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

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2021

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: 001-39056

PING IDENTITY HOLDING CORP.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**81-2933383**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification Number)

1001 17th Street, Suite 100
Denver, Colorado 80202
(Address of Principal executive offices, including zip code)

(303) 468-2900
(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class:	Trading Symbol(s):	Name of each exchange on which registered:
Common Stock, $0.001 par value per share	PING	New York Stock Exchange

Securities Registered Pursuant to Section 12(g) of the Act:
None.

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

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

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

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

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

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

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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

The aggregate market value of voting stock held by non-affiliates of the Registrant was $1,260.4 million as of June 30, 2021, the last business day of the Registrant’s most recently completed second fiscal quarter (based on a closing price of $22.90 per share). Shares of common stock held by each executive officer, director, and holder of 5% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

On February 17, 2022, the Registrant had 83,788,177 shares of common stock, $0.001 par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the information called for by Part III of this Annual Report on Form 10-K are hereby incorporated by reference from the definitive proxy statement for the Registrant’s annual meeting of stockholders, which will be filed with the Securities and Exchange Commission not later than 120 days after the Registrant’s fiscal year ended December 31, 2021.

PING IDENTITY HOLDING CORP.
FORM 10-K
For the Fiscal Year Ended December 31, 2021
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Forward-Looking Statements

In addition to historical consolidated financial information, this Annual Report on Form 10-K contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995 that involve substantial risks and uncertainties. All statements other than statements of historical fact included in this Annual Report on Form 10-K are forward-looking statements. These statements may include words such as "anticipate," "estimate," "expect," "project," "plan," "intend," "believe," "may," "will," "should," "can have," "likely" and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operating or financial performance or other events. For example, all statements we make relating to our estimated and projected costs, expenditures, cash flows, growth rates and financial results or our plans and objectives for future operations, growth initiatives, or strategies are forward-looking statements. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expected. Specific factors that could cause such a difference include, but are not limited to, those set forth in the summary below of the more significant risks related to our business and industry, our indebtedness and our common stock. This summary does not contain all the information that may be important to you, and you should read this summary together with the more detailed discussion of risks and uncertainties set forth under Item 1A. "Risk Factors" and other important factors disclosed previously in our other filings with the Securities and Exchange Commission ("SEC") which include, but are not limited to, the risks detailed in "Risk Factors—Risk Factor Summary."

Risks relating to our business and industry include, among others:

- our ability to adapt to rapid technological change, evolving industry standards and changing customer needs, requirements or preferences;
- our ability to enhance and deploy our cloud-based offerings while continuing to effectively offer our on-premise offerings;
- our ability to maintain or improve our competitive position;
- the impact of the COVID-19 pandemic;
- the impact on our business of a network or data security incident or unauthorized access to our network or data or our customers' data;
- the effects on our business if we are unable to acquire new customers, if our customers do not renew their arrangements with us, or if we are unable to expand sales to our existing customers or develop new solutions or solution packages that achieve market acceptance;
- our ability to manage our growth effectively, execute our business plan, maintain high levels of service and customer satisfaction or adequately address competitive challenges;
- our dependence on our senior management team and other key employees;
- our ability to enhance and expand our sales and marketing capabilities;
- our ability to attract and retain highly qualified personnel to execute our growth plan;
- the risks associated with interruptions or performance problems of our technology, infrastructure and service providers;
- our dependence on third-party cloud infrastructure services, such as Amazon Web Services ("AWS");

- the impact of data privacy and cybersecurity concerns, evolving regulations of cloud computing, cross-border data transfer restrictions and other domestic and foreign laws and regulations; and
- the impact of volatility in quarterly operating results.

Risks relating to our indebtedness include, among others:

- the impact of our existing indebtedness could adversely affect our business and growth prospects;
- the fact that we may still be able to incur substantially more indebtedness or make certain restricted payments, which could further exacerbate the risks associated with our substantial indebtedness, despite our current indebtedness levels and restrictive covenants;
- our ability to generate sufficient cash flow to service all of our indebtedness, and actions we may be forced to take to satisfy our obligations under such indebtedness, which may not be successful;
- the risks associated with the financing documents governing our 2021 Credit Facilities, as defined below, which restrict our current and future operations, particularly our ability to respond to changes or to take certain actions; and
- our ability to refinance our indebtedness.

