term revenue growth and achieve profitability is dependent on our ability to retain and grow revenue generated from our existing paid customers. We believe that we will achieve these objectives by continuing to focus on customer loyalty and adding additional products and functionality to our platform. Our dollar-based net retention rate is a key way we measure our performance in these areas. Dollar-based net retention measures our ability to retain and expand recurring revenue from existing customers. To calculate dollar-based net retention for a period, we compare the Annualized Billings from paid customers 12 months prior to the Annualized Billings from the same set of customers in the last month of the current period. Our dollar-based net retention includes any expansion and is net of contraction and attrition, but excludes Annualized Billings from new customers in the current period. Our dollar-based net retention excludes the benefit of free customers that upgrade to a paid subscription between the prior and current periods, even though this is an important source of incremental growth. We believe this provides a more meaningful representation of our ability to add incremental business from existing paid customers as they renew and expand their contracts. Our dollar-based net retention rates for the trailing twelve months ended December 31, 2019, 2018, and 2017 were 112%, 111%, and 113%, respectively.

Components of Our Results of Operations

Revenue

We generate revenue primarily from sales to our customers of subscriptions to access our platform, together with related support services. Arrangements with customers generally do not provide the customer with the right to take possession at any time of our software operating our global cloud platform. Instead, customers are granted continuous access to our platform and products over the contractual period. A time-elapsed output method is used to measure progress because we transfer control evenly over the contractual period. Accordingly, the fixed consideration related to subscription and support revenue is generally recognized on a straight-line basis over the contract term beginning on the date that the service is made available to the customer. Usage-based consideration is primarily related to fees charged for our customer's use of excess bandwidth when accessing our platform in a given period and is recognized as revenue in the period in which the usage occurs.

The typical subscription and support term for our contracted customers is one year and subscription and support term lengths range from one to three years. Most of our contracts with contracted customers are non-cancelable over the contractual term. Customers typically have the right to terminate their contracts for cause if we fail to perform in accordance with the contractual terms. For our pay-as-you-go customers, subscription and support terms are typically monthly.

Cost of Revenue

Cost of revenue consists primarily of expenses that are directly related to providing our service to our paying customers. These expenses include expenses related to operating in co-location facilities, network and bandwidth costs, depreciation of our equipment located in co-location facilities, certificate authority services costs for paying customers, related overhead costs, the amortization of our capitalized internal-use software, and the amortization of acquired developed technologies. Cost of revenue also includes employee-related costs, including salaries, bonuses, benefits, and stock-based compensation for employees whose primary responsibilities relate to supporting our paying customers and delivering paid customer support. Other costs included in cost of revenue include credit card fees related to processing customer transactions and allocated overhead costs.

As our customers expand and increase the use of our global cloud platform driven by additional applications and connected devices, we expect that our cost of revenue will increase due to higher network and bandwidth costs and expenses related to operating in additional co-location facilities. However, we expect to continue to benefit from economies of scale as our customers increase the use of our global cloud platform. We intend to continue to invest additional resources in our global cloud platform and our customer support organizations as we grow our business. The level and timing of investment in these areas could affect our cost of revenue in the future.

Gross Profit and Gross Margin

Gross profit is revenue less cost of revenue and gross margin is gross profit as a percentage of revenue. Our gross profit and gross margin have and are expected to continue to fluctuate from period to period due to the timing of acquisition of new customers and our renewals with existing customers, expenses related to operating in co-location facilities and network and bandwidth costs to operate and expand our global cloud platform, and amortization of costs associated with capitalized internal-use software. We expect our gross profit to increase in absolute dollars and our gross margin to remain consistent over the long term, although our gross margin could fluctuate from period to period depending on the interplay of all of these factors.

Operating Expenses

Sales and Marketing

Sales and marketing expenses consist primarily of employee-related costs, including salaries, benefits, and stock-based compensation expense, sales commissions that are recognized as expenses over the period of benefit, marketing programs, certificate authority services costs for free customers, travel-related expenses, bandwidth and co-location costs for free customers, and allocated overhead costs. Sales commissions earned by our sales force and the associated payroll taxes that are direct and incremental to the acquisition of channel partner and direct customer contracts are deferred and amortized over an estimated period of benefit of three years for the initial acquisition of a contract and over the contractual term of the renewals for renewal contracts. We plan to continue to invest in sales and marketing to grow our customer base and increase our brand awareness, including marketing efforts to continue to drive our pay-as-you-go business model. As a result, we expect our sales and marketing expenses to increase in absolute dollars for the foreseeable future. We also incurred a significant increase in sales and marketing expenses from the stock-based compensation expense related to RSUs that have both service-based and performance vesting conditions. However, we expect our sales and marketing expenses to decrease as a percentage of our revenue over the long term, although our sales and marketing expenses may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

Research and Development

Research and development costs consist primarily of employee-related costs, including salaries, bonuses, benefits, and stock-based compensation expense, consulting costs, depreciation of equipment used in research and development, and allocated overhead costs. Research and development costs support our efforts to add new features to our existing offerings and to ensure the security, performance, and reliability of our global cloud platform. We expect our research and development expenses to increase in absolute dollars for the foreseeable future as we continue to invest in research and development efforts to enhance the functionality of our global cloud platform. We also incurred a significant increase in research and development expenses from the stock-based compensation expense related to RSUs that have both service-based and performance vesting conditions. However, we expect our research and development expenses to decrease as a percentage of our revenue over the long term, although

our research and development expenses may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

General and Administrative

General and administrative expenses consist primarily of employee-related costs, including salaries, bonuses, benefits, and stock-based compensation expense for our finance, legal, human resources, and other administrative personnel, professional fees for external legal services, accounting, and other consulting services, bad debt expense, and allocated overhead costs. We expect our general and administrative expenses to continue to increase in absolute dollars for the foreseeable future to support our growth as well as due to additional costs associated with legal, accounting, compliance, insurance, investor relations, and other costs as a result of operating as a public company. We also incurred a significant increase in general and administrative expenses from the stock-based compensation expense related to RSUs that have both service-based and performance vesting conditions. However, we expect our general and administrative expenses to decrease as a percentage of our revenue over the long term, although our general and administrative expenses may fluctuate as a percentage of our revenue from period to period due to the timing and extent of these expenses.

Non-Operating Income (Expense)

Interest Income

Interest income consists primarily of interest earned on our cash, cash equivalents, and our investment holdings.

Interest Expense

Interest expense consists primarily of interest related to our built-to-suit lease financing obligation and interest on our notes payable.

Other Income (Expense), Net

Other income (expense), net consists primarily of expenses resulting from the revaluation of our redeemable convertible preferred stock warrant liability and foreign currency transaction gains and losses.

Provision for Income Taxes

Provision for income taxes consists primarily of income taxes in certain foreign jurisdictions in which we conduct business, as well as state income taxes in the United States. We maintain a full valuation allowance on our federal and state deferred tax assets as we have concluded that it is more likely than not that the deferred tax assets will not be realized.

Results of Operations

The following tables set forth our consolidated results of operations for the periods presented in dollars and as a percentage of our revenue for those periods:

	Year Ended December 31,		
	2019	2018	2017
	(dollars in thousands)		
Revenue	\$ 287,022	\$ 192,674	\$ 134,915
Cost of revenue ⁽¹⁾	63,423	43,537	28,788
Gross profit	223,599	149,137	106,127
Operating expenses:			
Sales and marketing ⁽¹⁾	159,298	94,394	61,899
Research and development ⁽¹⁾	90,669	54,463	33,650
General and administrative ⁽¹⁾	81,578	85,179	20,308
Total operating expenses	331,545	234,036	115,857
Loss from operations	(107,946)	(84,899)	(9,730)
Non-operating income (expense):			
Interest income	5,787	1,895	762
Interest expense	(1,112)	(992)	(862)
Other income (expense), net	(1,442)	(2,091)	115
Total non-operating income (expense), net	3,233	(1,188)	15
Loss before income taxes	(104,713)	(86,087)	(9,715)
Provision for income taxes	1,115	1,077	1,033
Net loss	\$ (105,828)	\$ (87,164)	\$ (10,748)

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

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Cost of revenue	\$ 716	\$ 119	\$ 47
Sales and marketing	8,709	979	488
Research and development	13,037	1,532	969
General and administrative	14,165	24,717	1,251
Total stock-based compensation expense	\$ 36,627	\$ 27,347	\$ 2,755

We have granted qualified event options (QE Options) and qualified event restricted stock units (QE RSUs) to employees and contractors which vest on the satisfaction of both a service-based condition and a performance condition. For QE Options, the performance condition was deemed satisfied upon our Class A common stock being listed on a public exchange. For QE Options, the service-based condition is satisfied by rendering service from the date of grant through the qualifying event, as well as a four-year vesting period commencing with the qualifying event. For QE RSUs, the performance condition was deemed satisfied upon the effective date of our registration statement on Form S-1 filed with the SEC in connection with the IPO. The QE RSUs have a service-based vesting condition satisfied over a four-year vesting period. The listing of equity securities event and effectiveness of a registration statement event are not deemed probable until consummated. In connection with our IPO, we recognized \$21.0 million of cumulative stock-based compensation expense for the QE Options for the service period rendered from the date of grant through the equity securities listing date and for the QE RSUs that vested in connection with the effective date of our registration statement on Form S-1 and began recording the remaining unrecognized stock-based compensation expense over the remainder of the requisite service period.

We incurred a \$23.3 million stock-based compensation expense charge related to a secondary sale of our common stock in September 2018.

	Year Ended December 31,		
	2019	2018	2017
Percentage of Revenue Data:			
Revenue	100 %	100 %	100 %
Cost of revenue	22	23	21
Gross margin	78	77	79
Operating expenses:			
Sales and marketing	56	49	46
Research and development	32	28	25
General and administrative	28	44	15
Total operating expenses	116	121	86
Loss from operations	(38)	(44)	(7)
Non-operating income (expense):			
Interest income	2	1	1
Interest expense	—	(1)	(1)
Other income (expense), net	(1)	(1)	—
Total non-operating income (expense), net	1	(1)	—
Loss before income taxes	(37)	(45)	(7)
Provision for income taxes	—	1	1
Net loss	(37)%	(46)%	(8)%

Comparison of the Years Ended December 31, 2019 and 2018

Revenue

	Year Ended December 31,		Change	
	2019	2018	\$	%
(dollars in thousands)				
Revenue	\$ 287,022	\$ 192,674	\$ 94,348	49 %

Revenue increased by \$94.3 million, or 49%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. Of this increase, 38% was due to sales to new customers, and the remaining increase was due to increased sales to existing customers.

Cost of Revenue and Gross Margin

	Year Ended December 31,		Change	
	2019	2018	\$	%
(dollars in thousands)				
Cost of revenue	\$ 63,423	\$ 43,537	\$ 19,886	46 %
Gross margin	78 %	77 %		

Cost of revenue increased by \$19.9 million, or 46%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. The increase in cost of revenue was primarily due to an increase of \$7.5 million in expenses related to operating in co-location facilities and network and bandwidth costs for operating our global cloud platform for our expanded customer base as well as increased capacity to support our growth, an increase of

\$3.5 million related to the amortization of capitalized internal-use software costs, an increase of \$3.3 million in depreciation expense related to purchases of equipment located in co-location facilities, and an increase of \$3.2 million in employee-related costs due to a 37% increase in headcount in our customer support and technical operations organizations. The remainder of the increase was primarily attributable to an increase of \$0.9 million in payment processing fees and third-party technology services.

Gross margin did not significantly fluctuate during the year ended December 31, 2019 as compared to the year ended December 31, 2018.

Operating Expenses

Sales and Marketing

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
Sales and marketing	\$ 159,298	\$ 94,394	\$ 64,904	69 %

Sales and marketing expenses increased by \$64.9 million, or 69%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. The increase was primarily driven by \$39.3 million in increased employee-related costs due to a 58% increase in headcount in our sales and marketing organization from December 31, 2018 to December 31, 2019, including an increase of \$7.7 million in stock-based compensation expense primarily due to the recognition of expense related to RSUs with a performance condition that was satisfied upon the effective date of our registration statement on Form S-1 filed with the SEC in connection with the IPO. The remainder of the increase was due primarily to increased expenses of \$9.6 million in marketing programs due to investments in brand awareness advertising, third-party industry events, and digital performance marketing, aimed at driving overall revenue growth, \$7.3 million related to allocated overhead costs, \$4.5 million related to increased travel-related costs and third-party technology services, and an increase of \$3.5 million in co-location and bandwidth expenses for free customers.

Research and Development

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
Research and development	\$ 90,669	\$ 54,463	\$ 36,206	66 %

Research and development expenses increased by \$36.2 million, or 66%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. The increase was primarily driven by \$34.8 million in increased employee-related costs due to a 33% increase in headcount in our research and development organization from December 31, 2018 to December 31, 2019, including an increase of \$13.3 million in stock-based compensation expense primarily due to the recognition of expense related to RSUs with a performance condition that was satisfied upon the effective date of our registration statement on Form S-1 filed with the SEC in connection with the IPO. The remainder of the increase was due to \$5.0 million of increased allocated overhead costs primarily related to rent and office-related expenses due to expansion of office space, and \$2.4 million of increased travel-related costs and consulting expenses. These increases were partially offset by decreased expenses of \$6.4 million as a result of increased capitalized internal-use software development costs.

General and Administrative

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
General and administrative	\$ 81,578	\$ 85,179	\$ (3,601)	(4) %

General and administrative expenses decreased by \$3.6 million, or 4%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. The decrease was primarily driven by \$8.1 million of decreased professional fees for third-party accounting, consulting, and legal services, \$5.6 million of decreased allocated overhead costs, and \$0.8 million in decreased employee-related costs. The decrease in employee-related costs primarily consisted of \$10.6 million in decreased stock-based compensation expense related to the secondary stock sales in 2018 described in Note 13 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K, partially offset by a 56% increase in headcount in our general and administrative organization from December 31, 2018 to December 31, 2019, as well as increased stock-based compensation expense related to QE options and QE RSUs with performance conditions that were satisfied upon our Class A common stock being listed on a public exchange and the effective date of our registration statement on Form S-1 filed with the SEC in connection with the IPO. These decreases were partially offset by \$3.1 million of increased depreciation expense, \$2.8 million of increased expenses for insurance, fees, and taxes, \$1.7 million of increased third-party technology services costs, \$1.7 million of increased company-wide event and travel-related costs, and \$1.4 million of bad debt expense.

Non-Operating Income (Expense)

Interest Income

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
Interest income	\$ 5,787	\$ 1,895	\$ 3,892	205 %

Interest income increased by \$3.9 million, or 205%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. The increase was primarily driven by a higher invested balance in cash and cash equivalents and available-for-sale securities as a result of the IPO proceeds.

Interest Expense

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
Interest expense	\$ (1,112)	\$ (992)	\$ (120)	12 %

Interest expense did not significantly fluctuate during the year ended December 31, 2019 as compared to the year ended December 31, 2018.

Other Expense, net

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
Other expense, net	\$ (1,442)	\$ (2,091)	\$ 649	(31) %

Other expense, net decreased by \$0.6 million, or 31%, for the year ended December 31, 2019 compared to the year ended December 31, 2018. The decrease was primarily driven by an increase of \$1.0 million in rental income from sublease activities. This decrease was partially offset by increased expense of \$0.3 million as a result of the increased fair value of our redeemable convertible preferred stock warrant liability and fluctuations in foreign currency transaction gains and losses.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2019	2018	\$	%
	(dollars in thousands)			
Provision for income taxes	\$ 1,115	\$ 1,077	\$ 38	4 %

The provision for income taxes did not significantly fluctuate during the year ended December 31, 2019 as compared to the year ended December 31, 2018.

Comparison of the Years Ended December 31, 2018 and 2017**Revenue**

	Year Ended December 31,		Change	
	2018	2017	\$	%
	(dollars in thousands)			
Revenue	\$ 192,674	\$ 134,915	\$ 57,759	43 %

Revenue increased by \$57.8 million, or 43%, for the year ended December 31, 2018 compared to the year ended December 31, 2017. Of this increase, 42% was due to increased sales to existing customers, and the remaining increase was due to sales to new customers.

Cost of Revenue and Gross Margin

	Year Ended December 31,		Change	
	2018	2017	\$	%
	(dollars in thousands)			
Cost of revenue	\$ 43,537	\$ 28,788	\$ 14,749	51 %
Gross margin	77 %	79 %		

Cost of revenue increased by \$14.7 million, or 51%, for the year ended December 31, 2018 compared to the year ended December 31, 2017. The increase in cost of revenue was primarily due to an increase of \$6.4 million in expenses related to operating in co-location facilities and network and bandwidth costs for operating our global cloud platform for our expanded customer base as well as increased capacity to support our growth, and an increase of \$2.5 million in depreciation expense related to purchases of equipment located in co-location facilities. The remainder of the increase was primarily attributable to an increase of \$2.3 million related to the amortization of capitalized internal-use software costs, an increase of \$1.9 million in employee-related costs due to a 60% increase in headcount in our customer support and technical operations organizations, and an increase of \$1.1 million related to third-party technology services and payment processing fees.

Gross margin decreased to 77% from 79% during the year ended December 31, 2018 compared to the year ended December 31, 2017, respectively. The decrease in gross margin was driven by higher network and bandwidth costs and expenses related to operating in additional co-location facilities, as we invested in additional co-location facilities and additional equipment within existing co-location facilities to support our global cloud platform. Our gross margin may fluctuate or decline in the near-term as we seek further expansion of our global cloud platform.

Operating Expenses

Sales and Marketing

	Year Ended December 31,		Change	
	2018	2017	\$	%
	(dollars in thousands)			
Sales and marketing	\$ 94,394	\$ 61,899	\$ 32,495	52 %

Sales and marketing expenses increased by \$32.5 million, or 52%, for the year ended December 31, 2018 compared to the year ended December 31, 2017. The increase was primarily driven by \$24.6 million in increased employee-related costs due to a 61% increase in headcount in our sales and marketing organization from December 31, 2017 to December 31, 2018, including an increase of \$5.4 million in sales commissions expense including the amortization of contract acquisition costs. The remainder of the increase was due primarily to increased costs of marketing programs of \$4.6 million due to investments in brand awareness advertising, third-party industry events, and digital performance marketing, aimed at driving overall revenue growth, increased expenses of \$3.1 million related to co-location and bandwidth expenses for free customers due to an increase in free customers, \$2.2 million of increased allocated overhead costs primarily related to rent and office-related expenses due to expansion of office space, increased expenses of \$2.1 million related to third-party technology services, consulting services, and company-wide event costs, and \$1.9 million of increased travel-related costs. These increases were partially offset by decreased expenses of \$6.3 million as a result of decreased certificate authority services costs for free customers due to re-negotiating rates with vendors.

Research and Development

	Year Ended December 31,		Change	
	2018	2017	\$	%
	(dollars in thousands)			
Research and development	\$ 54,463	\$ 33,650	\$ 20,813	62 %

Research and development expenses increased by \$20.8 million, or 62%, for the year ended December 31, 2018 compared to the year ended December 31, 2017. The increase was primarily driven by \$20.9 million in increased employee-related costs due to a 58% increase in headcount in our research and development organization from December 31, 2017 to December 31, 2018, \$2.9 million of increased allocated overhead costs primarily related to rent and office-related expenses due to expansion of office space, \$1.0 million of increased travel-related costs, and \$1.0 million of increased third-party services and technology costs. These increases were partially offset by decreased expenses of \$5.4 million as a result of increased capitalized internal-use software development costs.

General and Administrative

	Year Ended December 31,		Change	
	2018	2017	\$	%
	(dollars in thousands)			
General and administrative	\$ 85,179	\$ 20,308	\$ 64,871	319 %

General and administrative expenses increased by \$64.9 million, or 319%, for the year ended December 31, 2018 compared to the year ended December 31, 2017. The increase was primarily driven by \$32.1 million in increased employee-related costs, inclusive of an increase of \$23.3 million in non-cash stock-based compensation expense related to the secondary stock sales during the year ended December 31, 2018 described in Note 13 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The increase in employee-related costs was also driven by a 63% increase in headcount in our general and administrative organization from December 31, 2017 to December 31, 2018 as we prepared to operate as a public company. The remainder of the increase was primarily due to an increase of \$22.8 million of professional fees for third-party accounting, consulting, and legal services as we invested in preparing to be a public company, \$8.0 million of professional fees for information technology as we scaled our systems to operate as a public company, \$1.9 million

of increased recruiting, travel, and company-wide event costs, \$1.1 million of bad debt expense, \$1.0 million of increased third-party technology services costs, and \$0.8 million of increased depreciation expense. These increases were partially offset by \$3.0 million of decreased allocated overhead costs.