Risks relating to our common stock include, among others:

- the risks associated with the provisions of our corporate governance documents that could make an acquisition of us more difficult and may prevent attempts by our shareholders to replace or remove our current management, even if beneficial to our shareholders;
- Vista Equity Partners' ("Vista") influence on certain of our corporate actions, which may conflict with our or your interests in the future;
- the risks associated with the designation of the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation that may be initiated by our shareholders in our certificate of incorporation, which could limit our shareholders' ability to obtain a favorable judicial forum for disputes with us;
- the potential that an active, liquid trading market for our common stock may not be sustained, which may limit your ability to sell your shares; and
- the potential volatility of our operating results and stock price, and the potential that the market price of our common stock may drop below the price you paid.

Given these factors, as well as other variables that may affect our operating results, you should not rely on forward-looking statements, assume that past financial performance will be a reliable indicator of future performance, or use historical trends to anticipate results or trends in future periods. The forward-looking statements included in this Annual Report on Form 10-K relate only to events as of the date hereof. We undertake no obligation to update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

PART I.

Item 1. Business

Overview

Ping Identity's mission is to secure the digital world through intelligent identity. We deliver on this mission by providing intelligent identity solutions for the enterprise, leveraging artificial intelligence ("AI") and machine learning ("ML") to provide real-time authentication. We enable companies to achieve zero trust security by making identity frictionless, giving our customer the ability to go faster, get to the cloud and reduce costs, all while improving their end-user experiences.

We solve big problems for the world's largest enterprises. We serve more than half of the Fortune 100, and we have partnerships with companies such as Microsoft and Amazon. We serve a broad range of vertical markets with particular strength in financial services, healthcare, technology, aerospace, and retail, especially among the Global 5000.

Ping Identity's platform enables a range of use cases for workforces, for partners, and for a wide variety of consumer-facing applications. Our solutions and solution packages can be deployed as software-as-a-service ("SaaS"), as on premises software, or as hybrid. We also provide flexibility to deploy our SaaS solutions in Ping Identity's cloud, the customer's private cloud, or in a public cloud. We have consistently been recognized as a leader in the Identity and Access Management ("IAM") industry by Gartner and other analysts. For example, Gartner's Magic Quadrant research on access management has named Ping Identity a leader for the last five years. Other analysts that have named Ping Identity a leader in 2021 include KuppingerCole, ISG and Quadrant Knowledge Solutions for reports covering identity solutions for Customers, Workforce, and Internet of Things ("IoT").

Our Growth Strategy

Ping Identity solutions live in a world that is increasingly borderless – both geographically and virtually. Enterprises are undergoing an acceleration of their digital transformation initiatives as they seek to adapt to work-from-home realities, create new revenue streams, transition to new digital business models and increase customer engagement. This transformation creates vast distribution requirements extending well beyond the traditional network security perimeter. These requirements create business opportunities with a potential market that management estimates at $50 billion, based on our internal analysis. We quantify our market opportunity by identifying the total number of global companies above $500 million in annual revenue as identified by D&B Hoovers and segmenting these companies into four revenue bands. We then multiply the number of companies within each revenue band by our internal Annual Recurring Revenue ("ARR") data for that revenue band, assuming deployment of all our solutions and use cases at each of the companies, and apply an estimated market growth rate. For the definition of ARR and a description of how we calculate this metric, see "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Growth in the IAM market is driven by several factors:

- governmental and private-sector cybersecurity mandates;
- increasingly complex regulatory and compliance requirements;
- demand for better user experiences;
- escalating privacy concerns; and
- the need to have secure connections anywhere, anytime, agnostic to geographic location.

In order to address opportunities in the IAM market, we have focused our growth strategy on five core themes:

- ***Ongoing movement to cloud and SaaS.*** Companies are increasingly adopting IAM solutions in the cloud to support their hybrid application portfolios. These solutions often utilize our SaaS-based solutions in combination with deployments of our platform in their public or private clouds of choice to address a broad range of requirements. Our SaaS revenue increased by 51% for the year ended December 31, 2021 as compared to December 31, 2020. We see these trends continuing as we move forward.

- ***Greater uptake in our customer-based use cases driven by consumer demand.*** While we continue to see strong adoption of our workforce solutions, increasingly enterprises are turning to Ping to solve problems for their consumer-facing solutions. For the year ended December 31, 2021,the proportion of ARR from customer use cases relative to workforce use cases was greater than 55%.

- ***A go-to-market effort that will put an emphasis not only on direct sales but, increasingly, on leverage through the channel.*** Historically, our go-to-market effort has focused more exclusively on direct sales, but increasingly, we are engaging channel and integration partners to extend our reach. With that as a focus, in 2021 we put emphasis on partner certifications, and now have more than 184 partners certified to sell our solutions and 363 partners certified to install and integrate them for our customers.

- ***A continued pace of product introductions, allowing further penetration of our existing customer base.*** We have expanded our suite of services from six to twelve solutions over the last three years. As of December 31, 2021, 52% of customers leveraged at least two Ping Identity solutions, with 26% using three or more. Our net retention rate increased from 108% as of December 31, 2020 to 112% as of December 31, 2021, driven primarily by additional sales into our existing customer base and an increase in customers electing to execute larger contracts in response to the strengthening economic outlook and easing of COVID-19 restrictions in certain markets. For the definition of net retention rate and a description of how we calculate this metric, see "Management's Discussion and Analysis of Financial Condition and Results of Operations."

- ***Entry into new markets.*** We continue to build our market presence, both domestically and internationally. In the current year, we added a new Chief Revenue Officer who brought significant international expertise. We also continued to expand our sales team, allowing further penetration into the Global 5000 and beyond. For the year ended December 31, 2021, our international revenue was 26% of our total revenue, up more than 20% from the year ended December 31, 2020. We have also added a team dedicated to building our footprint with the U.S. federal government, working through our reseller and distribution partners. In 2021, we received our FedRAMP sponsorship from the Department of Energy, and as such, expect to make our PingOne for Government service broadly available in 2022.

The Ping Intelligent Identity Platform

We enable secure access to any service, application or API from any device. Ping Identity's platform can leverage AI and ML to analyze device, network and user behavior data to make real-time authentication and security control decisions, enhancing the user experience. Our platform is designed to detect anomalies and automatically insert additional security measures, such as multifactor authentication ("MFA"), only when necessary ("Ping Intelligent Identity Platform").

The Ping Intelligent Identity Platform provides the following key benefits:

- intelligent authentication of users based on contextual signals and risk attributes;

- one platform for all primary use cases;

- flexible SaaS and hybrid deployment options;

- turnkey integrations across cloud and on-premise applications;

- high standards for critical security and resiliency; and
- scalable to billions of identities.

The Ping Intelligent Identity Platform supports all primary use cases

- *Customer*. Our platform helps enterprises acquire, retain and better engage with their customers by providing seamless, secure and personalized access to all digital services. This enhanced digital experience improves brand loyalty and drives additional revenue, while also strengthening security.
- *Workforce*. Our platform allows enterprises to provide their workforce with frictionless and secure access to all of their cloud and on-premise applications and APIs to enable better employee productivity.
- *Partner*. Our platform helps enterprises rapidly connect with partners and manage their access privileges when onboarding and offboarding users.
- *IoT*. Our platform is used to manage IoT identities, such as connected vehicles and consumer devices, and authenticate machine-to-machine and human-to-machine interactions.