Non-Operating Income (Expense)

Interest Income

	Year Ended December 31,		Change	
	2018	2017	\$	%
(dollars in thousands)				
Interest income	\$ 1,895	\$ 762	\$ 1,133	149 %

Interest income increased by \$1.1 million, or 149%, for the year ended December 31, 2018 compared to the year ended December 31, 2017. The increase was primarily driven by a higher invested balance in cash and cash equivalents and available-for-sale securities.

Interest Expense

	Year Ended December 31,		Change	
	2018	2017	\$	%
(dollars in thousands)				
Interest expense	\$ (992)	\$ (862)	\$ (130)	15 %

Interest expense did not significantly fluctuate during the year ended December 31, 2018 as compared to the year ended December 31, 2017.

Other Income (Expense), net

	Year Ended December 31,		Change	
	2018	2017	\$	%
(dollars in thousands)				
Other income (expense), net	\$ (2,091)	\$ 115	\$ (2,206)	*

* Not meaningful

Other income (expense), net decreased by \$2.2 million, for the year ended December 31, 2018 compared to the year ended December 31, 2017. The decrease was primarily driven by increased expense of \$1.2 million as a result of the increased fair value of our redeemable convertible preferred stock warrant liability. The remainder of the decrease was primarily driven by fluctuations in foreign currency transaction gains and losses.

Provision for Income Taxes

	Year Ended December 31,		Change	
	2018	2017	\$	%
(dollars in thousands)				
Provision for income taxes	\$ 1,077	\$ 1,033	\$ 44	4 %

The provision for income taxes did not significantly fluctuate during the year ended December 31, 2018 as compared to the year ended December 31, 2017.

Quarterly Results of Operations

The following tables set forth our unaudited quarterly statements of operations data for each of the quarters indicated, as well as the percentage that each line item represents of our revenue for each quarter presented. The unaudited quarterly statements of operations data set forth below have been prepared on the same basis as our audited consolidated financial statements, and in the opinion of management, include all adjustments, which consist only of normal recurring adjustments, that are necessary for the fair statement of such data. Our historical results are not necessarily indicative of our future results, and the results for any quarter are not necessarily indicative of the results to be expected for a full year or any other period. The following quarterly financial data should be read in conjunction with our consolidated financial statements and related notes thereto included elsewhere in this Annual Report on Form 10-K.

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(in thousands)							
Consolidated Statements of Operations								
Revenue	\$ 41,824	\$ 45,281	\$ 50,070	\$ 55,499	\$ 61,727	\$ 67,424	\$ 73,941	\$ 83,930
Cost of revenue ⁽¹⁾	9,007	10,365	11,209	12,956	14,360	14,832	16,033	18,198
Gross profit	32,817	34,916	38,861	42,543	47,367	52,592	57,908	65,732
Operating expenses:								
Sales and marketing ⁽¹⁾	18,895	22,849	24,462	28,188	30,817	35,836	45,538	47,107
Research and development ⁽¹⁾	11,263	13,023	14,827	15,350	17,649	18,868	27,863	26,289
General and administrative ⁽¹⁾	13,512	19,529	36,040	16,098	16,048	17,659	25,593	22,278
Total operating expenses	43,670	55,401	75,329	59,636	64,514	72,363	98,994	95,674
Loss from operations	(10,853)	(20,485)	(36,468)	(17,093)	(17,147)	(19,771)	(41,086)	(29,942)
Non-operating income (expense):								
Interest income	234	226	387	1,048	913	830	1,079	2,965
Interest expense	(232)	(243)	(251)	(266)	(273)	(290)	(407)	(142)
Other expense, net	(446)	(217)	(1,240)	(188)	(293)	(86)	(651)	(412)
Total non-operating income (expense), net	(444)	(234)	(1,104)	594	347	454	21	2,411
Loss before income taxes	(11,297)	(20,719)	(37,572)	(16,499)	(16,800)	(19,317)	(41,065)	(27,531)
Provision for (benefit from) income taxes	171	301	417	188	314	389	(212)	624
Net loss	\$ (11,468)	\$ (21,020)	\$ (37,989)	\$ (16,687)	\$ (17,114)	\$ (19,706)	\$ (40,853)	\$ (28,155)

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

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(in thousands)							
Cost of revenue	\$ 17	\$ 33	\$ 37	\$ 32	\$ 32	\$ 34	\$ 397	\$ 253
Sales and marketing	154	234	290	301	279	275	4,880	3,275
Research and development	239	378	461	454	417	406	7,801	4,413
General and administrative	379	415	23,648	275	329	329	9,833	3,674
Total stock-based compensation expense	\$ 789	\$ 1,060	\$ 24,436	\$ 1,062	\$ 1,057	\$ 1,044	\$ 22,911	\$ 11,615

	Three Months Ended							
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
Percentage of Revenue Data								
Revenue	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Cost of revenue	22	23	22	23	23	22	22	22
Gross profit	78	77	78	77	77	78	78	78
Operating expenses:								
Sales and marketing	45	50	49	51	50	53	62	56
Research and development	27	29	30	28	29	28	38	31
General and administrative	32	43	72	29	26	26	34	27
Total operating expenses	104	122	151	108	105	107	134	114
Loss from operations	(26)	(45)	(73)	(31)	(28)	(29)	(56)	(36)
Non-operating income (expense):								
Interest income	1	—	1	1	1	1	1	3
Interest expense	(1)	(1)	(1)	—	—	—	—	—
Other expense, net	(1)	—	(2)	—	—	—	(1)	—
Total non-operating income (expense), net	(1)	(1)	(2)	1	1	1	—	3
Loss before income taxes	(27)	(46)	(75)	(30)	(27)	(28)	(56)	(33)
Provision for (benefit from) income taxes	—	—	1	—	1	1	(1)	1
Net loss	(27)%	(46)%	(76) %	(30) %	(28)%	(29)%	(55) %	(34) %

Quarterly Revenue Trends

Our quarterly revenue generally increased sequentially in each of the quarters presented due primarily to increases in sales to new customers as well as increases in sales to existing customers.

Quarterly Cost of Revenue Trends

Cost of revenue increased sequentially in each of the quarters presented, consistent with the growth of revenue and primarily driven by expenses related to operating in co-location facilities, network and bandwidth costs, and related overhead costs for operating our global cloud platform to support the expanded adoption of our global cloud platform by existing and new customers.

Quarterly Gross Profit Trends

The overall increase in gross profit during the quarters presented was primarily due to increases in revenue, and was due in part to the increased efficiency of our network infrastructure and co-location facilities.

Quarterly Operating Expense Trends

Operating expenses generally have increased sequentially in the quarters presented primarily due to increases in headcount and other related expenses to support our growth. Sales and marketing expenses increased as we expanded our sales team to acquire new customers, and we intend to continue to make significant investments in our sales and marketing organization. We also intend to invest in research and development efforts to add new features and enhance the functionality of our existing global cloud platform, and to ensure the security, performance, and reliability of our global cloud platform. General and administrative expenses increased in recent quarters due to costs related to preparing to be a public company. The increase in total operating expenses during the three months ended September 30, 2019 in absolute dollars and as a percentage of revenue is primarily due to cumulative stock-based compensation expense of \$21.0 million for the QE Options for the service period rendered from the date of grant through the equity securities listing date and for the QE RSUs that vested in connection with the effective date of our registration statement on Form S-1 filed with the SEC in connection with the IPO, as described in Note 10 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The increase in general and administrative expenses during the three months ended September 30, 2018 in absolute dollars and as a percentage of revenue is primarily due to a \$23.3 million increase in stock-based compensation expense related to the secondary stock sale described in Note 13 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Liquidity and Capital Resources

Since our inception, we have financed our operations primarily through net proceeds from the sale of our equity securities as well as payments received from customers using our global cloud platform. In September 2019, we completed our IPO in which we issued and sold 40,250,000 shares of Class A common stock at a price per share to the public of \$15.00. We received net proceeds of \$565.0 million from sales of our shares in the IPO, net of underwriters' discounts and commissions, after deducting offering costs of \$5.5 million.

As of December 31, 2019, we had cash and cash equivalents of \$139.0 million, including \$2.4 million held by our foreign subsidiaries. We do not expect to incur material taxes in the event we repatriate any of these amounts. Our cash and cash equivalents primarily consist of highly liquid money market funds, commercial paper, and U.S. government agency securities. We also had available-for-sale securities of \$498.0 million consisting of U.S. treasury securities, U.S. government agency securities, commercial paper, and corporate bonds. We have generated significant operating losses from our operations as reflected in our accumulated deficit of \$301.7 million as of December 31, 2019 and negative cash flows from operations. We expect to continue to incur operating losses and generate negative cash flows from operations for the foreseeable future due to the investments we intend to make in our business, and as a result we may require additional capital resources to execute on our strategic initiatives to grow our business.

We believe that our existing cash, cash equivalents, and available-for-sale securities will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months. Our assessment of the period of time through which our financial resources will be adequate to support our operations is a forward-looking statement and involves risks and uncertainties. Our actual results could vary as a result of, and our near- and long-term future capital requirements will depend on, many factors, including our growth rate, subscription renewal activity, the timing and extent of spending to support our infrastructure and research and development efforts, the expansion of sales and marketing activities, the timing of new introductions of products or features, and the continuing market adoption of our global cloud platform. We may in the future enter into arrangements to acquire or invest in complementary businesses, services and technologies, including intellectual property rights. We have based our estimates on assumptions that may prove to be wrong, and we could use our available capital resources sooner than we currently expect. We may be required to seek additional equity or debt financing. In the event that additional financing is required from outside sources, we may not be able to raise it on terms acceptable to us or at all. If we

are unable to raise additional capital when desired, or if we cannot expand our operations or otherwise capitalize on our business opportunities because we lack sufficient capital, our business, operating results, and financial condition would be adversely affected.

In July 2015 and November 2015, we entered into three separate Installment Purchase Agreements (IPA) totaling \$1.7 million for computer equipment and maintenance with one of our suppliers. The agreements were collateralized by the equipment purchased from the supplier and bear interest ranging from 2.9% to 5.0%. We had an aggregate of \$0.3 million outstanding in principal and interest under the IPA note payable as of December 31, 2018 and zero as of December 31, 2019.

Cash Flows

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

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Net cash provided by (used in) operating activities	\$ (38,917)	\$ (43,281)	\$ 3,167
Net cash provided by (used in) investing activities	\$ (417,641)	\$ (120,795)	\$ 9,544
Net cash provided by (used in) financing activities	\$ 570,768	\$ 168,621	\$ (149)

Operating Activities

Net cash used in operating activities during the year ended December 31, 2019 was \$38.9 million, which resulted from a net loss of \$105.8 million, adjusted for non-cash charges of \$79.8 million and net cash outflow of \$12.9 million from changes in operating assets and liabilities. Non-cash charges primarily consisted of \$36.6 million for stock-based compensation expense, \$29.5 million for depreciation and amortization expense, and \$10.8 million for amortization of deferred contract acquisition costs. The net cash outflow from changes in operating assets and liabilities was primarily the result of a \$14.6 million increase in deferred revenue, and a \$13.5 million increase in accounts payable, accrued expenses, and other liabilities, partially offset by a \$20.1 million increase in deferred contract acquisition costs due to increased sales commissions from the addition of new customers, a \$11.2 million increase in accounts receivable, net, which increased due to our growing customer base and timing of collections from our customers, and a \$9.2 million increase in prepaid expenses and other assets.

Net cash used in operating activities during the year ended December 31, 2018 was \$43.3 million, which resulted from a net loss of \$87.2 million, adjusted for non-cash charges of \$55.5 million and net cash outflow of \$11.6 million from changes in operating assets and liabilities. Non-cash charges primarily consisted of \$27.3 million for stock-based compensation expense, \$18.9 million for depreciation and amortization expense, and \$7.1 million for amortization of deferred contract acquisition costs. The net cash outflow from changes in operating assets and liabilities was primarily the result of a \$14.8 million increase in accounts receivable, net which increased due to our growing customer base and timing of collections from our customers, a \$12.2 million increase in deferred contract acquisition costs due to increased sales commissions due to the addition of new customers, a \$6.3 million increase in prepaid expenses and other assets, partially offset by a \$14.6 million increase in accounts payable, accrued expenses, and other liabilities, a \$4.9 million increase in deferred revenue, and a \$2.2 million decrease in contract assets due to timing of invoicing.

Net cash provided by operating activities during the year ended December 31, 2017 was \$3.2 million, which resulted from a net loss of \$10.7 million, adjusted for non-cash charges of \$19.1 million and net cash outflow of \$5.2 million from changes in operating assets and liabilities. Non-cash charges primarily consisted of \$12.2 million for depreciation and amortization expense, \$4.0 million for amortization of deferred contract acquisition costs, and \$2.8 million for stock-based compensation expense. The net cash outflow from changes in operating assets and liabilities was primarily the result of a \$9.0 million increase in deferred contract acquisition costs due to increased sales commissions due to the addition of new customers and the expansion of existing customers, a \$3.1 million increase in contract assets due to timing of invoicing, and a \$2.1 million increase in accounts receivable, net due to our growing customer base and timing of collections from our customers, partially offset by a \$5.5 million increase in deferred revenue and a \$4.7 million increase in accrued expenses and other liabilities due to growth in our business and higher headcount.

Investing Activities

Net cash used in investing activities during the year ended December 31, 2019 of \$417.6 million resulted primarily from the purchases of available-for-sale securities of \$537.4 million, capital expenditures of \$43.3 million, and the capitalization of internal-use software development costs of \$14.0 million. These activities were offset by proceeds from the sales and maturities of available-for-sale securities of \$177.0 million.

Net cash used in investing activities during the year ended December 31, 2018 of \$120.8 million resulted primarily from the purchases of available-for-sale securities of \$145.3 million, capital expenditures of \$25.5 million, and the capitalization of internal-use software development costs of \$9.4 million. These activities were partially offset by proceeds from maturities of available-for-sale securities of \$59.2 million.

Net cash provided by investing activities during the year ended December 31, 2017 of \$9.5 million resulted primarily from proceeds from maturities of available-for-sale securities of \$79.8 million. This was partially offset by capital expenditures of \$19.0 million, the capitalization of internal-use software development costs of \$3.9 million, and purchases of available-for-sale securities of \$47.1 million.

Financing Activities

Net cash provided by financing activities of \$570.8 million during the year ended December 31, 2019 was primarily due to \$570.5 million in net proceeds from the IPO, after deducting underwriting discounts and commissions, and \$6.0 million of proceeds from the exercise of vested and unvested stock options, partially offset by \$5.3 million of payments of deferred offering costs.

Net cash provided by financing activities of \$168.6 million during the year ended December 31, 2018 was primarily due to \$150.0 million of proceeds from the issuance of Series D redeemable convertible preferred stock and \$18.9 million of proceeds from the exercise of vested and unvested stock options.

Net cash used in financing activities of \$0.1 million during the year ended December 31, 2017 was primarily due to \$2.2 million of proceeds from the build-to-suit lease financing obligation drawdown and \$2.8 million of proceeds from the exercise of vested and unvested stock options, partially offset by the use of \$4.8 million to repay the related party promissory note payable.

Contractual Obligations and Commitments

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

	Payments Due by Period as of December 31, 2019				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
	(in thousands)				
Non-cancelable:					
Open purchase agreements ⁽¹⁾	\$ 13,684	\$ 2,430	\$ 4,210	\$ 2,062	\$ 4,982
Bandwidth and co-location commitments ⁽²⁾	32,776	18,517	12,614	1,644	1
Operating lease obligations ⁽³⁾	51,359	11,385	20,075	9,595	10,304
Total	\$ 97,819	\$ 32,332	\$ 36,899	\$ 13,301	\$ 15,287

- (1) Open purchase commitments are for the purchase of services under non-cancelable contracts. They were not recorded as liabilities on the consolidated balance sheet as of December 31, 2019 as we had not yet received the related services.
- (2) Long-term commitments for bandwidth usage and co-location with various networks and Internet service providers. The costs for services not yet received were not recorded as liabilities on the consolidated balance sheet as of December 31, 2019.
- (3) Office space and equipment under non-cancelable operating leases, primarily due to our headquarters in San Francisco, California and for our offices in Austin, Texas; San Jose, California; Miramar, Florida; London, United Kingdom; Lisbon, Portugal; and Singapore. Total payments listed represent total minimum future lease payments.

The contractual commitment amounts in the table above are associated with agreements that are enforceable and legally binding. Obligations under contracts that we can cancel without a significant penalty are not included in the

tables above. Purchase orders issued in the ordinary course of business are not included in the tables above, as our purchase orders represent authorizations to purchase rather than binding agreements.

In addition to the contractual obligations set forth above, as of December 31, 2019, we had \$6.7 million in letters of credit outstanding in favor of certain landlords for office space. These letters of credit renew annually and expire on various dates through 2028.

For additional discussion on our leases and other commitments, refer to Note 7 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Off-Balance Sheet Arrangements

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

Critical Accounting Policies, Significant Judgments and Use of Estimates

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

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

Revenue Recognition

In accordance with Accounting Standards Codification (ASC) Topic 606, *Revenue From Contracts With Customers* (ASC 606), revenue is recognized when a customer obtains control of promised services. The amount of revenue recognized reflects the consideration that we expect to be entitled to receive in exchange for these services. To achieve this standard, we apply the following five steps:

1. Identify the contract with a customer

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

2. Identify the performance obligations in the contract

Performance obligations promised in a contract are identified based on the services that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the service either on its own or together with other resources that are readily available to us, and are distinct in the context of the contract, whereby the transfer of the services is separately identifiable from other promises in the contract. Our performance obligation primarily consists of subscription and support services, as they are provided over the same service period.

3. Determine the transaction price

The transaction price is determined based on the consideration to which we expect to be entitled in exchange for transferring services to the customer. Usage-based variable consideration is recognized in the period it is incurred. None of our contracts contain a significant financing component.

4. Allocate the transaction price to performance obligations in the contract

The subscription and support services in our contracts are considered a single performance obligation, and thus the entire transaction price is allocated to the single performance obligation.

5. Recognize revenue when or as we satisfy a performance obligation

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

We generate sales directly through our sales team and through our channel partners. Revenue from sales to channel partners are recorded once all revenue recognition criteria above are met. Channel partners generally receive an order from an end-customer prior to placing an order with us. Payment from channel partners is not contingent on the partner's collection from end-customers. We have determined that we are acting as an agent in these arrangements and record this revenue on a net basis.

Subscription and Support Revenue

We generate revenue primarily from sales to our customers of subscriptions to access our platform, together with related support services. Arrangements with customers generally do not provide the customer with the right to take possession of our software operating our global cloud platform at any time. Instead, customers are granted continuous access to our global cloud platform over the contractual period. Access to our platform and products is considered a monthly series comprising one performance obligation. A time-elapsed output method is used to measure progress because we transfer control evenly over the contractual period. Accordingly, the fixed consideration related to subscription and support revenue is generally recognized on a straight-line basis over the contract term beginning on the date that our service is made available to the customer. Usage-based consideration is primarily related to fees charged for our customer's use of excess bandwidth when accessing our platform in a given period and is recognized as revenue in the period in which the usage occurs.

The typical subscription and support term for our contracted customers, which consist of customers that enter into contracts for our Enterprise subscription plan (and which we previously referred to as enterprise customers), is one year and subscription and support term lengths range from one to three years. Most of our contracts with contracted customers are non-cancelable over the contractual term. Customers typically have the right to terminate their contracts for cause if we fail to perform in accordance with the contractual terms. For our pay-as-you-go customers, which consist of customers that sign up for our Pro or Business subscription plans through our website (and which we previously referred to as self-serve customers), subscription and support terms are typically monthly.

Costs to Obtain and Fulfill a Contract

We capitalize sales commission and associated payroll taxes paid to internal sales personnel that are incremental to the acquisition of channel partner and direct customer contracts. These costs are recorded as deferred contract acquisition costs on the consolidated balance sheets. We determine whether costs should be deferred based on our sales compensation plans, if the commissions are in fact incremental and would not have occurred absent the customer contract.