The Ping Identity Intelligent Platform Supports Deployment Flexibility

We have designed our solutions and solution packages for flexible deployment because every enterprise has different customization, control, security and privacy needs. Our deployment options include:

- *Cloud.* Since 2018, Ping has invested significantly in building an intelligence-based cloud platform that provides experiences in the cloud consistent with our on-premises software, developed both internally and through acquired capabilities. Increasingly, we are adding SaaS services to this platform. These new services enable a comprehensive platform from which to secure customer and workforce identities, ensuring access to any resource or application from a single, intelligent, cloud-delivered identity platform.
- *Hybrid.* Enterprises have the flexibility to deploy the Ping Intelligent Identity Platform in a hybrid model, which can consist of deployments in Ping Identity's cloud or the customer's preferred cloud, combined with software deployed in the customer's on-premise environment or data center. For cloud-first enterprises that want to outsource IAM operations, PingOne Advanced Services leverages all of our software features in a private cloud environment, while providing access to our entire suite of SaaS services as well.
- *On-Premise.* Enterprises seeking the highest degree of control over security and privacy can deploy the Ping Intelligent Identity Platform in their on-premise environment or data center.

Our Solutions and Solution Packages

Ping Identity's platform consists of multiple solutions across the identity life cycle that can be purchased individually or as a set of integrated solutions for the customer, workforce, partner or IoT use case. Our modular design allows customers to easily integrate with existing applications and infrastructures and does not require an all-or-nothing rip and replace. Enterprises have long relied on rigid IT infrastructure, which over time can become cemented into hundreds of applications, making it unwieldy to manage. Ping Identity untangles the customized infrastructure through its flexible services and solutions, creating a seamless fabric of security that resides underneath users and their devices. Ping Identity envisions a world where zero trust is foundational, where everyone – and every device – is strongly authenticated and appropriately authorized.

Single Sign-On. ("SSO") Our SSO solution allows users to sign on using one set of secure credentials, giving them one-click access to their applications and resources regardless of location. Our SSO solution provides turnkey integrations for a wide range of applications, cloud services, IT infrastructures and directory solutions, including third party directories, as well as our Directory solution. Within our SSO solution, our adaptive authentication policies enable organizations to predictively authenticate users in real-time based on device, network, application and user behavior data.

Multi-Factor Authentication. Our adaptive MFA solution helps optimize the balance between security and user experience by enforcing additional authentication factors as necessary when accessing sensitive resources, conducting high-value transactions and engaging in other elevated risk scenarios. Adaptive MFA allows users to conduct low-value transactions from trusted devices without interruption, while prompting MFA during high-value transactions, activity from untrusted devices and networks or in response to anomalous behavior. Our MFA solution works across use cases with personal or corporate-owned mobile devices and integrates with enterprise mobility management and mobile device management solutions. We offer PingOne MFA, which provides strong authentication of consumer identities, as a SaaS solution.

Access Security. Our Access Security solution allows enterprises to apply a greater depth of security control over their web applications and APIs in any domain for users on any device. We offer a comprehensive policy engine down to the URL level that is designed to ensure only an authorized user can access resources. Our solution evaluates access decisions in real-time based on network, browser and authentication attributes, while continuously validating the risk profile of the user or device.

Directory. Our Directory solution securely stores and manages sensitive identity and device data at scale. It includes real-time, bidirectional synchronization capabilities to migrate or sync data from multiple sources into a secure, scalable and unified profile. This single source of data is designed to provide a consistent experience across digital business interactions, no matter where the applications and services are deployed.

Dynamic Authorization. Our Dynamic Authorization solution provides centralized, fine-grained control over access to sensitive identity and device data across use cases. This gives organizations a centralized, drag-and-drop administration portal to restrict internal and external applications from accessing specific identity attributes such as social security numbers, credit card numbers, billing addresses or the entire user profile. Data access policies can evaluate attributes and preferences of the profile being requested, data from other repositories and information about the application and user making the request. Our Dynamic Authorization solution enables enterprises to comply with a broad range of regulatory requirements, such as the General Data Protection Regulation (the "GDPR"), the California Consumer Privacy Act (the "CCPA") and others by restricting data that a user has not consented to share and denying access to personal information that applications and users do not need to perform their tasks.

Risk Management. Our Risk Management solution enables organizations to make smarter authentication decisions by using machine learning and analytics to detect malicious activity. Our solution continuously analyzes multiple risk signals to give organizations in-depth user behavior insights to understand the risk in giving a user access to a resource or application. This provides enterprises with the ability to make real-time authentication decisions in determining if a user can access a resource, require additional assurances through step-up authentication or is denied access. Our Risk Management solution enables organizations to create intelligence-based policies to apply the appropriate strong authentication for resources or provide trusted users with a passwordless experience. We offer PingOne Risk, which detects threats in real time to strengthen authentication and reduce log-in fraud, as a SaaS solution.

Identity Verification. Our Identity Verification solution enables enterprises to allow their customers to securely and conveniently verify their identity during enrollment and registration. This provides organizations with an increased level of assurance in the identity of their customers during the onboarding process to prevent fraudulent account creation and activity. Our solution can be integrated into an organization's mobile application to prompt customers to provide a live face capture and to scan a government-issued ID using their mobile device. The customer's identity is verified using our solution by matching the live face capture to the image on the government ID and validating the identification document for authenticity. Our Identity Verification solution assists enterprises in regulated industries, such as financial services and insurance, to meet Know Your Customer ("KYC") requirements by providing customers a method to prove their identity. We offer PingOne Verify, which streamlines identity verification when customers create new accounts, enroll in new services, or in other cases where risk is elevated, as a SaaS solution.

API Intelligence. Our API Intelligence solution can apply AI and ML to continuously inspect, report and act on all API activity. Our solution is purpose-built to recognize and respond to attacks that are designed to exploit the unique vulnerabilities of individual APIs. These attacks often go undetected by traditional security tools, such as application firewalls and API gateways. We offer PingOne API Intelligence, which secures all API transactions, as a SaaS solution.

Orchestration. In September 2021, we acquired Singular Key, Inc. ("Singular Key"), a provider of no-code identity and security orchestration to accelerate our entry into the identity orchestration arena. Singular Key's technology streamlines the integration of identity services, providing a no-code method of creating workflows across multiple identity platforms, including identity verification, fraud, risk, access management, privileged access and identity governance into a unified identity fabric. Beginning in the first quarter of 2022, this technology is available through the PingOne Cloud Platform as PingOne DaVinci, enabling Ping Identity's current and future customers to optimize end-to-end user journeys across third party and Ping Identity systems.

Fraud Detection. In June 2021, we acquired SecuredTouch, Inc. ("SecuredTouch"), an Israeli-based company with fraud and bot-detection services that allowed us to speed the introduction of PingOne Fraud, a SaaS solution. PingOne Fraud combines real-time behavioral navigation, behavioral biometrics, device attributes, network attributes and much more to detect sophisticated fraud attacks, while ensuring a straight-forward customer experience for trusted users. It conducts individual customer session analysis and produces a risk score to incorporate into your fraud detection policies.

Our Technology

Our technology has been developed using industry standards and best practices for security, performance, scale and interoperability. Our platform is built on the following core tenets:

- *Open Standards.* We pioneered open identity standards that reduce the cost and complexity of interoperability and integration between IT vendors and partners. We also participated in the creation of many of the Internet Engineering Task Force standards in the identity space and continue to support the evolution and creation of new standards.

- *Turnkey Integrations.* We provide a broad range of out-of-the-box adapters for "first-mile" and "last-mile" integration to cloud and on-premise applications and other systems. For example, we integrate with major enterprise identity systems, such as Broadcom, IBM, Oracle and Microsoft, as well as environments and application platforms such as Apache, Java, IIS, NGINX and WebSphere. In addition, we provide an extensive set of SaaS and social identity connectors that provide full integration with API functions. For example, our ServiceNow integration leverages over 20 user attributes. We also have out-of-the-box integrations with a variety of cloud-based and on-premise data sources, adaptive authentication providers and security and intelligence service providers.