Sales commissions for renewal of a contract are not considered commensurate with the commissions paid for the acquisition of the initial contract. Commissions paid upon the initial acquisition of a contract are amortized over an estimated period of benefit of three years while commissions paid for renewal contracts are amortized over the contractual term of the renewals. Amortization of deferred contract acquisition costs is recognized on a straight-line basis commensurate with the pattern of revenue recognition and included in sales and marketing expense in the consolidated statements of operations. We determine the period of benefit for commissions paid for the acquisition of the initial contract by taking into consideration the expected subscription term and expected renewals of our

customer contracts, the duration of our relationships with our customers, customer retention data, our technology development lifecycle, and other factors. We periodically review the carrying amount of deferred contract acquisition costs to determine whether events or changes in circumstances have occurred that could impact the period of benefit of these deferred costs. We did not recognize any impairment losses of deferred contract acquisition costs during the periods presented.

Stock-based Compensation

We recognize stock-based compensation expense based on the grant date fair value of the awards. We estimate the fair value of each stock-based award on the grant date using the Black-Scholes option pricing model. Stock-based compensation expense for awards with service-based vesting only is recognized on a straight-line basis over the requisite service period of the awards, which is generally four years. We account for forfeitures as they occur.

The Black-Scholes option pricing model requires the use of highly subjective assumptions. The assumptions used to determine the fair value of the stock-based awards are management's best estimates and involve inherent uncertainties and the application of judgment. If any of the assumptions used in the Black-Scholes option pricing model change significantly, stock-based compensation expense for future awards may differ materially compared with the awards granted previously. These assumptions and estimates are as follows:

- Fair value of common stock—Prior to our IPO, the fair value of our common stock was historically determined by our Board of Directors, with assistance from management and contemporaneous third-party valuations. Because there had been no public trading market for our common stock, our Board of Directors exercised reasonable judgment and considered numerous objective and subjective factors, including, but not limited to, our operating and financial performance, current business conditions and projections, the market performance of comparable publicly-traded software and technology companies, and the U.S. and global economic and capital market conditions and outlook to determine the best estimate of the fair value of our common stock at each grant date. After our IPO, we used the publicly quoted price of our Class A common stock as reported on the New York Stock Exchange as the fair value per share of our common stock;
- Expected term—The expected term represents the period that our stock-based awards are expected to be outstanding. The expected term assumptions were determined based on the vesting terms, exercise terms and contractual lives of the awards. The expected term was estimated using the simplified method allowed under U.S. GAAP;
- Volatility—We determine the expected volatility based on historical volatilities of similar publicly traded companies corresponding to the expected term of the awards;
- Risk free interest rates—The risk-free interest rate is based on the implied yield currently available on U.S. treasury notes with terms approximately equal to the expected term of the award; and
- Dividend yield—Our expected dividend rate is zero as we currently have no history or expectation of declaring dividends on our common stock.

The following weighted-average assumptions were used for the periods presented:

	Year Ended December 31,		
	2019	2018	2017
Expected term (in years)	6.2	6.5	6.5
Expected volatility	40.3 %	43.5 %	45.8 %
Risk-free interest rate	2.3 %	2.9 %	2.1 %
Dividend yield	—	—	—

We have granted qualified event options (the QE Options) and qualified event RSUs (the QE RSUs) to employees and contractors which vest on the satisfaction of both a service-based condition and a performance condition. For QE Options, the performance condition was deemed satisfied upon our Class A common stock being listed on a public exchange. For QE Options, the service-based condition is satisfied by rendering service from the date of grant through the qualifying event, as well as a four-year vesting period commencing with the qualifying event. For QE RSUs, the performance condition was deemed satisfied upon the effective date of our registration statement on

Form S-1 filed with the SEC in connection with the IPO. The QE RSUs have a service-based vesting condition satisfied over a four-year vesting period. Awards which contain both service-based and performance conditions are recognized using the accelerated attribution method once the performance condition is probable of occurring. The listing of equity securities event and effectiveness of a registration statement event are not deemed probable until consummated. In connection with our IPO, we recognized \$21.0 million of cumulative stock-based compensation expense for the QE Options for the service period rendered from the date of grant through the equity securities listing date and for the QE RSUs that vested in connection with the effective date of our registration statement on Form S-1 and began recording the remaining unrecognized stock-based compensation expense over the remainder of the requisite service period.

Capitalized Internal-Use Software Development Costs

Certain development costs related to our global cloud platform during the application development stage are capitalized. Costs incurred in the preliminary stages of development are analogous to research and development activities and are expensed as incurred. The preliminary stage includes such activities as conceptual formulation of alternatives, evaluation of alternatives, determination of existence of needed technology, and final selection of alternatives. Once the application development stage is reached, internal and external costs are capitalized until the software is substantially complete and ready for its intended use. Capitalized costs are recorded as part of property and equipment, net. Capitalized internal-use software is amortized on a straight-line basis over its estimated useful life, which is generally three years, and is recorded as cost of revenue in the consolidated statements of operations. We exercise judgment in determining the point at which various projects may be capitalized, in assessing the ongoing value of the capitalized costs and in determining the estimated useful lives over which the costs are amortized.

JOBS Act Accounting Election

We meet the definition of an emerging growth company under the JOBS Act, which permits us to take advantage of an extended transition period to comply with new or revised accounting standards applicable to public companies. We have elected to use this extended transition period until we are no longer an emerging growth company or until we affirmatively and irrevocably opt out of the extended transition period. As a result, our consolidated financial statements may not be comparable to companies that comply with new or revised accounting pronouncements applicable to public companies.

Recent Accounting Pronouncements

Refer to Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for more information regarding recently issued accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We have operations in the United States and internationally, and we are exposed to market risk in the ordinary course of our business.

Interest Rate Risk

As of December 31, 2019, we had cash and cash equivalents of \$139.0 million and available-for-sale securities of \$498.0 million. The carrying amount of our cash equivalents approximates fair value due to the short maturities of these instruments. The primary objectives of our investment activities are the preservation of capital, the fulfillment of liquidity needs, and the fiduciary control of cash and investments. Our available-for-sale securities are held for capital preservation purposes. We do not enter into investments for trading or speculative purposes.

Our cash equivalents and our investment portfolio are subject to market risk due to fluctuations in interest rates. Our future investment income may fall short of our expectations due to changes in interest rates or we may suffer losses

in principal if we are forced to sell securities that decline in market value due to changes in interest rates. However, because we classify our securities as “available-for-sale,” no gains or losses are recognized due to changes in interest rates unless such securities are sold prior to maturity or declines in fair value are determined to be other-than-temporary.

We do not believe a hypothetical 10% increase or decrease in interest rates during any of the periods presented would have a material impact on our consolidated financial statements.

Foreign Currency Risk

The functional currency of our foreign subsidiaries is the U.S. dollar and our results of operations and cash flows are subject to fluctuations due to changes in foreign currency exchange rates relative to the U.S. dollar. The majority of our revenue is denominated in U.S. dollars. Our expenses are generally denominated in the currencies of the countries in which our operations are located and are subject to fluctuations due to changes in foreign currency exchange rates, particularly changes in the British Pound and Singapore Dollar. As exchange rates may fluctuate significantly between periods, revenue and operating expenses, when converted into U.S. dollars, may also experience significant fluctuations between periods. During the years ended December 31, 2019, 2018, and 2017 a hypothetical 10% change in foreign currency exchange rates applicable to our business would not have had a material impact on our consolidated financial statements. To date, we have not had a formal hedging program with respect to foreign currency, but we may do so in the future if our exposure to foreign currency should become more significant.

Item 8. Financial Statements and Supplementary Data

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The supplementary financial information required by this Item 8, is included in Part II, Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operations, under the caption "Quarterly Results of Operations Data," which is incorporated herein by reference.

Report of Independent Registered Public Accounting Firm

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

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Cloudflare, Inc. and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements 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 years in the three-year period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the 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. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 2014.

Santa Clara, California
March 4, 2020

CLOUDFLARE, INC.

CONSOLIDATED BALANCE SHEETS
 (in thousands, except per share data)

	December 31,	
	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 138,976	\$ 25,055
Available-for-sale securities	497,972	135,602
Accounts receivable, net	33,867	25,155
Contract assets	2,063	1,552
Prepaid expenses and other current assets	16,994	9,373
Total current assets	689,872	196,737
Property and equipment, net	101,466	73,210
Goodwill	4,083	4,083
Acquired intangible assets, net	31	156
Deferred contract acquisition costs, noncurrent	25,184	15,940
Restricted cash	6,660	6,371
Other noncurrent assets	3,528	1,883
Total assets	\$ 830,824	\$ 298,380
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit)		
Current liabilities:		
Accounts payable	\$ 11,463	\$ 14,285
Accrued expenses and other current liabilities	28,314	15,699
Note payable, current portion	—	255
Liability for early exercise of unvested stock options	13,263	14,323
Deferred revenue	30,843	16,817
Total current liabilities	83,883	61,379
Build-to-suit lease financing obligation	10,506	10,443
Deferred revenue, noncurrent	804	220
Redeemable convertible preferred stock warrant liability	—	1,618
Other noncurrent liabilities	9,803	6,704
Total liabilities	104,996	80,364
Commitments and contingencies (Note 7)		
Redeemable Convertible Preferred Stock		
Redeemable convertible preferred stock; \$0.001 par value; zero and 168,108 shares authorized as of December 31, 2019 and 2018, respectively; zero and 165,658 shares issued and outstanding with aggregate liquidation preference of zero and \$332,041 as of December 31, 2019 and 2018, respectively	—	331,521
Stockholders' Equity (Deficit)		
Class A common stock; \$0.001 par value; 2,250,000 and 550,000 shares authorized as of December 31, 2019 and 2018, respectively; 87,072 and zero shares issued and outstanding as of December 31, 2019 and 2018, respectively	87	—
Class B common stock; \$0.001 par value; 315,000 and 300,000 shares authorized as of December 31, 2019 and 2018, respectively; 213,101 and 91,542 shares issued and outstanding as of December 31, 2019 and 2018, respectively	207	85
Additional paid-in capital	1,027,179	82,345
Accumulated deficit	(301,706)	(195,878)
Accumulated other comprehensive income (loss)	61	(57)
Total stockholders' equity (deficit)	725,828	(113,505)
Total liabilities, redeemable convertible preferred stock and stockholders' equity (deficit)	\$ 830,824	\$ 298,380

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

CLOUDFLARE, INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year Ended December 31,		
	2019	2018	2017
Revenue	\$ 287,022	\$ 192,674	\$ 134,915
Cost of revenue	63,423	43,537	28,788
Gross profit	223,599	149,137	106,127
Operating expenses:			
Sales and marketing	159,298	94,394	61,899
Research and development	90,669	54,463	33,650
General and administrative	81,578	85,179	20,308
Total operating expenses	331,545	234,036	115,857
Loss from operations	(107,946)	(84,899)	(9,730)
Non-operating income (expense):			
Interest income	5,787	1,895	762
Interest expense	(1,112)	(992)	(862)
Other income (expense), net	(1,442)	(2,091)	115
Total non-operating income (expense), net	3,233	(1,188)	15
Loss before income taxes	(104,713)	(86,087)	(9,715)
Provision for income taxes	1,115	1,077	1,033
Net loss	\$ (105,828)	\$ (87,164)	\$ (10,748)
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.72)	\$ (1.08)	\$ (0.14)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	146,306	80,981	77,147

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

CLOUDFLARE, INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)

	Year Ended December 31,		
	2019	2018	2017
Net loss	\$ (105,828)	\$ (87,164)	\$ (10,748)
Other comprehensive income (loss):			
Change in unrealized gain (loss) on investments, net of tax	118	49	(17)
Other comprehensive income (loss)	118	49	(17)
Comprehensive loss	<u>\$ (105,710)</u>	<u>\$ (87,115)</u>	<u>\$ (10,765)</u>

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

CLOUDFLARE, INC.
CONSOLIDATED STATEMENTS OF REDEEMABLE CONVERTIBLE PREFERRED STOCK AND STOCKHOLDERS' EQUITY (DEFICIT)
(in thousands)

	Redeemable convertible preferred stock		Class A common stock		Class B common stock		Additional paid-in capital	Accumulated deficit	Accumulated other comprehensive income (loss)	Total stockholders' equity (deficit)
	Shares	Amount	Shares	Amount	Shares	Amount				
Balance as of December 31, 2016	152,022	\$ 181,546	—	\$ —	76,593	\$ 77	\$ 44,588	\$ (97,966)	\$ (89)	\$ (53,390)
Issuance of common stock upon exercise of stock options	—	—	—	—	1,461	2	1,053	—	—	1,055
Repurchases of unvested common stock	—	—	—	—	(11)	—	—	—	—	—
Issuance of common stock related to early exercised stock options	—	—	—	—	997	—	—	—	—	—
Vesting of shares issued upon early exercise of stock options	—	—	—	—	—	—	455	—	—	455
Vesting of restricted common stock	—	—	—	—	76	—	5	—	—	5
Stock-based compensation	—	—	—	—	—	—	2,806	—	—	2,806
Net loss	—	—	—	—	—	—	—	(10,748)	—	(10,748)
Other comprehensive income (loss)	—	—	—	—	—	—	—	—	(17)	(17)
Balance as of December 31, 2017	152,022	181,546	—	—	79,116	79	48,907	(108,714)	(106)	(59,834)
Issuance of Series D redeemable convertible preferred stock, net of issuance costs of \$25	13,636	149,975	—	—	—	—	—	—	—	—
Issuance of common stock upon exercise of stock options	—	—	—	—	5,481	6	4,406	—	—	4,412
Repurchases of unvested common stock	—	—	—	—	(36)	—	—	—	—	—
Issuance of common stock related to early exercised stock options	—	—	—	—	6,906	—	—	—	—	—
Vesting of shares issued upon early exercise of stock options	—	—	—	—	—	—	1,415	—	—	1,415
Vesting of restricted common stock	—	—	—	—	75	—	3	—	—	3
Stock-based compensation	—	—	—	—	—	—	27,614	—	—	27,614
Net loss	—	—	—	—	—	—	—	(87,164)	—	(87,164)
Other comprehensive income (loss)	—	—	—	—	—	—	—	—	49	49
Balance as of December 31, 2018	165,658	331,521	—	—	91,542	85	82,345	(195,878)	(57)	(113,505)
Issuance of common stock upon initial public offering, net of underwriting discounts and issuance costs	—	—	40,250	40	—	—	565,001	—	—	565,041
Conversion of redeemable convertible preferred stock to common stock upon initial public offering	(165,658)	(331,521)	31,381	31	134,277	135	331,355	—	—	331,521
Conversion of redeemable convertible preferred stock warrants into common stock warrants and issuance of common stock upon net exercise of common stock warrants	—	—	—	—	174	—	3,135	—	—	3,135
Issuance of common stock in connection with acquisition	—	—	—	—	7	—	18	—	—	18
Issuance of common stock upon exercise of stock options	—	—	27	1	1,736	2	3,055	—	—	3,058
Repurchases of unvested common stock	—	—	—	—	(123)	—	—	—	—	—
Issuance of common stock related to early exercised stock options	—	—	—	—	902	—	—	—	—	—
Vesting of shares issued upon early exercise of stock options	—	—	—	—	—	—	3,668	—	—	3,668
Conversion of Class B to Class A common stock	—	—	15,414	15	(15,414)	(15)	—	—	—	—
Stock-based compensation	—	—	—	—	—	—	38,602	—	—	38,602
Net loss	—	—	—	—	—	—	—	(105,828)	—	(105,828)
Other comprehensive income (loss)	—	—	—	—	—	—	—	—	118	118
Balance as of December 31, 2019	—	\$ —	87,072	\$ 87	213,101	\$ 207	\$ 1,027,179	\$ (301,706)	\$ 61	\$ 725,828

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

CLOUDFLARE, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2019	2018	2017
Cash Flows From Operating Activities			
Net loss	\$ (105,828)	\$ (87,164)	\$ (10,748)
Adjustments to reconcile net loss to cash provided by (used in) operating activities:			
Depreciation and amortization expense	29,479	18,905	12,174
Amortization of deferred contract acquisition costs	10,821	7,060	3,955
Stock-based compensation expense	36,627	27,347	2,755
Net accretion of discounts and amortization of premiums on available-for-sale securities	(1,801)	(570)	338
Deferred income taxes	370	385	(135)
Provision for bad debt	2,488	1,080	—
Change in fair value of redeemable convertible preferred stock warrant liability	1,517	1,220	50
Other	304	46	9
Changes in operating assets and liabilities, net of effect of acquisitions:			
Accounts receivable, net	(11,200)	(14,758)	(2,073)
Contract assets	(511)	2,158	(3,075)
Deferred contract acquisition costs	(20,065)	(12,235)	(8,976)
Prepaid expenses and other current assets	(7,621)	(5,942)	941
Other noncurrent assets	(1,575)	(352)	(1,261)
Accounts payable	(1,328)	4,386	(957)
Accrued expenses and other current liabilities	12,334	6,824	3,982
Deferred revenue	14,610	4,903	5,500
Other noncurrent liabilities	2,462	3,426	688
Net cash provided by (used in) operating activities	(38,917)	(43,281)	3,167
Cash Flows From Investing Activities			
Purchases of property and equipment	(43,289)	(25,466)	(19,031)
Capitalized internal-use software	(13,990)	(9,373)	(3,944)
Cash paid for acquisitions, net of cash acquired	—	—	(250)
Purchases of available-for-sale securities	(537,382)	(145,269)	(47,090)
Sales of available-for-sale securities	1,978	—	—
Maturities of available-for-sale securities	174,998	59,249	79,831
Other investing activities	44	64	28
Net cash provided by (used in) investing activities	(417,641)	(120,795)	9,544
Cash Flows From Financing Activities			
Proceeds from issuance of preferred stock, net of issuance costs	—	149,975	—
Proceeds from initial public offering, net of underwriting discounts and commissions	570,544	—	—
Proceeds from the exercise of stock options	3,058	4,412	1,085
Proceeds from the early exercise of stock options	2,909	14,525	1,675
Repurchases of unvested common stock	(283)	(65)	(16)
Payments on note payable	(255)	(356)	(345)
Payments on related party promissory note payable	—	—	(4,750)
Proceeds from build-to-suit lease financing obligation drawdown	63	130	2,202
Payments of deferred offering costs	(5,268)	—	—
Net cash provided by (used in) financing activities	570,768	168,621	(149)
Net increase in cash, cash equivalents, and restricted cash	114,210	4,545	12,562
Cash, cash equivalents, and restricted cash, beginning of period	31,426	26,881	14,319
Cash, cash equivalents, and restricted cash, end of period	\$ 145,636	\$ 31,426	\$ 26,881
Supplemental Disclosure of Cash Flow Information:			
Cash paid for interest	\$ 786	\$ 786	\$ 812
Cash paid for taxes	\$ 2,391	\$ 2,658	\$ 825
Supplemental Disclosure of Non-cash Investing and Financing Activities:			
Stock-based compensation capitalized for software development	\$ 1,975	\$ 267	\$ 51
Accounts payable and accrued expenses related to property and equipment additions	\$ 3,571	\$ 5,757	\$ 563
Vesting of early exercised stock options	\$ 3,668	\$ 1,415	\$ 455
Deferred offering costs, accrued but not paid	\$ 236	\$ —	\$ —
Conversion of redeemable convertible preferred stock to common stock	\$ 331,521	\$ —	\$ —
Conversion of redeemable convertible preferred stock warrant liability reclassified to additional paid-in capital	\$ 3,135	\$ —	\$ —

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

CLOUDFLARE, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Organization and Basis of Presentation

Organization and Description of Business

Cloudflare, Inc. (the Company, Cloudflare, we, us, or our) has built a global cloud platform that delivers a broad range of network services to businesses of all sizes and geographies, making them more secure, enhancing the performance of their business-critical applications, and eliminating the cost and complexity of managing individual network hardware. Cloudflare provides businesses with a scalable, easy-to-use, unified control plane to deliver security, performance, and reliability across their on-premise, hybrid, cloud, and SaaS applications. The Company was incorporated in Delaware in July 2009. The Company is headquartered in San Francisco, California.

Basis of Presentation and Principles of Consolidation

The accompanying consolidated financial statements and accompanying notes have been prepared in conformity with accounting principles generally accepted in the United States (U.S. GAAP) and include the accounts of the Company and its wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation. The Company's fiscal year ends on December 31.