- *Artificial Intelligence and Machine Learning.* Our API Intelligence solution utilizes our proprietary AI/ML capabilities to continuously inspect, report and act on all API activity. We are in the process of leveraging and expanding these AI/ML capabilities across our broader platform to deliver Intelligent Identity security based on device, network, application and user behavior data instead of manual rules and policies. Our core identity and access management solutions provide the flexibility to be deployed with AI, ML and risk management capabilities that Ping Identity has developed, as well as to integrate with AI, ML and risk management capabilities licensed from third parties. Our platform's goal is to deliver password-less, zero-login capabilities to secure access and enhance user experience. See

"Risk Factors — Risks Related to our Business — We rely on software and services from other parties. Defects in or the loss of access to software or services from third parties could increase our costs and adversely affect the quality of our solutions."

- *Uptime and Availability.* We provide critical uptime and offer advanced redundancy features such as off-line modes to ensure services are available even when internet connectivity is lost. Our multi-tenant cloud-based offering is hosted in multiple regions around the world for redundancy and continuity. Our maintenance windows do not require any downtime, and our platform offered 99.99% uptime across our customer base over the past 12 months.

- *Scalability and Performance.* Our platform can scale to millions of identities and thousands of cloud and on-premise applications in a single deployment. We are built to scale for 3 billion-plus individual and machine identities globally at speeds that allow for up to 50,000 unique authentications per second.

- *Self-service.* Self-service is becoming increasingly important as IT and IAM teams with limited resources seek to provide centralized IAM to the entire enterprise. The ability for developers to directly integrate identity into their applications accelerates the adoption of identity within the enterprise. Ping Identity's Orchestration solution offers customers a no-code/low-code method of creating workflows across multiple identity platforms, including identity verification, fraud, risk, access management, privileged access and identity governance into a unified identity fabric. This allows customers to improve deployment speed, accelerate cloud migration, reduce costs and lower the risk associated with vendor lock-in.

- *Security by Design.* We integrate security into all of our solutions. Our security analysts maintain the security of our solutions by monitoring core services, both corporate and customer-facing, for indications of attack or compromise. We partner with trusted third party security firms to perform full-scope assessments and additional architectural reviews of our solutions. We also engage with third-party audit firms to perform SOC2 Type II audits, and ISO 27001-2013 certification of our security program.

Sales and Marketing

Sales

We sell our solutions primarily through direct sales. We have a stratified direct sales organization that is organized by customer size and the type of solution and deployment. Within our sales organization, our strategic account executives focus on the largest and most complex enterprises, primarily in the Fortune 1000, that typically purchase multiple products or deployment options. In the last two years, we have also built a sales team focused more intensely on the Global 5000, with account executives that target less complex enterprise customers that typically purchase a single capability or use case upfront and then expand as the complexity of their requirements expand.

Our direct sales are enhanced by collaboration with our channel partners in sourcing new leads, aiding in pre-sale processes such as proof of concepts, demos or requests for proposals and reselling our solutions to customers, as well as collaboration with our system integrators and technology partners. We also leverage a number of our channel partners and system integrators to provide the implementation services for some of our larger and more complex deployments, significantly increasing the time-to-value for our customers and maximizing the efficiency of our go-to-market efforts.

Marketing

We focus our marketing strategy on building brand recognition through thought leadership and differentiated messaging that communicates the business value of our platform. Our efforts include content marketing, social media, SEO, events and public and analyst relations. We convert this brand awareness into our pipeline through campaigns that integrate digital, social, web and field marketing tactics aimed at adding new customers and cross-marketing our solutions into our existing customer base. We host user conferences to tap into the power of our passionate customer base and our broader ecosystem.

Our Customers

At December 31, 2021, we had 1,468 customers. Our customer base is comprised of over half of the Fortune 100. As of December 31, 2021, our customer base included the 9 largest U.S. banks (measured by assets), 7 of the 10 largest healthcare companies (measured by revenue), 5 of the 8 largest North American retailers (measured by revenue), 4 of the 6 largest global aerospace companies (measured by revenue) and the 4 largest European auto manufacturers (measured by revenue). Our customer base is diversified, with no one customer or reseller accounting for more than 2% or 6% of our total revenue, respectively, for the year ended December 31, 2021.