Initial Public Offering

In September 2019, the Company completed an IPO in which it issued and sold 40,250,000 shares of Class A common stock, which included 5,250,000 shares sold pursuant to the exercise by the underwriters of an option to purchase additional shares, at the public offering price of \$15.00 per share. The Company received net proceeds of \$570.5 million from sales of its shares in the IPO, after deducting underwriting discounts and commissions, but before deducting offering costs of \$5.5 million. The net proceeds included proceeds of \$74.4 million, net of underwriters' discounts and commissions, from the exercise of the underwriters' option to purchase an additional 5,250,000 shares of the Company's Class A common stock. Upon completion of the IPO, 31,381,152 shares of redeemable convertible preferred stock were automatically converted into an equal number of shares of Class A common stock, 134,276,690 shares of redeemable convertible preferred stock were automatically converted into an equal number of shares of Class B common stock, outstanding warrants to purchase shares of redeemable convertible preferred stock were automatically converted into outstanding warrants to purchase shares of Class B common stock, and 15,198,587 shares of Class B common stock held by former employees were automatically converted into an equal number of shares of Class A common stock.

Deferred Offering Costs

Deferred offering costs are capitalized and consist of fees and expenses incurred in connection with the sale of the Company's Class A common stock in the IPO, including the legal, accounting, printing and other IPO-related costs. As of December 31, 2018, the Company had not incurred such costs. During 2019, the Company capitalized \$5.5 million of offering costs. In September 2019, upon completion of the IPO, the Company reclassified \$5.5 million of offering costs into stockholders' equity (deficit) as a reduction of the net proceeds received from the IPO. During the year ended December 31, 2019, the Company paid \$5.3 million of the deferred offering costs.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported and disclosed in the consolidated financial statements and accompanying notes to the consolidated financial statements. Such estimates include, but are not limited to, deferred contract acquisition costs, the period of benefit generated from the Company's deferred contract acquisition costs, the capitalization and estimated useful life of internal-use software, useful lives of property and equipment, the valuation and recognition of stock-based compensation expense, uncertain tax positions, and the recognition and measurement of current and deferred income tax assets and liabilities. Management bases these estimates and assumptions on historical experience and on various other assumptions that are believed to be reasonable. Actual results could differ materially from these estimates.

Note 2. Summary of Significant Accounting Policies

Concentrations of Risks

The Company's revenue is reliant on its customers utilizing Internet-based services. These services can be prone to rapid changes in technology and government regulation. If the Company were unable to keep pace with customers' needs and continue to improve its technological capabilities, or if another firm were to introduce competitive products, or a government jurisdiction were to enact legislation detrimental to the Company's business, such an event or events could adversely affect the Company's operating results.

The Company serves its customers from co-location facilities located in various cities and countries around the world. The Company has internal procedures to restore services in the event of disasters at its current co-location facilities. Even with these procedures for disaster recovery in place, the Company's services could be significantly interrupted during the implementation of restoration procedures.

The Company's financial instruments that are exposed to concentrations of credit risk consist primarily of cash, cash equivalents, available-for-sale securities, and accounts receivable. Although the Company maintains cash deposits, cash equivalent balances, and available-for-sale securities with multiple financial institutions, the deposits, at times, may exceed federally insured limits. Cash and cash equivalents may be withdrawn or redeemed on demand. The Company believes that the financial institutions that hold its cash and cash equivalents are financially sound and, accordingly, minimal credit risk exists with respect to these balances. The Company also maintains investments in U.S. treasury securities, U.S. government agency securities, commercial paper, and corporate bonds that carry high credit ratings and accordingly, minimal credit risk exists with respect to these balances. Cash equivalents consist of money market funds, commercial paper, and corporate bonds which are invested through financial institutions in the United States.

The Company's accounts receivable are derived from net revenue to customers located throughout the world. The Company grants credit to its customers in the normal course of business. For the years ended December 31, 2019, 2018, and 2017, no customer accounted for more than 10% of the Company's revenue. No customer represented 10% or more of accounts receivable, net as of December 31, 2019 and 2018.

Revenue Recognition

In accordance with Accounting Standards Codification (ASC) Topic 606, *Revenue From Contracts With Customers* (ASC 606), revenue is recognized when a customer obtains control of promised services. Refer to Note 3 to these consolidated financial statements for additional information.

Accounts Receivable and Allowance

Accounts receivable are recorded at the invoiced amount and are non-interest bearing. Accounts receivable are stated at their net realizable value, net of a sales allowance and an allowance for doubtful accounts. Credit is extended to customers based on an evaluation of their financial condition and other factors. The Company establishes a sales allowance at the time of revenue recognition based on its history of adjustments and credits provided to customers. In determining the necessary allowance for doubtful accounts, the Company considers the current aging and financial condition of its customers, the amount of receivables in dispute, and current payment patterns. Accounts receivable are written off against the allowance when management determines a balance is uncollectible and the Company no longer actively pursues collection of the receivable. The Company does not have any off-balance-sheet credit exposure related to its customers.

Cost of Revenue

Cost of revenue consists primarily of expenses that are directly related to providing the Company's service to its paying customers. These expenses include expenses related to operating in co-location facilities, network and bandwidth costs, depreciation of the Company's equipment located in co-location facilities, certificate authority services costs for paying customers, related overhead costs, the amortization of the Company's capitalized internal-use software, and the amortization of acquired developed technologies. Cost of revenue also includes employee-related costs, including salaries, bonuses, benefits, and stock-based compensation for employees whose primary responsibilities relate to supporting the Company's paying customers and delivering paid customer support. Other

costs included in cost of revenue include credit card fees related to processing customer transactions and allocated overhead costs.

Research and Development

The Company charges costs related to research, design, and development of products to research and development expense in the consolidated statements of operations as incurred. Research and development expenses support the Company's efforts to add new features to its existing offerings and to ensure the security, performance, and reliability of its global cloud platform. The majority of the Company's research and development expenses result from employee-related costs, including salaries, bonuses and benefits, consulting costs, depreciation of equipment used in research and development, and allocated overhead costs.

Advertising Expense

Advertising costs are charged to sales and marketing expense in the consolidated statements of operations as incurred. Advertising expense for the years ended December 31, 2019, 2018, and 2017 was \$18.8 million, \$10.4 million, and \$5.9 million, respectively.

Stock-based Compensation

The Company measures and recognizes stock-based compensation expense based on the grant date fair value of the awards. The grant date fair value of stock options is estimated using the Black-Scholes option pricing model. The grant date fair value of restricted stock units (RSUs) is estimated based on the fair value of the Company's underlying common stock. The grant date fair value and the stock-based compensation expense related to purchase rights issued under the 2019 Employee Stock Purchase Plan (ESPP) is estimated using the Black-Scholes option pricing model and is based on the estimated number of awards as of the beginning of the offering period, respectively.

The Black-Scholes option pricing model requires the use of highly subjective assumptions, including the award's expected term, the fair value of the underlying common stock, the expected volatility of the price of the common stock, risk-free interest rates, and the expected dividend yield of the common stock. The assumptions used to determine the fair value of the stock-based awards are management's best estimates and involve inherent uncertainties and the application of judgment. The expected term represents the period that the Company's stock-based awards are expected to be outstanding. As the Company does not have sufficient historical experience for determining the expected term of the stock option awards granted, it has based its expected term on the simplified method available under U.S. GAAP. Stock-based compensation expense for awards with service-based vesting only is recognized on a straight-line basis over the requisite service period of the awards, which is generally four years. The Company accounts for forfeitures as they occur.

Prior to the IPO, the fair value of the Company's common stock for financial reporting purposes was determined considering numerous objective and subjective factors and required judgment to determine the fair value of common stock as of each grant date. Subsequent to the IPO, the Company determines the fair value using the market closing price of its Class A common stock on the date of grant.

The Company granted qualified event options (QE Options) and qualified event restricted stock units (QE RSUs) to employees and contractors which vest on the satisfaction of both a service-based condition and a performance condition. For QE Options, the performance condition was deemed satisfied upon the Company's Class A common stock being listed on a public exchange. For QE Options, the service-based condition is satisfied by rendering service from the date of grant through the qualifying event, as well as a four-year vesting period commencing with the qualifying event. For QE RSUs, the performance condition was deemed satisfied upon the effective date of the Company's registration statement on Form S-1 filed with the SEC in connection with the IPO. The QE RSUs have a service-based vesting condition satisfied over a four-year vesting period. Awards which contain both service-based and performance conditions are recognized using the accelerated attribution method once the performance condition is probable of occurring. The listing of equity securities event and effectiveness of a registration statement event are not deemed probable until consummated. In connection with the Company's IPO, the Company recognized \$21.0 million of cumulative stock-based compensation expense for the QE Options for the service period rendered from the date of grant through the equity securities listing date and for the QE RSUs that vested in connection with the effective date of the Company's registration statement on Form S-1 and began recording the remaining unrecognized stock-based compensation expense over the remainder of the requisite service period.

Income Taxes

The Company accounts for income taxes using the asset and liability method. Deferred income taxes are recognized by applying the enacted statutory tax rates applicable to future years to differences between the carrying amounts of existing assets and liabilities and their respective tax bases and net operating loss and tax credit carryforwards. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in the period that includes the enactment date. The measurement of deferred tax assets is reduced, if necessary, by a valuation allowance to amounts that are more likely than not to be realized.

The Company recognizes tax benefits from uncertain tax positions only if it believes that it is more likely than not that the tax position will be sustained on examination by the taxing authorities based on the technical merits of the position.

Foreign Currency Remeasurement

The Company's functional currency of its foreign subsidiaries is the U.S. dollar. The monetary assets and liabilities that are denominated in a currency other than the U.S. dollar of the Company's foreign subsidiaries are remeasured into U.S. dollars at the exchange rate on the balance sheet date, while nonmonetary items are remeasured at historical rates. Revenue and expenses are remeasured at average exchange rates during the period. Transaction gains and losses that arise from exchange rate fluctuations on transactions denominated in a currency other than the functional currency are included in other income (expense), net in the consolidated statements of operations. The Company recognized remeasurement losses of \$0.2 million and \$0.3 million for the years ended December 31, 2019 and 2018, respectively and a remeasurement gain of \$0.2 million for the year ended December 31, 2017.

Cash and Cash Equivalents

Cash and cash equivalents consist of highly liquid investments with an original maturity from the date of purchase of 90 days or less.

Available-for-sale securities

The Company's available-for-sale securities consist of U.S. treasury securities, U.S. government agency securities, commercial paper, and corporate bonds. The Company has designated all securities held by it as available-for-sale and therefore, such securities are reported at fair value, with unrealized gains and losses recorded in accumulated other comprehensive loss on the consolidated balance sheets. For securities sold prior to maturity, the cost of securities sold is based on the specific identification method. Realized gains and losses on the sale of available-for-sale securities are recorded in other income (expense), net in the consolidated statements of operations. Historically, securities with original maturities greater than three months and remaining maturities less than one year were classified as marketable securities; and securities with remaining maturities greater than one year were classified as long-term investments. Effective as of December 31, 2019, all securities are classified within current assets as such securities can be liquidated to fund current operations without penalty.

Other-than-temporary impairment

All of the Company's investments are subject to a periodic impairment review. The Company recognizes an impairment charge when a decline in the fair value of its investments below the cost basis is determined to be other-than-temporary. Factors considered in determining whether a loss is temporary include the extent and length of time the investment's fair value has been lower than its cost basis, the financial condition and near-term prospects of the investee, the extent of the loss related to credit of the issuer, the expected cash flows from the security, the Company's intent to sell the security, and whether or not the Company will be required to sell the security prior to the expected recovery of the investment's amortized cost basis. No such impairment charges were recorded during the years ended December 31, 2019, 2018, and 2017.

Fair Value Measurements

The carrying value of the Company's financial instruments, including cash equivalents, available-for-sale securities, accounts receivable, accounts payable, and accrued expenses, approximates fair value due to their short-term nature.

Property and Equipment

Property and equipment are stated at cost, net of accumulated depreciation. Depreciation is computed on a straight-line basis over the estimated useful lives of the assets, which is generally as follows:

	Useful Lives
Servers—network infrastructure	4 years
Buildings	30 years
Office and computer equipment	2 years
Office furniture	3 years
Software	3 years
Leasehold improvements	Lesser of useful life or term of lease
Asset retirement obligation	Lesser of useful life or term of lease

Expenditures for maintenance and repairs are expensed as incurred.

Build-to-Suit Leases

The Company capitalizes construction in progress and records a corresponding long-term liability for build-to-suit lease agreements where the Company is considered the accounting owner during the construction period. For the building under build-to-suit lease arrangements where the Company has taken occupancy, the Company determined that it continued to be the deemed owner of this building. This is principally due to the Company's significant investment in tenant improvements. As a result, the building is being depreciated over the useful life. At occupancy, the long-term construction obligations are considered long-term finance lease obligations. Assets capitalized under build-to-suit leases were \$13.0 million as of December 31, 2019 and 2018. Depreciation expense for these assets was \$0.4 million for the years ended December 31, 2019, 2018, and 2017.

Capitalized Internal-Use Software Development Costs

Certain development costs related to the Company's global cloud platform during the application development stage are capitalized. Costs incurred in the preliminary stages of development are analogous to research and development activities and are expensed as incurred. The preliminary stage includes such activities as conceptual formulation of alternatives, evaluation of alternatives, determination of existence of needed technology, and final selection of alternatives. Once the application development stage is reached, internal and external costs are capitalized until the software is substantially complete and ready for its intended use. Capitalized costs are recorded as part of property and equipment, net. Capitalized internal-use software is amortized on a straight-line basis over its estimated useful life, which is generally three years, and is recorded as cost of revenue in the consolidated statements of operations. Capitalization of costs associated with the development of software for internal-use totaled \$16.0 million, \$9.6 million, and \$4.0 million for the years ended December 31, 2019, 2018, and 2017, respectively. Amortization expense for capitalized internal-use software totaled \$6.7 million, \$3.3 million, and \$1.0 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Business Combinations

The Company includes the results of operations of the businesses that the Company acquires from the date of acquisition. The fair value of the assets acquired and liabilities assumed is based on their estimated fair values as of the respective date of acquisition. The excess purchase price over the fair value of the net assets acquired and liabilities assumed is recorded as goodwill. Determining the fair value of assets acquired and liabilities assumed requires significant judgment and estimates including the selection of valuation methodologies, future expected cash flows, discount rates, and useful lives. The Company's estimates of fair value are based on assumptions believed to be reasonable, but which are inherently uncertain and, as a result, actual results may differ from

estimates. During the measurement period, not to exceed one year from the date of acquisition, the Company may record adjustments to the assets acquired and liabilities assumed with a corresponding offset to goodwill. At the conclusion of the measurement period, or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are reflected in the consolidated statements of operations.

When the Company issues payments or grants of equity to selling stockholders in connection with an acquisition, the Company evaluates whether the payments or awards are compensatory. This evaluation includes whether cash payments or stock award vesting is contingent on the continued employment of the selling stockholder beyond the acquisition date. If continued employment is required for the cash to be paid or stock awards to vest, the award is treated as compensation for post-acquisition services and is recognized as compensation expense.

Transaction costs associated with business combinations are expensed as incurred, and are included in general and administrative expense in the Company's consolidated statements of operations.

Goodwill and Intangible Assets

Goodwill represents the excess of the purchase price of an acquired business over the fair value of the net tangible and identifiable intangible assets acquired. The carrying amount of goodwill is reviewed for impairment at least annually, in the fourth quarter, or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. At December 31, 2019 and 2018, the Company had a single operating segment and reporting unit structure. As part of the annual goodwill impairment test, the Company first performs a qualitative assessment to determine whether further impairment testing is necessary. If, as a result of the qualitative assessment, it is more likely than not that the fair value of the reporting unit is less than its carrying amount, the quantitative impairment test will be required. If the Company has determined it necessary to perform a quantitative impairment assessment, the Company will compare the fair value of the reporting unit with its carrying amount and recognize an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value, limited to the total amount of goodwill of the reporting unit. The Company did not recognize any goodwill impairment charges for any of the periods presented.

Intangible assets are carried at cost, net of accumulated amortization. Intangible assets are amortized on a straight-line basis over their estimated useful lives. The Company estimates the useful life by estimating the expected period of economic benefit. The estimated useful life of the Company's acquired developed technology intangible assets is two years.

Indefinite lived intangibles are assessed annually for impairment, which includes an assessment of whether there were any triggering events that required an impairment assessment of the Company's definite lived intangible assets, and whether it was more likely than not that the Company's indefinite lived intangible asset was impaired. The Company's indefinite lived intangible asset arose from an asset acquisition in November 2017. As a result of acquiring assets the Company recognized \$0.3 million of in-process research and development. The Company began amortizing the in-process research and development as developed technology in 2018. The Company performed an evaluation for impairment and determined there was no impairment for the years ended December 31, 2019, 2018, and 2017.

Impairment of Long-Lived Assets

The Company evaluates long-lived assets, which include depreciable tangible assets, for impairment whenever events or changes in circumstances indicate that the carrying value of long-lived assets may not be recoverable. The recoverability of these assets is measured by comparing the carrying amounts to the future undiscounted cash flows these assets are expected to generate. The Company recognizes an impairment in the event the carrying amount of such assets exceeds the fair value attributable to such assets. There were no events or changes in circumstances that indicated the long-lived assets were impaired during any of the periods presented.

Operating Leases

The Company recognizes rent expense on a straight-line basis over the non-cancelable term of the operating lease. The difference between rent expense and rent paid is recorded as deferred rent in accrued expenses and other current liabilities and other noncurrent liabilities on the consolidated balance sheets.

Legal Contingencies

The Company accrues a liability for an estimated loss for legal contingencies if the potential loss from any claim or legal proceeding is considered probable, and the amount can be reasonably estimated. The Company believes there are no legal proceedings pending that could have, individually or in the aggregate, a material adverse effect on its results of operations or financial condition.

Redeemable Convertible Preferred Stock Warrant Liability

Warrants to purchase shares of the Company's redeemable convertible preferred stock were classified as noncurrent liabilities on the consolidated balance sheets at fair value upon issuance because the underlying shares of redeemable convertible preferred stock were redeemable at the option of the holders upon the occurrence of certain deemed liquidation events considered not solely within the Company's control. The warrants were subject to remeasurement to fair value at each balance sheet date and any change in fair value was recognized as a component of other income (expense), net, in the consolidated statements of operations.

Net Loss per Share Attributable to Common Stockholders

Basic and diluted net loss per share attributable to common stockholders is presented in conformity with the two-class method required for multiple classes of common stock and participating securities. The Company considers its previously outstanding redeemable convertible preferred stock to be participating securities. The Company also considers any shares issued on the early exercise of stock options subject to repurchase to be participating securities because holders of such shares have nonforfeitable dividend rights in the event a dividend is paid on common stock. Under the two-class method, net income is attributed to common stockholders and participating securities based on their participation rights. The holders of the redeemable convertible preferred stock, as well as the holders of early exercised shares subject to repurchase, do not have a contractual obligation to share in the losses of the Company. As such, the Company's net losses for the years ended December 31, 2019, 2018, and 2017 were not allocated to these participating securities. The rights, including the liquidation and dividend rights, of the Class A common stock and Class B common stock are substantially identical, other than voting rights. Accordingly, the Class A common stock and Class B common stock shared proportionately in the Company's net losses. Prior to the completion of the IPO, there were no shares of Class A common stock issued and outstanding.

Under the two-class method, basic net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period, less shares subject to repurchase. Vested RSUs that have not been settled have been included in the appropriate common share class used to calculate basic net loss per share.

Diluted net loss per share attributable to common stockholders adjusts basic net loss per share for the effect of dilutive securities, including awards under the Company's equity incentive plans. As the Company has reported losses for all periods presented, all potentially dilutive securities are antidilutive and accordingly, basic net loss per share equals diluted net loss per share.

Upon completion of the IPO, all shares of redeemable convertible preferred stock then outstanding were automatically converted into an equivalent number of shares of common stock on a one-to-one basis and their carrying amount reclassified into stockholders' equity (deficit). As of December 31, 2019, there were no shares of redeemable convertible preferred stock issued and outstanding.

Segment and Geographic Information

The Company has one reportable and operating segment. Financial information about the Company's operating segment and geographic areas is presented in Note 14 to these consolidated financial statements.