We also have a highly satisfied customer base, as evidenced by our Net Promoter Score of 61 in 2021. This score is a measure of customer satisfaction determined through customer satisfaction surveys, that ask customers, on a scale from zero to ten, how likely they are to recommend Ping Identity to a friend or colleague. Scores can range from -100 to +100. The survey is sent to all Ping Identity customers on an annual basis. We define a customer as a separate legal entity with an individual subscription agreement and include in our customer count entities which we have sold directly and entities that have purchased one or more solutions from a reseller.

Partnerships and Strategic Relationships

The PingPartner Network is comprised of key partnerships across our solution provider and technology alliance programs. This global network delivers expertise, value-added services and technology that are critical to the success of our customers.

Solution Provider Program

We have built strong relationships with channel partners, system integrators and technology partners that have allowed us to generate new business opportunities and enhance existing practices such as strategic planning, program management, architecture, design, implementation, ongoing change management and support.

Technology Alliance

We have built a broad ecosystem of over 100 technology partners. Our Technology Alliance Partner ecosystem spans the landscape of IAM and related technologies, giving our customers access to comprehensive, cross-application, integrated solutions. Our technology partners expand and extend the value of their solutions, and our solutions, by integrating their technology with the Ping Intelligent Identity Platform. Additionally, our partners provide us with complementary technology and sales and marketing collateral that help us to more effectively sell together.

We partner with Microsoft, and this partnership has led to key product integrations. Through our collaboration, customers can leverage our platform to connect to the Microsoft Azure or Office365 services and enjoy rapid deployments via our integrations. We also enable non-Microsoft applications and environments to be easily integrated into the Microsoft ecosystem. Lastly, our MFA solution works directly with Microsoft ADFS and AzureAD to provide enterprise-grade adaptive authentication to Microsoft’s cloud-based offerings.

We also partner with AWS to provide provisioning and deployment of our solutions to our customers through this collaboration. We offer AWS single sign-on integration for a leading enterprise cloud experience. We also offer a hybrid deployment that can scale across AWS for enterprise applications.

Professional Services and Customer Support

Professional Services

Our professional services organization helps customers architect, deploy, configure, extend and integrate our platform into their IT environments. We offer a variety of packaged and configured offerings and expert guidance that leverage our best practices and experience, all of which are available for our robust partner community to use or resell. We complement our professional services with formal instructor-led and web-based on-demand training courses.

Customer Support

We offer three tiers of support, each building on the previous tier to most closely align with a customer's requirements. Support is included for our cloud and on-premise offerings during the term of a customer's subscription. All support tiers offer maintenance releases, patches and access to our support services and portal. Our support portal offers customers documentation, how-to guides, videos and a community where our customers can ask questions and find answers. Our customer support organization includes experienced, trained personnel and engineering resources located around the world to provide 24x7x365 support for critical issues.

Research and Development

Innovation is at the core of what we do. Approximately one-third of our employees are devoted to research and development. Our research and development efforts are focused on building industry leading solutions, addressing all primary use cases, enhancing deployment flexibility and providing seamless integration across cloud and on-premise applications. We believe that the ongoing and timely development of new solutions and features is imperative to maintaining our competitive position. We continue to invest in our solutions across our development centers in Denver, Colorado; Austin, Texas; Tel Aviv, Israel; Vancouver, Canada; Bangalore, India; and Edinburgh, Scotland.

Intellectual Property

Our success depends in part on our ability to protect our intellectual property. We rely on copyrights and trade secret laws, confidentiality procedures, employment agreements and proprietary information and invention assignment agreements, trademarks and patents to protect our intellectual property rights.

We control access to, and use of, our solutions and other confidential information through the use of internal and external controls, including contractual protections with employees, contractors, customers and partners, and our software is protected by U.S. and international copyright and trade secret laws. Despite our efforts to protect our trade secrets and proprietary rights through intellectual property rights, licenses and confidentiality agreements, unauthorized parties may still copy or otherwise obtain and use our software and technology, and such risks may increase as we attempt to expand into jurisdictions where such rights are less easily enforced, or are more subject to reverse engineering or misappropriation due to local legal requirements.