Recent Accounting Pronouncements

Recently Adopted Accounting Pronouncements

In July 2017, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2017-11, *Earnings Per Share (Topic 260); Distinguishing Liabilities from Equity (Topic 480); Derivatives and Hedging (Topic 815): (Part I) Accounting for Certain Financial Instruments with Down Round Features, (Part II) Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic*

Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception. This ASU reduces the complexity associated with an issuer's accounting for certain financial instruments with characteristics of liabilities and equity. Specifically, the FASB determined that a down round feature would no longer cause a freestanding equity-linked financial instrument (or an embedded conversion option) to be accounted for as a derivative liability at fair value with changes in fair value recognized in current earnings. For public business entities, it is effective for fiscal years beginning after December 15, 2018, and interim periods therein. For all other entities, it is effective for fiscal years beginning after December 15, 2019, and interim periods within fiscal years beginning after December 15, 2019. Early adoption is permitted. The Company adopted this guidance effective September 30, 2019 using the prospective approach. The adoption of ASU 2017-11 did not have a material impact on the consolidated financial statements.

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement—Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which provides financial statement preparers with an option to reclassify stranded tax effects within accumulated other comprehensive income to retained earnings in each period in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act (or portion thereof) is recorded. For all entities, it is effective for fiscal years beginning after December 15, 2018, and interim periods therein. Early adoption is permitted. The amendments in this ASU should be applied either in the period of adoption or retrospectively to each period (or periods) in which the effect of the change in the U.S. federal corporate income tax rate in the Tax Cuts and Jobs Act is recognized. The Company adopted this ASU effective January 1, 2019, noting no material impact on the Company's consolidated financial statements.

Recently Issued Accounting Pronouncements

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, and since that date, has issued several ASUs to further clarify certain aspects of ASU 2016-02 and provide entities with practical expedients that may be elected upon adoption. ASU 2016-02 introduces the recognition of right-of-use assets and lease liabilities by lessees for all leases on the consolidated balance sheets. For the consolidated statements of operations, the ASU retains the distinction between finance leases and operating leases, with the classification criteria for distinguishing between finance leases and operating leases are substantially similar to the previous lease guidance. During the transition period for this ASU, lessees and lessors are required to recognize and measure leases at either the beginning of the earliest period presented using a modified retrospective approach, or at the adoption date recognizing the cumulative effect adjustment to the opening balance of retained earnings in the period of adoption. The effective date and transition requirements of ASU 2016-02, for public business entities, is interim and annual periods beginning on or after December 15, 2018, with early adoption permitted. For all other entities, ASU 2016-02 is effective for annual periods beginning on or after December 15, 2019, and interim periods within annual periods beginning after December 15, 2020. Early adoption is permitted. The Company intends to adopt the ASU beginning January 1, 2020, and has elected to apply the alternate transition method by recording a cumulative-effect adjustment to the opening balance of retained earnings (accumulated deficit) in the period of adoption. Under the new standard, lessees will be required to record a right-of-use asset and liability for all leases, with certain exceptions, on their balance sheets. The Company is currently evaluating its lease portfolio and expects the adoption of this standard to have a material impact on its consolidated balance sheet.

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (ASC 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement*. This guidance provides that implementation costs be evaluated for capitalization using the same criteria as that used for internal-use software development costs, with amortization expense being recorded in the same income statement expense line as the hosted service costs and over the expected term of the hosting arrangement. For public business entities, it is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. For all other entities, it is effective for fiscal years beginning after December 15, 2020, and interim periods beginning after December 15, 2021. Early adoption of the amendments in this update is permitted, including adoption in any interim period, for all entities. The Company is currently evaluating the potential impact of this ASU on its consolidated financial statements.

In November 2019, the FASB issued ASU 2019-10, *Financial Instruments—Credit Losses (Topic 326), Derivatives and Hedging (Topic 815), and Leases (Topic 842)*. This ASU revises, and staggers, the effective dates for various major updates that have been issued since 2014 to alleviate the burden on both larger public companies as well as private companies, smaller public companies, not-for-profit organizations, and employee benefit plans. Most notably, the amendments for Topic 326 are now effective for the Company beginning January 1, 2020. The

Company is currently evaluating the impact of this ASU on its consolidated financial statements, which is not expected to be material.

In December 2019, the FASB issued ASU 2019-12 (ASC Topic 740), *Simplifying the Accounting for Income Taxes*. This ASU simplifies accounting for income taxes by removing certain exceptions to the general principles and amending existing guidance to improve consistent application. The amendments in this update are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption of the amendments is permitted, including adoption in any interim period for which financial statements have not yet been issued. The Company is in the process of evaluating the impact, if any, of this ASU on its consolidated financial statements.

Note 3. Revenue

Revenue Recognition

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

1. Identify the contract with a customer

The Company considers the terms and conditions of the contracts and its customary business practices in identifying its contracts under ASC 606. The Company determines it has a contract with a customer when the contract is approved, the Company can identify each party's rights regarding the services to be transferred, the Company can identify the payment terms, the Company has determined that collectibility is probable, and the contract has commercial substance. The Company applies judgment in determining that collectibility is probable, which is based on a variety of factors, including the customer's historical payment experience or, in the case of a new customer, credit and financial information relevant to the customer.

2. Identify the performance obligations in the contract

Performance obligations promised in a contract are identified based on the services that will be transferred to the customer that are both capable of being distinct, whereby the customer can benefit from the service either on its own or together with other resources that are readily available to the Company, and are distinct in the context of the contract, whereby the transfer of the services is separately identifiable from other promises in the contract. The Company's performance obligation primarily consists of subscription and support services, as they are provided over the same service period.

3. Determine the transaction price

The transaction price is determined based on the consideration to which the Company expects to be entitled in exchange for transferring services to the customer. Usage-based variable consideration is recognized in the period it is incurred. None of the Company's contracts contain a significant financing component.

4. Allocate the transaction price to performance obligations in the contract

The subscription and support services in the Company's contracts are considered a single performance obligation, and thus the entire transaction price is allocated to the single performance obligation.

5. Recognize revenue when or as the Company satisfies a performance obligation

Revenue is recognized at the time the related performance obligation is satisfied by transferring the service to a customer. Revenue is recognized when control of the services is transferred to the Company's customers, in an amount that reflects the consideration that the Company expects to be entitled to receive in exchange for those services.

The Company generates sales directly through its sales team and through its channel partners. Revenue from sales to channel partners are recorded once all revenue recognition criteria above are met. Channel partners generally receive an order from an end-customer prior to placing an order with the Company. Payment from channel partners is not contingent on the partner's collection from end-customers. The Company has determined that it is acting as an agent in these arrangements and records this revenue on a net basis.

Subscription and Support Revenue

The Company generates revenue primarily from sales to its customers of subscriptions to access its platform, together with related support services. Arrangements with customers generally do not provide the customer with the right to take possession of the Company's software operating its global cloud platform at any time. Instead, customers are granted continuous access to the Company's global cloud platform over the contractual period. Access to the Company's platform and products is considered a monthly series comprising one performance obligation. A time-elapsed output method is used to measure progress because the Company transfers control evenly over the contractual period. Accordingly, the fixed consideration related to subscription and support revenue is generally recognized on a straight-line basis over the contract term beginning on the date that the Company's service is made available to the customer. Usage-based consideration is primarily related to fees charged for the Company's customer's use of excess bandwidth when accessing the Company's platform in a given period and is recognized as revenue in the period in which the usage occurs.

The typical subscription and support term for the Company's contracted customers, which consist of customers that enter into contracts for the Company's Enterprise subscription plan (and which the Company previously referred to as enterprise customers), is one year and subscription and support term lengths range from one to three years. Most of the Company's contracts with contracted customers are non-cancelable over the contractual term. Customers typically have the right to terminate their contracts for cause if the Company fails to perform in accordance with the contractual terms. For the Company's pay-as-you-go customers, which consist of customers that sign up for the Company's Pro or Business subscription plans through the Company's website (and which the Company previously referred to as self-serve customers), subscription and support terms are typically monthly.

Variable Consideration

If the Company's services do not meet certain service level commitments, its customers are entitled to receive service credits, and in certain cases, refunds, each representing a form of variable consideration. Revenue from sales is recorded at the net sales price, which is the transaction price, and includes estimates of these forms of variable consideration to the extent that a significant reversal of cumulative revenue will not occur in a future period. The Company has historically not experienced any incidents that had a material impact on its consolidated financial statements. Accordingly, any estimated refunds related to these agreements in the consolidated financial statements are not material during the periods presented. Usage-based consideration is primarily related to fees charged for the Company's customer's use of excess bandwidth when accessing the Company's platform in a given period and is recognized as revenue in the period in which the usage occurs.

Disaggregation of Revenue

Subscription and support revenue is recognized over time and accounted for substantially all of the Company's revenue for the years ended December 31, 2019, 2018, and 2017.

The following table summarizes the revenue by region based on the billing address of customers who have contracted to use the Company's global cloud platform:

	Year Ended December 31,					
	2019		2018		2017	
	Amount	Percentage of Revenue	Amount	Percentage of Revenue	Amount	Percentage of Revenue
	(in thousands)					
United States	\$ 144,575	50 %	\$ 92,652	48 %	\$ 64,940	48 %
Europe, Middle East, and Africa	68,418	24 %	48,438	25 %	31,882	24 %
Asia Pacific	42,253	15 %	26,305	14 %	15,465	11 %
China	12,878	4 %	12,546	6 %	14,425	11 %
Other	18,898	7 %	12,733	7 %	8,203	6 %
Total	\$ 287,022	100 %	\$ 192,674	100 %	\$ 134,915	100 %

The following table summarizes the revenue from contracts by type of customer:

	Year Ended December 31,					
	2019		2018		2017	
	(in thousands)					
	Amount	Percentage of Revenue	Amount	Percentage of Revenue	Amount	Percentage of Revenue
Channel partners	\$ 26,496	9 %	\$ 13,231	7 %	\$ 7,849	6 %
Direct customers	260,526	91 %	179,443	93 %	127,066	94 %
Total	\$ 287,022	100 %	\$ 192,674	100 %	\$ 134,915	100 %

Contract Balances

Contract liabilities consist of deferred revenue and include payments received in advance of performance under the contract. Such amounts are recognized as revenue over the contractual period. For the years ended December 31, 2019, 2018, and 2017 the Company recognized revenue of \$16.8 million, \$11.9 million, and \$6.6 million, respectively, that was included in the corresponding contract liability balance at the beginning of the periods presented.

The Company receives payments from customers based upon contractual billing schedules; accounts receivable are recorded when the right to consideration becomes unconditional. Standard payment terms are due upon receipt. Contract assets include amounts related to the Company's contractual right to consideration for both completed and partially completed performance obligations that have not been invoiced.

Costs to Obtain and Fulfill a Contract

The Company capitalizes sales commission and associated payroll taxes paid to internal sales personnel that are incremental to the acquisition of channel partner and direct customer contracts. These costs are recorded as deferred contract acquisition costs on the consolidated balance sheets. The Company determines whether costs should be deferred based on its sales compensation plans, if the commissions are in fact incremental and would not have occurred absent the customer contract.

Sales commissions for renewal of a contract are not considered commensurate with the commissions paid for the acquisition of the initial contract. Commissions paid upon the initial acquisition of a contract are amortized over an estimated period of benefit of three years while commissions paid for renewal contracts are amortized over the contractual term of the renewals. Amortization of deferred contract acquisition costs is recognized on a straight-line basis commensurate with the pattern of revenue recognition and included in sales and marketing expense in the consolidated statements of operations. The Company determines the period of benefit for commissions paid for the acquisition of the initial contract by taking into consideration the expected subscription term and expected renewals of its customer contracts, the duration of its relationships with its customers, customer retention data, its technology development lifecycle, and other factors. The Company periodically reviews the carrying amount of deferred contract acquisition costs to determine whether events or changes in circumstances have occurred that could impact the period of benefit of these deferred costs. The Company did not recognize any impairment losses of deferred contract acquisition costs during the periods presented.

The following table summarizes the activity of the deferred contract acquisition costs:

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Beginning balance	\$ 15,940	\$ 10,765	\$ 5,744
Capitalization of contract acquisition costs	20,065	12,235	8,976
Amortization of deferred contract acquisition costs	(10,821)	(7,060)	(3,955)
Ending balance	\$ 25,184	\$ 15,940	\$ 10,765

Remaining Performance Obligations

As of December 31, 2019, the aggregate amount of the transaction price allocated to remaining performance obligations was \$219.2 million. As of December 31, 2019, the Company expected to recognize 82% of its remaining performance obligations as revenue over the next 12 months and 18% of its remaining performance obligations as revenue over the next three years.

Nonmonetary Transactions

From time to time, the Company enters into nonmonetary arrangements. In the years ended December 31, 2019 and 2018, the Company did not participate in any significant nonmonetary transactions. In the year ended December 31, 2017, the Company participated in nonmonetary transactions with three of its customers in exchange for those customers agreeing to become vendors providing services to the Company. In accordance with ASC 606, at contract inception, the Company measures and records the transaction price for nonmonetary transactions that meet certain criteria at the estimated fair value of the non-cash consideration received from the customer; if the Company cannot reasonably estimate the fair value of the non-cash consideration, the Company will measure the consideration indirectly by reference to the standalone selling price of the goods or services promised to the customer in exchange for the consideration. Services delivered to the Company and provided by the Company are recognized as the services or capacity is delivered, which also may require estimates. The estimated fair value of the services was derived from internal margin metrics and third-party comparable pricing. Nonmonetary transaction revenue was \$7.0 million for the year ended December 31, 2017. Nonmonetary transaction expense, recognized as a component of cost of revenue and of sales and marketing expense in the consolidated statements of operations, was \$7.0 million for the year ended December 31, 2017. The Company concluded that one of the three arrangements was not in scope of ASC 606 and could not be recognized at fair value as the transaction did not have commercial substance. There were no significant exchanges of services under that contract during the periods presented.

Note 4. Fair Value Measurements

Fair value is defined as the exchange price that would be received from sale of an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date.

Assets and liabilities measured at fair value are classified into the following categories:

- Level I: Observable inputs are unadjusted quoted prices in active markets for identical assets or liabilities;
- Level II: Observable inputs are quoted prices for similar assets and liabilities in active markets or inputs other than quoted prices that are observable for the assets or liabilities, either directly or indirectly through market corroboration, for substantially the full term of the financial instruments; and
- Level III: Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. These inputs are based on the Company's own assumptions used to measure assets and liabilities at fair value and require significant management judgment or estimation.

The Company's cash equivalents are comprised of highly liquid money market funds, U.S. government agency securities, and commercial paper. The Company classifies money market funds within Level I of the fair value hierarchy because they are valued based on quoted market prices in active markets. The Company classifies its investments, which are comprised of U.S. treasury securities, U.S. government agency securities, commercial paper, and corporate bonds, within Level II of the fair value hierarchy because the fair value of these securities is priced by using inputs based on non-binding market consensus prices that are primarily corroborated by observable market data or quoted market prices for similar instruments. The Company recognizes transfers between levels within the fair value hierarchy, if any, at the end of each period. There were no transfers between levels during the periods presented.

The following table summarizes the Company's cash and available-for-sale securities' amortized cost, unrealized gains (losses), and fair value by significant investment category reported as cash and cash equivalents, restricted cash, or available-for-sale securities as of December 31, 2019 and 2018.

(in thousands)

December 31, 2019	Amortized Cost	Unrealized Gain	Unrealized (Loss)	Fair Value	Reported as:		
					Cash & Cash Equivalents	Available-for-sale Securities	Long-term Restricted Cash
Cash	\$ 24,631	\$ —	\$ —	\$ 24,631	\$ 24,631	\$ —	\$ —
Level I:							
Money market funds	32,856	—	—	32,856	26,196	—	6,660
Level II:							
Corporate bonds	84,054	22	(30)	84,046	—	84,046	—
U.S. treasury securities	311,083	151	(23)	311,211	—	311,211	—
U.S. government agency securities	95,380	17	—	95,397	22,549	72,848	—
Commercial paper	95,467	—	—	95,467	65,600	29,867	—
Subtotal	585,984	190	(53)	586,121	88,149	497,972	—
Total assets measured at fair value on a recurring basis	\$ 643,471	\$ 190	\$ (53)	\$ 643,608	\$ 138,976	\$ 497,972	\$ 6,660

(in thousands)

December 31, 2018	Amortized Cost	Unrealized Gain	Unrealized (Loss)	Fair Value	Reported as:		
					Cash & Cash Equivalents	Available-for-sale Securities	Long-term Restricted Cash
Cash	\$ 4,151	\$ —	\$ —	\$ 4,151	\$ 4,151	\$ —	\$ —
Level I:							
Money market funds	23,278	—	—	23,278	16,907	—	6,371
Level II:							
Corporate bonds	17,291	1	(16)	17,276	—	17,276	—
U.S. treasury securities	102,360	8	(20)	102,348	—	102,348	—
U.S. government agency securities	1,099	—	—	1,099	—	1,099	—
Commercial paper	18,876	—	—	18,876	3,997	14,879	—
Subtotal	139,626	9	(36)	139,599	3,997	135,602	—
Total assets measured at fair value on a recurring basis	\$ 167,055	\$ 9	\$ (36)	\$ 167,028	\$ 25,055	\$ 135,602	\$ 6,371

The aggregate fair value of the Company's money market funds approximated amortized cost and, as such, there were no unrealized gains or losses on money market funds as of December 31, 2019 and 2018. Realized gains and losses, net of tax, were not material for any of the periods presented.

The amortized cost of available-for-sale investments with maturities less than one year was \$450.2 million and \$135.6 million as of December 31, 2019 and 2018, respectively. The amortized cost of available-for-sale investments with maturities greater than one year was \$47.7 million and zero as of December 31, 2019 and 2018, respectively.

As of December 31, 2019, net unrealized gains on investments were \$0.1 million net of tax and were included in accumulated other comprehensive income (loss) on the consolidated balance sheets. As of December 31, 2018, net unrealized losses on investments were \$0.1 million net of tax and were included in accumulated other comprehensive income (loss) on the consolidated balance sheets. The unrealized gains and losses on available-for-sale investments are related to U.S. treasury securities, U.S. government agency securities, and corporate bonds. The Company determined these unrealized losses to be temporary. Factors considered in determining whether a loss is temporary include the length of time and extent to which the investment's fair value has been less than the

cost basis, the financial condition and near-term prospects of the investee, the extent of the loss related to the credit of the issuer, the expected cash flows from the security, the Company's intent to sell the security, and whether or not the Company will be required to sell the security before the recovery of its amortized cost.

The Company classifies financial instruments in Level III of the fair value hierarchy when there is reliance on at least one significant unobservable input to the valuation model. In addition to these unobservable inputs, the valuation models for Level III financial instruments typically also rely on a number of inputs that are readily observable, either directly or indirectly. The Company's assessment of the significance of a particular input to the fair value measurement in its entirety requires management to make judgments and consider factors specific to the asset or liability. The gains and losses presented below include changes in the fair value related to both observable and unobservable inputs. Prior to the IPO, the Company's only Level III financial instruments were its redeemable convertible preferred stock warrants. Upon the completion of the IPO, the warrant to purchase shares of Series B redeemable convertible preferred stock was converted into a warrant to purchase shares of Class B common stock. As a result, the warrant liability was remeasured and reclassified to additional paid-in capital within stockholders' equity (deficit).

The following tables summarize the Company's redeemable convertible preferred stock warrant liability measured and recorded at fair value as of December 31, 2019 and 2018:

	December 31, 2019	
	Fair Value	Reported as Long-Term Liability
	(in thousands)	
Fair value using Level III inputs		
Redeemable convertible preferred stock warrant liability	\$ 3,135	\$ 3,135
Reclassification to stockholders' equity (deficit)	(3,135)	(3,135)
Balance as of December 31, 2019	<u>\$ —</u>	<u>\$ —</u>

	December 31, 2018	
	Fair Value	Reported as Long-Term Liability
	(in thousands)	
Fair value using Level III inputs		
Redeemable convertible preferred stock warrant liability	\$ 1,618	\$ 1,618
Balance as of December 31, 2018	<u>\$ 1,618</u>	<u>\$ 1,618</u>

	Redeemable Convertible Preferred Stock Warrant Liability
	(in thousands)
Fair value using Level III inputs	
Balance as of December 31, 2016	\$ 348
Addition	—
Change in fair value	50
Balance as of December 31, 2017	398
Addition	—
Change in fair value	1,220
Balance as of December 31, 2018	1,618
Addition	—
Change in fair value	1,517
Conversion of redeemable convertible preferred stock warrants into Class B common stock warrants	(3,135)
Balance as of December 31, 2019	\$ —

Refer to Note 8 to these consolidated financial statements for further information on the redeemable convertible preferred stock warrants, including the assumptions used to determine their fair value and further information on the exercise of such warrants in the year ended December 31, 2019.

Note 5. Balance Sheet Components

Accounts Receivable, Net

Accounts receivable are recorded at the invoiced amount and are non-interest bearing. Accounts receivable are stated at their net realizable value, net of a sales allowance and an allowance for doubtful accounts.

Activity in the allowance for doubtful accounts was as follows:

	December 31,	
	2019	2018
	(in thousands)	
Beginning balance	\$ 160	\$ —
Provision for bad debt	2,488	1,080
Write-off of uncollectible accounts receivable	(2,115)	(920)
Ending balance	\$ 533	\$ 160

There was no bad debt expense or write-off of uncollectible accounts receivable for the year ended December 31, 2017.

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following:

	December 31,	
	2019	2018
	(in thousands)	
Prepaid expenses	\$ 10,913	\$ 5,581
Deposits	2,773	2,635
Other	3,308	1,157
Total prepaid expenses and other current assets	<u>\$ 16,994</u>	<u>\$ 9,373</u>

Property and Equipment, Net

Property and equipment, net consisted of the following:

	December 31,	
	2019	2018
	(in thousands)	
Property and equipment:		
Servers—network infrastructure	\$ 84,979	\$ 57,089
Buildings	13,035	13,035
Construction in progress	8,692	14,848
Capitalized internal-use software	31,171	16,344
Office and computer equipment	13,528	6,552
Office furniture	6,124	3,573
Software	1,025	847
Leasehold improvements	9,870	772
Asset retirement obligation	231	49
Gross property and equipment	<u>168,655</u>	<u>113,109</u>
Less accumulated depreciation and amortization	(67,189)	(39,899)
Total property and equipment, net	<u>\$ 101,466</u>	<u>\$ 73,210</u>

Depreciation and amortization expense on property and equipment for the years ended December 31, 2019, 2018, and 2017 was \$29.4 million, \$18.4 million, and \$11.7 million, respectively.

Acquired Intangible Assets, Net

Acquired intangible assets, net consisted of the following:

	December 31, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value
	(in thousands)		
Developed technology	\$ 250	\$ 219	\$ 31
Total acquired intangible assets, net	<u>\$ 250</u>	<u>\$ 219</u>	<u>\$ 31</u>

	December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value
	(in thousands)		
Developed technology	\$ 250	\$ 94	\$ 156
Total acquired intangible assets, net	<u>\$ 250</u>	<u>\$ 94</u>	<u>\$ 156</u>

The Company recorded, at the time of the acquisition, acquired in-process research and development for projects in progress that had not yet reached technological feasibility. The Company began amortizing the in-process research and development as developed technology in 2018 using the straight-line method over its estimated useful life.

Amortization of acquired intangible assets for the years ended December 31, 2019, 2018, and 2017 was \$0.1 million, \$0.5 million, and \$0.5 million, respectively.

As of December 31, 2019, the estimated future amortization expense of acquired intangible assets was as follows:

	Estimated Amortization	
	(in thousands)	
Year ending December 31, 2020	\$	31
Total	\$	31

Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following:

	December 31,	
	2019	2018
	(in thousands)	
Accrued compensation and benefits	\$ 14,970	\$ 7,075
Accrued expenses	5,331	4,072
Customer refunds and credits	3,328	2,336
Accrued co-location and bandwidth	2,696	1,119
Other	1,989	1,097
Total accrued expenses and other current liabilities	\$ 28,314	\$ 15,699

Other Noncurrent Liabilities

Other noncurrent liabilities consisted of the following:

	December 31,	
	2019	2018
	(in thousands)	
Accrued taxes	\$ 4,862	\$ 4,137
Deferred rent	2,342	1,659
Other	2,599	908
Total other noncurrent liabilities	\$ 9,803	\$ 6,704

Note 6. Note Payable

In July 2015 and November 2015, the Company entered into three separate Installment Purchase Agreements (the IPA Agreements) totaling \$1.7 million for computer equipment and maintenance with one of its suppliers. The IPA Agreements are collateralized by the equipment purchased from the supplier and bear interest ranging from 2.9% to 5.0%. As of December 31, 2019 and 2018, the Company had zero and \$0.3 million, respectively, outstanding under this facility.

Note 7. Commitments and Contingencies

Operating Leases

The Company has entered into various non-cancelable operating lease agreements for certain of its offices and co-location facilities with lease periods expiring between the years ending December 31, 2019 and 2027. Certain of these arrangements have free or escalating rent payment provisions. The Company recognizes rent expense on a straight-line basis over the lease period. The difference between the rent paid and the straight-line rent is recorded as deferred rent, which is included in accrued expenses and other current liabilities and other noncurrent liabilities on the consolidated balance sheets. Rent expense was \$11.2 million, \$7.3 million, and \$3.9 million for the years ended December 31, 2019, 2018, and 2017, respectively. Refer to the table below for the aggregate future minimum lease payments under non-cancelable operating leases as of December 31, 2019. As of December 31, 2019 and 2018, the Company had \$6.7 million and \$6.4 million, respectively, in restricted cash related to irrevocable standby letters of credit established according to the requirements under lease agreements.

Bandwidth & Co-location Commitments

The Company enters into long-term non-cancelable agreements with providers in various countries to purchase capacity, such as bandwidth and co-location space, for the Company's global cloud platform. Bandwidth and co-location costs for paying customers are recorded as cost of revenue in the consolidated statements of operations and as sales and marketing expense in the consolidated statements of operations for free customers. Such costs totaled \$37.0 million, \$27.5 million, and \$19.2 million for the years ended December 31, 2019, 2018, and 2017, respectively. Refer to the table below for long-term bandwidth and co-location commitments under non-cancelable contracts with various networks and Internet service providers as of December 31, 2019.

Purchase Commitments

Open purchase commitments are for the purchase of services under non-cancelable contracts. They are not recorded as liabilities on the consolidated balance sheet as of December 31, 2019 as the Company has not yet received the related services. Refer to the table below for purchase commitments under non-cancelable contracts with various vendors as of December 31, 2019.

	Payments Due by Period as of December 31, 2019						Thereafter
	Total	2020	2021	2022	2023	2024	
	(in thousands)						
Non-cancelable:							
Open purchase agreements ⁽¹⁾	\$ 13,684	\$ 2,430	\$ 2,400	\$ 1,810	\$ 1,377	\$ 685	\$ 4,982
Bandwidth and co-location commitments ⁽²⁾	32,776	18,517	9,515	3,099	1,260	384	1
Operating lease obligations ⁽³⁾	51,359	11,385	11,329	8,746	5,499	4,096	10,304
Total	\$ 97,819	\$ 32,332	\$ 23,244	\$ 13,655	\$ 8,136	\$ 5,165	\$ 15,287

- (1) Open purchase commitments are for the purchase of services under non-cancelable contracts. They were not recorded as liabilities on the consolidated balance sheet as of December 31, 2019 as the Company had not yet received the related services.
- (2) Long-term commitments for bandwidth usage and co-location with various networks and Internet service providers. The costs for services not yet received were not recorded as liabilities on the consolidated balance sheet as of December 31, 2019.
- (3) Office space and equipment under non-cancelable operating leases. Total payments listed represent total minimum future lease payments.

Build-to-Suit Lease Financing Obligation

The Company entered into a lease whereby the Company is deemed the accounting owner under build-to-suit lease accounting. The fair value of the leased property and corresponding financing obligation are included in property and equipment, net and build-to-suit lease financing obligation, respectively, on the consolidated balance sheets as of December 31, 2019 and 2018. As of December 31, 2019, the Company's future minimum lease payments required under this non-cancelable obligation were as follows:

	Build-to-Suit Lease (in thousands)
Year ending December 31,	
2020	\$ 2,673
2021	2,753
2022	2,355
Total minimum lease payments	<u>\$ 7,781</u>

The Company recognizes an increase in the fair value of the asset as additional building costs are incurred during the construction period and a corresponding increase in the build-to-suit lease financing obligation for any construction costs to be reimbursed by the landlord. As of December 31, 2019 and 2018, \$10.5 million and \$10.4 million, respectively, of build-to-suit lease financing obligation was included on the consolidated balance sheets.

Legal Matters

From time to time the Company is a party to various legal proceedings that arise in the ordinary course of business. In addition, third parties may from time to time assert claims against the Company in the form of letters and other communications. Management currently believes that there is no pending or threatened legal proceeding to which the Company is a party that is likely to have a material adverse effect on the Company's consolidated financial statements. However, the results of legal proceedings are inherently unpredictable and if an unfavorable ruling were to occur in any of the legal proceedings there exists the possibility of a material adverse effect on the Company's financial position, results of operations, and cash flows. The Company accrues for legal proceedings that it considers probable and for which the loss can be reasonably estimated. The Company discloses potential losses when they are reasonably possible. Legal costs incurred and expected to be incurred related to litigation matters are expensed as incurred.

The Company's platform and associated products are subject to various restrictions under U.S. export control and sanctions laws and regulations, including the U.S. Department of Commerce's Export Administration Regulations (EAR) and various economic and trade sanctions regulations administered by the U.S. Department of the Treasury's Office of Foreign Assets Controls (OFAC). The U.S. export control laws and U.S. economic sanctions laws include restrictions or prohibitions on the sale or supply of certain products and services to U.S. embargoed or sanctioned countries, governments, persons and entities and also require authorization for the export of certain encryption items. In addition, various countries regulate the import of certain encryption technology, including through import permitting and licensing requirements and have enacted or could enact laws that could limit the Company's ability to distribute its platform.

Although the Company takes precautions to prevent its platform and associated products from being accessed or used in violation of such laws, the Company may have inadvertently allowed its platform and associated products to be accessed or used by some customers in apparent violation of U.S. economic sanctions laws, including by users in embargoed or sanctioned countries, and the Company may have exported or allowed the download of certain software prior to making required filings with the U.S. Department of Commerce's Bureau of Industry and Security. As a result, the Company has submitted to OFAC and to the Bureau of Industry and Security a voluntary self-disclosure concerning potential violations, and the Company has submitted a voluntary self-disclosure to the Census Bureau regarding potential violations of the Foreign Trade Regulations related to some incorrect electronic export information statements to the U.S. government for certain hardware exports, which were authorized. The voluntary self-disclosure to the Census Bureau was completed with no penalties in November 2019, while the other voluntary self-disclosures are still under review. If the Company is found to be in violation of U.S. economic sanctions or export control laws, it could result in substantial fines and penalties for the Company and for the individuals working for the Company. The Company may also be adversely affected through other penalties, reputational harm, loss of access to certain markets or otherwise. No loss has been recognized in the consolidated financial statements for this loss contingency as it is not probable a loss has been incurred and the range of a possible loss is not yet estimable.

Guarantees and Indemnifications

If the Company's services do not meet certain service level commitments, its contracted customers and certain of its pay-as-you-go customers are entitled to receive service credits, and in certain cases, refunds, each representing a form of variable consideration. To date, the Company has not incurred any material costs as a result of such commitments.

The Company's arrangements generally include certain provisions for indemnifying customers against liabilities if its products or services infringe a third-party's intellectual property rights. It is not possible to determine the maximum potential amount under these indemnification obligations due to the limited history of prior indemnification claims and the unique facts and circumstances involved in each particular agreement. To date, the Company has not incurred any material costs as a result of such obligations and has not accrued any liabilities related to such obligations in the consolidated financial statements.

The Company has also agreed to indemnify its directors, executive officers, and certain other employees for costs associated with any fees, expenses, judgments, fines, and settlement amounts incurred by them in any action or proceeding to which any of them are, or are threatened to be, made a party by reason of their service as a director or officer. The Company maintains director and officer insurance coverage that would generally enable it to recover a portion of any future amounts paid. The Company also may be subject to indemnification obligations by law with respect to the actions of its employees under certain circumstances and in certain jurisdictions.

Note 8. Redeemable Convertible Preferred Stock**Redeemable Convertible Preferred Stock**

Upon completion of the IPO, all shares of Series A, Series B, and Series C redeemable convertible preferred stock then outstanding, totaling 134,276,690 shares, were automatically converted into an equivalent number of shares of Class B common stock on a one-to-one basis and all shares of Series D redeemable convertible preferred stock outstanding, totaling 31,381,152 shares, were automatically converted into an equivalent number of shares of Class A common stock on a one-to-one basis. The carrying value of \$331.5 million was reclassified into stockholders' equity (deficit). As of December 31, 2019, there were no shares of redeemable convertible preferred stock issued and outstanding.

In connection with the IPO, the Company's amended and restated certificate of incorporation became effective, which authorized the issuance of 225,000,000 shares of preferred stock with a par value of \$0.001 per share with rights and preferences, including voting rights, designated from time to time by the Company's Board of Directors.

As of December 31, 2018, the Company's redeemable convertible preferred stock consisted of the following:

	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Aggregate Liquidation Preference
		(in thousands)		
Series A	50,041	50,041	\$ 1,985	\$ 2,050
Series B	59,286	59,109	19,927	19,991
Series C	25,127	25,127	49,942	50,000
Series D	33,654	31,381	259,667	260,000
	168,108	165,658	\$ 331,521	\$ 332,041

Redeemable Convertible Preferred Stock Warrants

In connection with the terms of a loan and security agreement entered into by the Company in April 2011, the Company issued a warrant to purchase 59,140 shares of Series B redeemable convertible preferred stock upon execution of the agreement, an additional warrant to purchase 94,510 shares of Series B redeemable convertible preferred stock in connection with the Company's drawdown of \$1.6 million under the facility during October 2011, and a warrant to purchase 23,760 shares of Series B redeemable convertible preferred stock in connection with the

final drawdown of \$0.4 million in January 2012. The warrants had an exercise price of \$0.34 per share. The warrants were considered a liability and carried at fair value with any changes in fair value recognized in other income (expense), net in the consolidated statements of operations. Upon completion of the IPO, the warrants to purchase Series B redeemable convertible preferred stock were automatically converted to warrants to purchase an equal number of shares of Class B common stock. As a result, the warrant liability was remeasured and reclassified to additional paid-in capital within stockholders' equity (deficit).

During the years ended December 31, 2019 and 2018, the Company recorded a loss of \$1.5 million and \$1.2 million, respectively, related to the change in fair value of the redeemable convertible preferred stock warrants.

The fair value of the redeemable convertible preferred stock warrants was determined using the following assumptions:

	<u>December 31, 2018</u>
Remaining contractual life (in years)	2.3
Expected volatility	39.2 %
Risk-free interest rate	2.5 %
Expected dividend rate	—

In the year ended December 31, 2019, the warrants were exercised and such shares were settled via the net settlement method, resulting in the issuance of 174,347 shares of the Company's Class B common stock.

Note 9. Common Stock

The Company's amended and restated certificate of incorporation authorizes the issuance of Class A common stock and Class B common stock. The holder of each share of Class A common stock is entitled to one vote per share, while the holder of each share of Class B common stock is entitled to 10 votes per share. As of December 31, 2019 and 2018, the Company was authorized to issue 2,250,000,000 and 550,000,000 shares of Class A common stock, respectively, and 315,000,000 and 300,000,000 shares of Class B common stock, respectively, each with a par value of \$0.001 per share. There were 87,071,783 and zero shares of Class A common stock issued and outstanding as of December 31, 2019 and 2018, respectively. The number of shares of Class B common stock issued and outstanding was 213,101,364 and 91,542,243, as of December 31, 2019 and 2018, respectively.

Holders of the Company's Class A common stock and Class B common stock are entitled to dividends when, as and if, declared by the Company's Board of Directors, subject to the rights of the holders of all classes of stock outstanding having priority rights to dividends. Any dividends paid to the holders of the Class A common stock and Class B common stock will be paid on a pro rata basis. As of December 31, 2019 and 2018, the Company had not declared any dividends. The rights of the holders of Class A and Class B common stock are identical, except with respect to voting and conversion. Shares of our Class B common stock are convertible into an equivalent number of shares of our Class A common stock and generally convert into shares of our Class A common stock upon cessation of employment or transfer, except for certain transfers described in the Company's amended and restated certificate of incorporation. Class A common stock and Class B common stock are referred to, collectively, as common stock throughout the notes to these consolidated financial statements, unless otherwise indicated.

Common Stock Reserved for Future Issuance

Shares of common stock reserved for future issuance, on an as-if converted basis, are as follows:

	December 31,	
	2019	2018
	(in thousands)	
Conversion of redeemable convertible preferred stock	—	165,658
Stock options issued and outstanding	21,191	25,087
Remaining shares available for issuance under the 2010 Plan	—	13,356
Remaining shares available for issuance under the 2019 Plan	29,048	—
Redeemable convertible preferred stock warrants outstanding	—	177
Outstanding and unsettled RSUs	7,175	—
Shares available for issuance under the ESPP	5,870	—
Total shares of common stock reserved	63,284	204,278

Note 10. Stock-based Compensation**Equity Incentive Plans**

In 2010, the Company's Board of Directors adopted and stockholders approved the 2010 Equity Incentive Plan (2010 Plan). The 2010 Plan is a broad-based retention program and is intended to attract and retain talented employees, directors, and non-employee consultants. The 2010 Plan provides for the granting of stock options, restricted stock, RSUs, and stock appreciation rights to employees, directors, and consultants. Incentive stock options may be granted only to employees. All other awards under the 2010 Plan, including non-qualified stock options, may be granted to employees, directors, and consultants. Except for qualifying assumptions and substitutions of options, the exercise price of an incentive stock option and non-qualified stock option shall not be less than 100% of the fair market value of such shares on the date of grant. The number of shares of common stock authorized for issuance under the 2010 Plan was 75,008,088 as of December 31, 2018. Prior to the Company's IPO, stock-based awards forfeited, canceled, or repurchased generally were returned to the pool of shares of common stock available for issuance under the 2010 Plan. The number of shares of common stock available for issuance under the 2010 Plan was zero and 13,355,967 as of December 31, 2019 and 2018, respectively. In connection with the IPO, the 2010 Plan was terminated effective immediately prior to the effectiveness of the 2019 Equity Incentive Plan (2019 Plan) and the Company ceased granting any additional awards under the 2010 Plan. All outstanding awards under the 2010 Plan at the time of the termination of the 2010 Plan remain subject to the terms of the 2010 Plan, and any shares underlying stock options that expire or terminate or are forfeited or repurchased by the Company under the 2010 Plan will be automatically transferred to the 2019 Plan.

In 2019, the Company's Board of Directors adopted and stockholders approved the 2019 Plan, which became effective one business day prior to the effective date of the Company's registration statement on Form S-1 for the IPO. The 2019 Plan provides for the granting of stock options, restricted stock, RSUs, stock appreciation rights, performance shares, performance stock units, and performance awards for the Company's Class A common stock to the Company's employees, directors, and consultants. Except as otherwise indicated below, the maximum number of shares of Class A common stock that may be issued under the 2019 Plan will not exceed 66,661,953 shares of the Company's Class A common stock, which is the sum of (1) 29,335,000 new shares, plus (2) an additional number of shares of Class A common stock not to exceed 37,326,953, consisting of the total number of shares of Class A or Class B common stock subject to outstanding awards granted under the 2010 Plan that, on or after the 2019 Plan became effective, are canceled, expire, or otherwise terminate prior to exercise or settlement; are repurchased by the Company because of the failure to vest; or are forfeited, tendered to, or withheld by the Company (or not issued) to satisfy a tax withholding obligation or the payment of an exercise price, if any, as such shares become available from time to time. Stock-based awards under the 2019 Plan that expire or are forfeited, canceled, or repurchased generally are returned to the pool of shares of Class A common stock available for issuance under the 2019 Plan. In addition, the number of shares of the Company's Class A common stock reserved for issuance under the 2019 Plan will automatically increase on January 1 of each calendar year, starting on January 1, 2021 through January 1, 2029, in an amount equal to the least of (i) 29,335,000 shares, (ii) 5% of the total number of shares of Class A and Class B common stock outstanding on December 31 of the fiscal year before

the date of each automatic increase, or (iii) a lesser number of shares determined by the compensation committee of the Company's Board of Directors prior to the applicable January 1. As of December 31, 2019, 1,112,681 shares of Class A common stock underlying RSUs were granted under the 2019 Plan and the number of shares of Class A common stock available for issuance under the 2019 Plan was 29,047,799.

Stock Options

Under the 2010 Plan and 2019 Plan, at exercise, stock option awards entitle the holder to receive one share of Class B or Class A common stock, in the case of the 2010 Plan, or one share of Class A common stock, in the case of the 2019 Plan. Stock options granted under the 2010 Plan and the 2019 Plan generally vest over a four-year period and expire no more than 10 years from the date of grant.

The following table summarizes the stock options activity under the 2010 Plan:

	Stock Options Outstanding			
	(in thousands, except year and per share data)			
	Shares Subject to Options Outstanding	Weighted-Average Exercise Price per Option	Weighted-Average Remaining Contractual Terms (in years)	Aggregate Intrinsic Value
Balances as of December 31, 2016	13,319	\$ 0.99	7.8	\$ 9,283
Options granted	17,937	\$ 2.02		
Options exercised	(2,458)	\$ 1.12		\$ 2,115
Repurchase of unvested shares	—			
Options canceled/forfeited/expired	(671)	\$ 1.60		
Balances as of December 31, 2017	28,127	\$ 1.62	8.5	\$ 11,684
Options granted	10,527	\$ 2.91		
Options exercised	(12,387)	\$ 1.53		\$ 15,433
Repurchase of unvested shares	—			
Options canceled/forfeited/expired	(1,180)	\$ 2.24		
Balances as of December 31, 2018	25,087	\$ 2.18	8.4	\$ 159,945
Options granted	394	\$ 9.60		
Options exercised	(2,665)	\$ 2.24		\$ 22,306
Repurchase of unvested shares	—			
Options canceled/forfeited/expired	(1,625)	\$ 2.35		
Balances as of December 31, 2019	21,191	\$ 2.30	7.4	\$ 312,720
Vested and expected to vest as of December 31, 2019	21,191	\$ 2.30	7.4	\$ 312,720
Exercisable as of December 31, 2019	21,184	\$ 2.30	7.4	\$ 312,622

The weighted-average assumptions used to determine the fair value of stock options granted during the periods presented were as follows:

	Year ended December 31,		
	2019	2018	2017
Expected term (in years)	6.2	6.5	6.5
Expected volatility	40.3 %	43.5 %	45.8 %
Risk-free interest rate	2.3 %	2.9 %	2.1 %
Dividend yield	—	—	—

The weighted-average grant date fair value of options granted during the years ended December 31, 2019, 2018, and 2017 was \$4.10, \$1.38, and \$0.97 per share, respectively.

The aggregate intrinsic value is the difference between the exercise price of the option and the estimated fair value of the underlying common stock. Options exercisable include 15,477,903 and 20,697,847 options that were unvested as of December 31, 2019 and 2018, respectively.

The total grant date fair value for vested options in the years ended December 31, 2019, 2018, and 2017 was \$5.2 million, \$3.4 million, and \$2.3 million, respectively.

As of December 31, 2019 and 2018, there was \$15.8 million and \$28.9 million, respectively, of unrecognized stock-based compensation expense related to unvested stock options that is expected to be recognized over a weighted-average period of 2.7 years and 3.8 years, respectively.

Early Exercises of Stock Options

The 2010 Plan allows for the early exercise of stock options for certain individuals as determined by the Company's Board of Directors. Shares of common stock issued upon early exercises of unvested options are not deemed, for accounting purposes, to be issued until those shares vest according to their respective vesting schedules and accordingly, the consideration received for early exercises is initially recorded as a liability and reclassified to common stock and additional paid-in capital as the underlying awards vest. Stock options that are early exercised are subject to a repurchase option that allows the Company to repurchase any unvested shares within six months of an individual's termination for any reason, including death and disability (or in the case of shares issued upon exercise of an option after termination, within six months of the date of exercise), at the price equal to the lower of the amount paid by the purchaser and the fair market value at the time of repurchase, except that after the IPO the repurchase price will be the amount paid by the purchaser. As of December 31, 2019 and 2018, the Company had \$13.3 million and \$14.3 million, respectively, recorded in liability for early exercise of unvested stock options, and the related number of unvested shares subject to repurchase was 5,945,083 and 6,737,971, respectively.

Restricted Stock Units

RSUs granted under the 2010 Plan generally vest upon the satisfaction of both a service-based vesting condition and a performance vesting condition, as defined below, occurring before these RSUs expire. RSUs granted under the 2019 Plan generally vest upon the satisfaction of a service-based vesting condition. The service-based vesting condition for employees under both the 2010 Plan and the 2019 Plan is typically satisfied over a four-year period, subject to remaining continuously employed, which (i) in certain cases is satisfied with respect to 25% of the RSUs upon completion of one year of service measured from the vesting commencement date, and the balance being satisfied in successive equal quarterly installments over the next three-year period, and (ii) in other cases is satisfied in successive equal quarterly installments over such four-year period. The performance vesting condition under the 2010 Plan was deemed satisfied upon the effective date of the Company's registration statement on Form S-1 filed with the SEC in connection with the IPO.

RSU activity for the year ended December 31, 2019 was as follows:

	RSUs	Weighted-Average Grant Date Fair Value
	(in thousands, except per share data)	
Unvested and outstanding as of December 31, 2018		
Granted	7,578	\$ 10.78
Vested	(668)	\$ 8.93
Forfeited	(402)	\$ 9.13
Unvested as of December 31, 2019	<u>6,508</u>	<u>\$ 11.08</u>
Vested and not yet released	667	\$ 8.93
Outstanding as of December 31, 2019	<u>7,175</u>	<u>\$ 10.88</u>

The total grant date fair value for vested RSUs for the year ended December 31, 2019 was \$6.0 million, and zero for the years ended December 31, 2018 and 2017. The total stock-based compensation expense for RSUs for the year ended December 31, 2019 was \$24.9 million, and zero for the years ended December 31, 2018 and 2017. As of December 31, 2019 and 2018, the total unrecognized stock-based compensation expense related to RSUs was

\$53.1 million and zero, respectively, that is expected to be recognized over a weighted-average period of 2.5 and zero years, respectively.

2019 Employee Stock Purchase Plan

In September 2019, the Company's Board of Directors adopted and stockholders approved the 2019 Employee Stock Purchase Plan (ESPP), which became effective one business day prior to the effective date of the Company's registration statement on Form S-1 filed with the SEC in connection with the IPO. A total of 5,870,000 shares of Class A common stock were initially reserved for sale under the ESPP. The number of shares of Class A common stock reserved for issuance includes an annual increase on the first day of each fiscal year, beginning on January 1, 2021, by the least of (1) 5,870,000 shares of Class A common stock, (2) 1% of the total number of shares of Class A and Class B common stock outstanding on December 31 of the fiscal year before the date of each automatic increase; or (3) such lesser amount as the compensation committee of the Company's Board of Directors may determine prior to the applicable January 1.

Generally, all regular employees, including executive officers, employed by the Company or by any of its designated subsidiaries, except for those holding 5% or more of the total combined voting power or value of all classes of common stock, may participate in the ESPP and may contribute, normally through payroll deductions, up to 10% of their eligible compensation for the purchase of Class A common stock under the ESPP. Unless otherwise determined by the compensation committee of the Board of Directors, Class A common stock will be purchased for the accounts of employees participating in the ESPP at a price per share that is the lesser of (1) 85% of the fair market value of a share of the Company's Class A common stock on the first date of an offering period, or (2) 85% of the fair market value of a share of the Company's Class A common stock on the date of purchase.

The initial offering period began on September 13, 2019 and will end on May 15, 2020, with the purchase date of May 15, 2020. In addition, a second offering period began on November 15, 2019 and will also end on May 15, 2020, with a purchase date of May 15, 2020. The ESPP generally provides for six-month offering periods beginning November 15 and May 15 of each year, with identical six-month purchase periods. An employee cannot sell the shares of Class A common stock purchased under the ESPP until the day after the one-year anniversary of the purchase date of such shares, except for the withholding or sale of shares by the Company to meet any applicable tax withholding obligations. No employee may purchase (i) during each purchase period more than 1,500 shares of Class A common stock and (ii) shares under the ESPP at a rate in excess of \$25,000 worth of the Company's Class A common stock based on the fair market value per share of the Company's Class A common stock at the beginning of an offering for each calendar year such purchase right is outstanding.

As of December 31, 2019, no shares of Class A common stock have been purchased under the ESPP. As of December 31, 2019 and 2018, the total unrecognized stock-based compensation expense related to the ESPP was \$1.0 million and zero, respectively, that is expected to be recognized over a weighted-average period of 0.4 and zero years, respectively.

The weighted-average assumptions used to determine the fair value of the ESPP during the periods presented were as follows:

	Year ended December 31,	
	2019	2018
Expected term (in years)	0.7	N/A
Risk-free interest rate	1.8 %	N/A
Expected volatility	35.5 %	N/A
Dividend yield	—	N/A

Stock-based Compensation Expense

The following table sets forth the total stock-based compensation expense included in the Company's consolidated statements of operations:

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Cost of revenue	\$ 716	\$ 119	\$ 47
Sales and marketing	8,709	979	488
Research and development	13,037	1,532	969
General and administrative	14,165	24,717	1,251
Total stock-based compensation expense	\$ 36,627	\$ 27,347	\$ 2,755

Total stock-based compensation expense for the year ended December 31, 2018 includes charges related to a secondary sale of the Company's Class B common stock of \$23.3 million. Refer to Note 13 to these consolidated financial statements for further information on these transactions. Total stock-based compensation expense for the year ended December 31, 2019 includes charges related to the cumulative stock-based compensation expense of \$21.0 million for the QE Options for the service period rendered from the date of grant through the equity securities listing date and for the QE RSUs that vested in connection with effective date of the Company's registration statement on Form S-1 filed with the SEC in connection with the IPO.

Note 11. Net Loss per Share Attributable to Common Stockholders

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

	Year Ended December 31,			
	2019		2018	2017
	Class A	Class B	Common	Common
	(in thousands, except per share data)			
Net loss attributable to common stockholders	\$ (18,259)	\$ (87,569)	\$ (87,164)	\$ (10,748)
Weighted-average shares used in computing net loss per share attributable to common stockholders, basic and diluted	25,243	121,063	80,981	77,147
Net loss per share attributable to common stockholders, basic and diluted	\$ (0.72)	\$ (0.72)	\$ (1.08)	\$ (0.14)

Since the Company was in a loss position for all periods presented, basic net loss per share is the same as diluted net loss per share as the inclusion of all potential common shares outstanding would have been antidilutive. The potential shares of common stock that were excluded from the computation of diluted net loss per share attributable to common stockholders for the periods presented because including them would have been antidilutive are as follows:

	December 31,		
	2019	2018	2017
	(in thousands)		
Redeemable convertible preferred stock	—	165,658	152,022
Redeemable convertible preferred stock warrants	—	177	177
Shares subject to repurchase	5,945	6,738	748
Unexercised stock options	21,191	25,087	28,127
Unvested restricted stock and RSUs	6,508	—	78
Shares issuable pursuant to the ESPP	438	—	—
Total	34,082	197,660	181,152

Note 12. Income Taxes

The components of the Company's income (loss) before income taxes for the years ended December 31, 2019, 2018, and 2017 were as follows:

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Domestic	\$ (117,401)	\$ (87,615)	\$ (11,633)
Foreign	12,688	1,528	1,918
Total income (loss) before income taxes	<u>\$ (104,713)</u>	<u>\$ (86,087)</u>	<u>\$ (9,715)</u>

The components of the Company's provision for income taxes for the years ended December 31, 2019, 2018, and 2017 were as follows:

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Current expense (benefit):			
Federal	\$ 391	\$ 402	\$ 699
State	29	42	23
Foreign	325	248	446
Total current provision for income taxes	<u>\$ 745</u>	<u>\$ 692</u>	<u>\$ 1,168</u>
Deferred expense (benefit):			
Federal	—	(1)	1
State	—	—	—
Foreign	370	386	(136)
Total deferred provision for income taxes	<u>\$ 370</u>	<u>\$ 385</u>	<u>\$ (135)</u>
Total provision for income taxes	<u>\$ 1,115</u>	<u>\$ 1,077</u>	<u>\$ 1,033</u>

A reconciliation of the U.S. federal statutory rate to the Company's effective tax rate is as follows:

	Year Ended December 31,		
	2019	2018	2017
Expected benefit at U.S. federal statutory rate	21.0 %	21.0 %	34.0 %
State income taxes, net of federal tax benefits	—	—	(0.2)
Foreign income or losses taxed at different rates	0.6	(1.3)	2.1
Stock-based compensation	(1.2)	(5.5)	2.1
Change in valuation allowance	(20.5)	(14.0)	(36.5)
Withholding taxes	(0.4)	(0.5)	(7.2)
Transition tax	—	—	(3.3)
Miscellaneous permanent items	(0.6)	(1.0)	(1.6)
Total provision for income taxes	<u>(1.1)%</u>	<u>(1.3)%</u>	<u>(10.6)%</u>

In 2019, the difference in the Company's effective tax rate and the U.S. federal statutory tax rate was primarily due to the recording of a full valuation allowance on the Company's U.S. deferred tax assets and income taxes from profitable jurisdictions outside of the U.S. In 2018 and 2017, the difference in the Company's effective tax rate and

the U.S. federal statutory tax rate was also primarily due to the recording of a full valuation allowance on the Company's U.S. deferred tax assets and income taxes from profitable jurisdictions outside of the U.S.

The components of the Company's deferred tax assets and liabilities as of December 31, 2019 and 2018 were as follows:

	Year Ended December 31,	
	2019	2018
(in thousands)		
Deferred tax assets:		
Net operating loss carryforwards	\$ 53,536	\$ 31,701
Tax credit carryforwards	11,969	8,699
Accrued expenses and reserves	168	1,069
Fixed assets	85	—
Stock-based compensation	6,852	—
Unrealized loss on investments	43	617
Other	1,703	1,062
Gross deferred tax assets	74,356	43,148
Valuation allowance	(63,487)	(37,924)
Total deferred tax assets	\$ 10,869	\$ 5,224
Deferred tax liabilities:		
Capitalized internal-use software	(4,668)	(3,111)
Deferred commissions	(5,487)	(493)
Fixed assets	(1,228)	(1,269)
Stock-based compensation	—	(514)
Unrealized gain on investments	(32)	(13)
Total deferred tax liabilities	\$ (11,415)	\$ (5,400)
Net deferred tax assets (liabilities)	\$ (546)	\$ (176)

In determining the need for a valuation allowance, the Company weighs both positive and negative evidence in the various jurisdictions in which it operates to determine whether it is more likely than not that its deferred tax assets are recoverable. Accordingly, a full valuation allowance has been established in the U.S. and no deferred tax assets and related tax benefit have been recognized in the consolidated financial statements. There is however, no valuation allowance on the foreign jurisdictions, as the foreign entities have cumulative income and expected future income. The valuation allowance as of December 31, 2019 and 2018 was \$63.5 million and \$37.9 million, respectively. The net change in the valuation allowance for the years ended December 31, 2019, 2018, and 2017 was an increase of \$25.6 million, an increase of \$15.5 million, and a decrease of \$2.5 million, respectively. The increase in the Company's valuation allowance compared to the prior year was primarily due to an increase in U.S. deferred tax assets from an increased U.S. taxable loss.

As of December 31, 2019 and 2018, the Company had net operating loss carryforwards for federal income tax purposes of \$221.5 million and \$122.3 million, net of uncertain tax positions, respectively. The federal net operating loss carryforwards for tax years before December 31, 2017 will expire, if not utilized, beginning in the year 2029. Under the Tax Cuts and Jobs Act (The Tax Act), the federal net operating loss carryforwards for tax years after December 31, 2017 are carried forward indefinitely but are limited to 80% of taxable income. Federal research and development tax credit carryforwards as of December 31, 2019 of \$8.5 million will expire, if not utilized, beginning in the year 2029.

In addition, as of December 31, 2019 and 2018, the Company had net operating loss carryforwards for state income tax purposes of \$104.7 million and \$89.8 million, net of uncertain tax positions, respectively. The state net operating loss carryforwards will expire, if not utilized, beginning in the year 2026. The Company had state research and development tax credit carryforwards as of December 31, 2019 of \$6.5 million. The state research and development tax credits do not expire.

As of December 31, 2019 and 2018, the Company had foreign tax credit carryforwards for federal income tax purposes of \$1.8 million. The federal foreign tax credit carryforwards will expire, if not utilized, beginning in the year 2025.

The Tax Reform Act of 1986 and similar California legislation impose substantial restrictions on the utilization of net operating losses and tax credit carryforwards in the event that there is a change in ownership as provided by Section 382 of the Internal Revenue Code and similar state provisions. Such a limitation could result in the expiration of the net operating loss carryforwards and tax credits before utilization.

A reconciliation of the beginning and ending amount of the Company's total gross unrecognized tax benefits was as follows:

	Year Ended December 31,		
	2019	2018	2017
	(in thousands)		
Balance as of the beginning of the period	\$ 2,549	\$ 2,247	\$ 1,153
Decreases for tax positions related to the prior year	(120)	(613)	—
Additions for tax positions related to the current year	1,311	915	1,094
Balance as of the end of the period	<u>\$ 3,740</u>	<u>\$ 2,549</u>	<u>\$ 2,247</u>

As of December 31, 2019, no amount of unrecognized tax benefits, if recognized, would impact the Company's effective income tax rate given the Company's full valuation allowance position. The Company does not expect any unrecognized tax benefits to be recognized within the next 12 months.

The Company's policy is to recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. The Company did not recognize any income tax expense related to interest and penalties in the years ended December 31, 2019, 2018, and 2017, respectively. As of December 31, 2019, 2018, and 2017, the Company had no liabilities for interest and penalties.

The Company's significant tax jurisdictions include the U.S., Australia, Germany, Singapore, and the United Kingdom. Because of the net operating loss carryforwards, substantially all of the Company's tax years remain open to federal and state tax examination. The Company's foreign tax returns are open to audit under the statutes of limitations of the respective foreign countries in which the subsidiaries are located.

As of December 31, 2019, no other income taxes (state or foreign) have been provided on the undistributed earnings of \$18.6 million from the Company's international subsidiaries as these earnings have been, and under current plans, will continue to be indefinitely reinvested outside of the U.S. However, if such earnings were distributed, the Company would not incur a material amount of foreign withholding taxes and U.S. taxes.

Note 13. Related Party Transactions

In September 2018, certain third-party investment funds purchased 8,909,092 shares of common stock from certain of the Company's founders for a total purchase price of \$98.0 million. Since the purchasing investment funds were entities affiliated with holders of economic interests in the Company and the funds acquired shares from the founders at a price in excess of the fair value of such shares, the amount paid in excess of the fair value of the shares at the time of the purchase was recorded as stock-based compensation expense. The Company recorded \$23.3 million of stock-based compensation expense to general and administrative expense in the consolidated statement of operations during the year ended December 31, 2018 related to the purchases. There were no such transactions in the year ended December 31, 2019.

Note 14. Segment and Geographic Information

The Company's chief operating decision maker (CODM) is its CEO, COO, and CFO. Collectively, the CODM reviews financial information presented on a consolidated basis for purposes of allocating resources and evaluating financial performance. The Company has no segment managers who are held accountable by the CODM for operations, operating results, and planning for levels or components below the consolidated unit level. Accordingly, the Company has determined it has a single operating segment.

Refer to Note 3 to these consolidated financial statements for revenue by geography.

The Company's property and equipment, net, by geographic area were as follows:

	December 31,	
	2019	2018
	(in thousands)	
United States	\$ 59,688	\$ 46,012
Rest of the world	41,778	27,198
Total property and equipment, net	\$ 101,466	\$ 73,210

No single country other than the United States accounted for more than 10% of total property and equipment, net as of December 31, 2019 and 2018.

Note 15. Subsequent Events

On January 1, 2020, the Company acquired S2 Systems Corporation, a company based in Kirkland, Washington that has developed patented browser isolation technology, for approximately \$39.2 million. The purchase accounting for this acquisition is in progress.

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 disclosure controls and procedures are designed to ensure that information we are required to disclose in reports that we file or submit under the Securities Exchange Act of 1934, as amended (the Exchange Act) is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management, with the participation and supervision of our Chief Executive Officer and our Chief Financial Officer, have evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of such date, our disclosure controls and procedures were, in design and operation, effective at a reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

This Annual Report on Form 10-K does not include a report of management's assessment regarding internal control over financial reporting or an attestation report of our independent registered public accounting firm as permitted in this transition period under the rules of the SEC for newly public companies.

Changes in Internal Controls Over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Annual Report on Form 10-K that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on the Effectiveness of Controls

The effectiveness of any system of internal control over financial reporting, including ours, is subject to inherent limitations, including the exercise of judgment in designing, implementing, operating, and evaluating the controls and procedures, and the inability to eliminate misconduct completely. Accordingly, in designing and evaluating the disclosure controls and procedures, management recognizes that any system of internal control over financial reporting, including ours, no matter how well designed and operated, can only provide reasonable, not absolute assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs. Moreover, 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. We intend to continue to monitor and upgrade our internal controls as necessary or appropriate for our business but cannot assure you that such improvements will be sufficient to provide us with effective internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item will be set forth in our definitive proxy statement to be filed with the Securities and Exchange Commission not later than 120 days after the end of our fiscal year ended December 31, 2019 in connection with our 2020 annual meeting of stockholders (the Proxy Statement), and is incorporated herein by reference.

Code of Conduct

Our Board of Directors has adopted a Code of Business Conduct and Ethics that applies to all officers, directors, and employees, which is available on our website at [cloudflare.NET](#) under "Governance." We intend to satisfy the disclosure requirement under Item 5.05 of Form 8-K regarding amendments to, or waiver from, a provision of our Code of Business Conduct and Ethics by posting such information on the website address and location specified above.

Item 11. Executive Compensation

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

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

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

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

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this report:

1. Financial Statements

See Index to Consolidated Financial Statements in Item 8 herein.

2. Financial Statement Schedules

Schedules not listed above have been omitted because they are not required, not applicable, or the required information is otherwise included.

3. Exhibits

The exhibits listed below are filed as part of this Annual Report on Form 10-K or are incorporated herein by reference, in each case as indicated below.

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference			
		Form	File No.	Exhibit	Filing Date
3.1	Amended and Restated Certificate of Incorporation of the Registrant.	10-Q	001-39039	3.1	November 12, 2019
3.2	Amended and Restated Bylaws of the Registrant.	10-Q	001-39039	3.2	November 12, 2019
4.1	Form of Class A common stock certificate of the Registrant.	S-1	333-233296	4.1	August 15, 2019
4.2	Amended and Restated Investors' Rights Agreement by and among the Registrant and certain holders of its capital stock, dated as of September 4, 2018.	S-1	333-233296	4.2	August 15, 2019
4.3*	Description of Capital Stock.				
10.1+	Form of Indemnification Agreement between the Registrant and each of its directors and officers.	S-1/A	333-233296	10.1	September 3, 2019
10.2+	2019 Equity Incentive Plan and related form agreements.	S-1/A	333-233296	10.2	September 3, 2019
10.3+	2019 Employee Stock Purchase Plan and related form agreements.	S-1/A	333-233296	10.3	September 3, 2019
10.4+	2019 Executive Incentive Compensation Plan.	S-1/A	333-233296	10.4	September 3, 2019
10.5+	Change in Control and Severance Policy.	S-1/A	333-233296	10.10	September 3, 2019
10.6+	Offer Letter between the Registrant and Matthew Prince.	S-1/A	333-233296	10.6	September 3, 2019
10.7+	Offer Letter between the Registrant and Michelle Zatlun.	S-1/A	333-233296	10.7	September 3, 2019
10.8+	Offer Letter between the Registrant and Thomas Seifert.	S-1/A	333-233296	10.8	September 3, 2019
10.9+	Offer Letter between the Registrant and Douglas Kramer.	S-1/A	333-233296	10.9	September 3, 2019
10.10	Lease Agreement between the Registrant and Civitas Equity Fund I, LLC, dated as of April 18, 2014.	S-1	333-233296	10.10	August 15, 2019
10.11	Office Lease Agreement between the Registrant and Ichi Juu Ichi, dated as of November 1, 2017.	S-1	333-233296	10.11	August 15, 2019
10.12+	2010 Equity Incentive Plan and related form agreements.	S-1	333-233296	10.5	August 15, 2019
21.1	List of subsidiaries of the Registrant.	S-1	333-233296	21.1	August 15, 2019
23.1*	Consent of KPMG LLP, independent registered public accounting firm.				
24.1*	Power of Attorney (included in signature pages hereto).				
31.1*	Certification of the Chief Executive Officer pursuant to Exchange Act Rule 13a-14 as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
31.2*	Certification of the Chief Financial Officer pursuant to Exchange Act Rule 13a-14 as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				
32.1†	Certification of the Chief Executive Officer and 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	The following financial statements from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline XBRL: (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Loss, (iv) Consolidated Statements of Redeemable Convertible Preferred Stock and Stockholders' Equity (Deficit), (v) Consolidated Statements of Cash Flows, and (vi) Notes to Consolidated Financial Statements.				
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)				

* Filed herewith.

+ Indicates management contract or compensatory plan or arrangement.

† The certifications attached as Exhibit 32.1 that accompany this Annual Report on Form 10-K are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Registrant under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Annual Report on Form 10-K, irrespective of any general incorporation language contained in such filing.

Item 16. Form 10-K Summary

None.

SIGNATURES

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

Date: March 4, 2020

CLOUDFLARE, INC.

By: /s/ Matthew Prince
Matthew Prince
Chief Executive Officer
(Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Matthew Prince, Michelle Zatlun, Thomas Seifert, and Douglas Kramer, and each one of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in their name, place and stead, in any and all capacities, to sign any amendments to this Annual Report on Form 10-K and to file the same, with Exhibits thereto and other documents in connection therewith with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or substitute or substitutes may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Matthew Prince</u> Matthew Prince	Chief Executive Officer and Chair <i>(Principal Executive Officer)</i>	March 4, 2020
<u>/s/ Thomas Seifert</u> Thomas Seifert	Chief Financial Officer <i>(Principal Financial Officer)</i>	March 4, 2020
<u>/s/ Paul Underwood</u> Paul Underwood	Chief Accounting Officer <i>(Principal Accounting Officer)</i>	March 4, 2020
<u>/s/ Michelle Zatlyn</u> Michelle Zatlyn	Director	March 4, 2020
<u>/s/ Mark Anderson</u> Mark Anderson	Director	March 4, 2020
<u>/s/ Maria Eitel</u> Maria Eitel	Director	March 4, 2020
<u>/s/ Carl Ledbetter</u> Carl Ledbetter	Director	March 4, 2020
<u>/s/ Stanley Meresman</u> Stanley Meresman	Director	March 4, 2020
<u>/s/ Scott Sandell</u> Scott Sandell	Director	March 4, 2020
<u>/s/ Katrin Suder</u> Katrin Suder	Director	March 4, 2020

DESCRIPTION OF CAPITAL STOCK

The following description of the capital stock of Cloudflare, Inc. (“us,” “our,” “we” or the “Company”) is a summary of the rights of our common stock and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws as currently in effect. This summary does not purport to be complete and is qualified in its entirety by the provisions of our amended and restated certificate of incorporation, amended and restated bylaws, and Amended and Restated Investors’ Rights Agreement (“IRA”), each previously filed with the Securities and Exchange Commission and incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.3 is a part, as well as to the applicable provisions of the Delaware General Corporation Law (the “DGCL”). We encourage you to read our amended and restated certificate of incorporation, amended and restated bylaws, IRA, and the applicable provisions of the DGCL carefully.

General

Our authorized capital stock consists of 2,790,000,000 shares, \$0.001 par value per share, of which:

- 2,250,000,000 shares are designated as Class A common stock;
- 315,000,000 shares are designated as Class B common stock; and
- 225,000,000 shares are designated as preferred stock.

Common Stock

We have two classes of authorized common stock, Class A common stock and Class B common stock. The rights of the holders of Class A common stock and Class B common stock are identical, except with respect to voting and conversion. Some of the terms of these classes of common stock are discussed in greater detail below.

Dividend Rights

Subject to preferences that may apply to any shares of preferred stock outstanding at the time, the holders of our common stock are entitled to receive dividends out of funds legally available if our Board of Directors, in its discretion, determines to issue dividends and then only at the times and in the amounts that our Board of Directors may determine.

Voting Rights

Holders of our Class A common stock are entitled to one vote for each share held on all matters submitted to a vote of stockholders and holders of our Class B common stock are entitled to 10 votes for each share held, except as otherwise required by law. The holders of our Class A common stock and Class B common stock vote together as a single class, unless otherwise required by law.

Delaware law could require either holders of our Class A common stock and our Class B common stock to vote separately as a single class in the following circumstances:

- if we were to seek to amend our amended and restated certificate of incorporation to increase or decrease the par value of a class of stock, then that class would be required to vote separately to approve the proposed amendment; and
-

- if we were to seek to amend our amended and restated certificate of incorporation in a manner that alters or changes the powers, preferences, or special rights of a class of stock in a manner that affected its holders adversely, then that class would be required to vote separately to approve the proposed amendment.

Stockholders do not have the ability to cumulate votes for the election of directors. Our amended and restated certificate of incorporation and amended and restated bylaws provide for a classified Board of Directors consisting of three classes of approximately equal size, each serving staggered three-year terms. Only the directors in one class will be subject to election by a plurality of the votes cast at each annual meeting of stockholders, with the directors in the other classes continuing for the remainder of their respective three-year terms.

Right to Receive Liquidation Distributions

If we become subject to a liquidation, dissolution, or winding-up, the assets legally available for distribution to our stockholders would be distributable ratably among the holders of our common stock and any participating preferred stock outstanding at that time, subject to prior satisfaction of all outstanding debt and liabilities and the preferential rights of and the payment of liquidation preferences, if any, on any outstanding shares of preferred stock.

Conversion of Class B Common Stock

Shares of our Class A common stock are not convertible into any other shares of our capital stock. Each share of our Class B common stock is convertible at any time at the option of the holder into one share of Class A common stock. In addition, shares of Class B common stock will automatically convert into shares of Class A common stock upon sale or transfer of such shares and upon the cessation of employment by holders of our Class B common stock (other than Mr. Prince and Ms. Zatlun, who are referred to in our amended and restated certificate of incorporation as "Excluded Parties"), but excluding certain transfers permitted by our amended and restated certificate of incorporation.

Notwithstanding the foregoing, all outstanding shares of Class B common stock will convert into shares of Class A common stock upon the earliest to occur of: (i) such time as the Excluded Parties and their respective permitted transferees collectively hold less than 25% of the number of shares of Class B common stock held by them as of the date of the closing of the Company's initial public offering; (ii) following the death or disability of both Excluded Parties; or (iii) the date specified by the holders of a majority of the then-outstanding shares of Class B common stock, which majority must include each of the Excluded Parties to the extent that he or she is then living and nondisabled and holds, together with his or her respective permitted transferees, at least 25% of the number of shares of Class B common stock held by them as of the date of the closing of the Company's initial public offering.

Other Matters

All issued and outstanding shares of our common stock are fully paid and nonassessable. Our common stock is not entitled to preemptive rights and is not subject to redemption or sinking fund provisions.

Preferred Stock

Our Board of Directors is authorized, subject to limitations prescribed by the DGCL, to issue preferred stock in one or more series, to establish from time to time the number of shares to be included in each series, and to fix the designation, powers, preferences, and rights of the shares of each series and any of its qualifications, limitations, or restrictions, in each case without further vote or action by our stockholders. Our Board of Directors can also increase or decrease the number of shares of any series of preferred stock, but not below the number of shares of that series then outstanding, without any further

vote or action by our stockholders. Our Board of Directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring, or preventing a change in control of the Company and might adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. We have no current plan to issue any shares of preferred stock.

Registration Rights

Certain holders of our common stock are entitled under the IRA to rights with respect to the registration of their shares under the Securities Act. The registration rights set forth in our IRA will expire five years following our initial public offering, which occurred in September 2019, or, with respect to any particular stockholder, when such stockholder is able to sell all of its shares on any one day pursuant to Rule 144 of the Securities Act or a similar exemption. We will pay the registration expenses (other than underwriting discounts, selling commissions, and transfer taxes) of the holders of the shares registered pursuant to the registrations described below, including the fees and disbursements of one special counsel for the selling stockholders in an amount not to exceed \$30,000. In an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions, to limit the number of shares such holders may include.

Demand Registration Rights

Certain holders of our common stock are entitled to demand registration rights pursuant to the IRA. At any time beginning 180 days after the effective date of our initial public offering, the holders of at least 50% of these shares then outstanding can request that we register the offer and sale of their shares. We are obligated to effect only two such registrations. If we determine that it would be materially detrimental to us and our stockholders to effect such a demand registration, we have the right to defer such registration, not more than once in any 12-month period, for a period of up to 90 days.

Piggyback Registration Rights

If we propose to register the offer and sale of our Class A common stock under the Securities Act, in connection with the public offering of such Class A common stock, certain holders of our common stock will be entitled to certain “piggyback” registration rights allowing the holders to include their shares in such registration, subject to certain marketing and other limitations. As a result, whenever we propose to file a registration statement under the Securities Act, other than with respect to (i) a registration relating to the sale of securities to our employees pursuant to an equity plan, (ii) a registration related to any employee benefit plan or a corporate reorganization or other transaction covered by Rule 145 promulgated under the Securities Act, (iii) a registration on any registration form which does not permit secondary sales or does not include substantially the same information as would be required to be included in a registration statement covering the public offering of our Class A common stock, or (iv) a registration in which the only Class A common stock being registered is Class A common stock issuable upon conversion of debt securities that are also being registered, the holders of these shares are entitled to notice of the registration and have the right, subject to certain limitations, to include their shares in the registration.

S-3 Registration Rights

Certain holders of our common stock are entitled to Form S-3 registration rights pursuant to the IRA. The holders of at least 20% of these shares then outstanding may make a written request that we register the offer and sale of their shares on a registration statement on Form S-3 if we are eligible to file a registration statement on Form S-3 so long as the request covers securities the anticipated aggregate public offering

price of which, net of underwriting discounts and commissions, is at least \$1,000,000. These stockholders may make an unlimited number of requests for registration on Form S-3; however, we will not be required to effect a registration on Form S-3 if we have effected two such registrations within the 12-month period preceding the date of the request. Additionally, if we determine that it would be materially detrimental to us and our stockholders to effect such a registration, we have the right to defer such registration, not more than once in any 12-month period, for a period of up to 90 days.

Anti-Takeover Provisions

Certain provisions of Delaware law, our amended and restated certificate of incorporation, and our amended and restated bylaws, which are summarized below, may have the effect of delaying, deferring, or discouraging another person from acquiring control of the Company. They are also designed, in part, to encourage persons seeking to acquire control of us to negotiate first with our Board of Directors.

Delaware Law

We will be governed by the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a public Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a period of three years after the date of the transaction in which the person became an interested stockholder, unless:

- the transaction was approved by the board of directors prior to the time that the stockholder became an interested stockholder;
- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding shares owned by directors who are also officers of the corporation and shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to the time the stockholder became an interested stockholder, the business combination was approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

In general, Section 203 defines a “business combination” to include mergers, asset sales, and other transactions resulting in financial benefit to a stockholder and an “interested stockholder” as a person who, together with affiliates and associates, owns, or, within three years, did own, 15% or more of the corporation’s outstanding voting stock. These provisions may have the effect of delaying, deferring, or preventing changes in control of the Company.

Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws Provisions

Our amended and restated certificate of incorporation and our amended and restated bylaws include a number of provisions that could deter hostile takeovers or delay or prevent changes in control of our Board of Directors or management team, including the following:

Dual-class stock. As described above, our Class B common stock has 10 votes per share, while our Class A common stock, which is the only class of our stock that is publicly traded, has one vote per share. As a result of this dual class structure, our co-founders and certain of our pre-IPO investors, which includes certain of our executive officers, employees, directors, and their affiliates, have significant influence over matters requiring stockholder approval, including the election of directors and significant corporate transactions, such as a merger or other sale of the Company or its assets.

Board of Directors vacancies. Our amended and restated certificate of incorporation and amended and restated bylaws authorize only our Board of Directors to fill vacant directorships, including newly created seats. In addition, the number of directors constituting our Board of Directors is permitted to be set only by a resolution adopted by a majority vote of our entire Board of Directors. These provisions would prevent a stockholder from increasing the size of our Board of Directors and then gaining control of our Board of Directors by filling the resulting vacancies with its own nominees. This will make it more difficult to change the composition of our Board of Directors and will promote continuity of management.

Classified Board of Directors. Our amended and restated certificate of incorporation and amended and restated bylaws provide that our Board of Directors is classified into three classes of directors. A third party may be discouraged from making a tender offer or otherwise attempting to obtain control of us as it is more difficult and time consuming for stockholders to replace a majority of the directors on a classified board of directors.

Stockholder action; special meeting of stockholders. Our amended and restated certificate of incorporation provides that our stockholders may not take action by written consent, but may only take action at annual or special meetings of our stockholders. As a result, a holder controlling a majority of our capital stock would not be able to amend our amended and restated bylaws or remove directors without holding a meeting of our stockholders called in accordance with our amended and restated bylaws. Our amended and restated bylaws further provides that special meetings of our stockholders may be called only by a majority of our entire Board of Directors, the Chair of our Board of Directors, or our Chief Executive Officer, thus prohibiting a stockholder from calling a special meeting. These provisions might delay the ability of our stockholders to force consideration of a proposal or for stockholders controlling a majority of our capital stock to take any action, including the removal of directors.

Advance notice requirements for stockholder proposals and director nominations. Our amended and restated bylaws provide advance notice procedures for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders. Our amended and restated bylaws also specify certain requirements regarding the form and content of a stockholder's notice. These provisions might preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed. These provisions may also discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of the Company.

No cumulative voting. The Delaware General Corporation Law provides that stockholders are not entitled to cumulate votes in the election of directors unless a corporation's certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation does not provide for cumulative voting.

Directors removed only for cause. Our amended and restated certificate of incorporation provides that stockholders may remove directors only for cause.

Amendment of charter and bylaws provisions. Any amendment of the above provisions in our amended and restated certificate of incorporation and amended and restated bylaws will require approval by holders of at least two-thirds of the voting power of our then outstanding capital stock.

Issuance of undesignated preferred stock. Our amended and restated certificate of incorporation provides that our Board of Directors has the authority, without further action by our stockholders, to issue up to 225,000,000 shares of undesignated preferred stock with rights and preferences, including voting rights, designated from time to time by our Board of Directors. The existence of authorized but unissued shares of preferred stock would enable our Board of Directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest, or other means.

Exclusive forum. Our amended and restated bylaws provide that the Court of Chancery of the State of Delaware (or, if the Court of Chancery does not have jurisdiction, the federal district court for the District of Delaware) will be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (i) any derivative action or proceeding brought on our behalf; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, or other employees to us or our stockholders; (iii) any action arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws; or (iv) any other action asserting a claim that is governed by the internal affairs doctrine, in all cases subject to the court having jurisdiction over indispensable parties named as defendants. The provisions would not apply to suits brought to enforce a duty or liability created by the Exchange Act. Additionally, nothing in our amended and restated bylaws precludes stockholders that assert claims under the Securities Act from bringing such claims in state or federal court, subject to applicable law. Any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and consented to this provision. These provisions may have the effect of discouraging lawsuits against us or our directors and officers.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A., located at 250 Royall Street, Canton, Massachusetts 02021.

Listing

Our Class A common stock is listed on the New York Stock Exchange under the symbol "NET."

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Cloudflare, Inc.:

We consent to the incorporation by reference in the registration statement (No. 333-233743) on Form S-8 of Cloudflare, Inc. of our report dated March 4, 2020, with respect to the consolidated balance sheets of Cloudflare, Inc. as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' equity (deficit), and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements), which report appears in the December 31, 2019 annual report on Form 10-K of Cloudflare, Inc.

/s/ KPMG LLP

Santa Clara, California
March 4, 2020

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14a OF
THE SECURITIES EXCHANGE ACT OF 1934
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES OXLEY ACT OF 2002**

I, Matthew Prince, certify that:

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

Date: March 4, 2020

CLOUDFLARE, INC.

/s/ Matthew Prince

Matthew Prince

Chief Executive Officer

(Principal Executive Officer)

**CERTIFICATION PURSUANT TO RULE 13a-14(a) OR 15d-14a OF
THE SECURITIES EXCHANGE ACT OF 1934
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES OXLEY ACT OF 2002**

I, Thomas Seifert, certify that:

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

Date: March 4, 2020

CLOUDFLARE, INC.

/s/ Thomas Seifert

Thomas Seifert

Chief Financial Officer

(Principal Financial Officer)

**CERTIFICATIONS OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

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

Date: March 4, 2020

/s/ Matthew Prince

Matthew Prince

Chief Executive Officer

(Principal Executive Officer)

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

Date: March 4, 2020

/s/ Thomas Seifert

Thomas Seifert

Chief Financial Officer

(Principal Financial Officer)