As of December 31, 2021, we had 42 issued United States patents and 15 patent applications pending in the United States relating to certain aspects of our technology. Our issued United States patents expire between December 14, 2031 and October 17, 2039. We cannot assure you whether any of our patent applications will result in the issuance of a patent or whether the examination process will require us to narrow our claims. Any of our existing patents and any that are issued in the future may be contested, circumvented, found unenforceable or invalidated, and we may not be able to prevent third parties from infringing them. In addition, we have international operations and intend to continue to expand these operations, and effective patent, copyright, trademark and trade secret protection may not be available or may be limited in foreign countries.

Competition

We face competition from (1) legacy providers, (2) cloud-only providers and (3) homegrown solutions.

Legacy providers include Broadcom, IBM and Oracle, among others. These providers generally designed their solutions when enterprise applications were monolithic and on-premise. Their solutions utilize proprietary architectures, which require customized features and integrations to scale. Today, these solutions have the reputation of being complex, costly and increasingly fragile. Thus, legacy providers often struggle to offer a single comprehensive solution that spans all IT environments, including cloud and on-premise.

We also compete with cloud-only providers, such as Okta and One Identity. These providers have solutions that are historically geared towards small and medium-sized businesses that have IT infrastructures hosted entirely in the cloud. The vast majority of large enterprises do not have the ability to operate their businesses solely with cloud infrastructures, and thus require enterprise solutions that support complex hybrid IT environments and the wide variety of applications and workloads found in enterprise IT portfolios. Thus, a cloud-only IAM solution cannot deliver a single comprehensive solution that enterprises require to provide end-to-end coverage across their complex IT landscape.

Microsoft also competes in our market and has tied its identity services to both Azure and its Office365 offerings. However, we partner with Microsoft to provide SSO, security control and adaptive MFA where non-Microsoft environments require integration or independence is preferred. Microsoft's integration and interoperability with our solutions benefits enterprises while providing optionality and choice. We also compete against providers such as ForgeRock, that offers highly customizable solutions for both the customer and workforce use case and on-premise and cloud deployment options. We believe that these solutions require a longer and less predictable timeline for implementation due to custom coding requirements, while Ping Identity is typically able to offer more efficient and predictable implementation of its enterprise products.

We believe the principal competitive factors in the IAM market include: (1) the ability to address all primary use cases from one platform; (2) the ability to deploy in large, complex hybrid IT environments; (3) the ability to integrate easily with all applications (cloud and on-premise); (4) technology uptime, reliability, scalability and performance; (5) the ability to support open standards; and (6) customer, technology and platform support. We believe we compete favorably on these factors.

Human Capital Disclosures

Ping Identity is committed to championing and protecting every identity, from our customers to those of our most valuable asset: our employees. Trust is core to who we are and to what we do, and we understand that how we work together is just as important as what we accomplish. We are committed to treating all who enter the Ping Identity ecosystem with respect and honesty.

Our Employees

We recognize that our ability to attract, develop and retain talent is key to our success. As of December 31, 2021, we employed 1,247 employees worldwide, with 67% located in the U.S. and 33% located abroad.

Diversity, Equity, and Inclusion ("DEI")

At Ping Identity, we are committed to championing and embracing diversity, equity, and inclusivity. We believe that innovation and creativity is maximized through having and supporting a diverse and inclusive workforce. In 2021, to further our commitment we hired our first Director of DEI to lead our DEI initiatives.

We employ inclusive recruitment and hiring practices to source diverse talent and mitigate potential bias throughout the hiring process. We also continue to recruit from a broad range of colleges and engage with organizations that support diverse students and jobseekers.

Our employees are invited to participate in our internal employee resource groups ("ERGs"), which seek to engage, connect and create a supportive environment for our employees. ERGs are comprised of employees who are linked by social factors such as culture, gender, sexual orientation, or by a common interest or goal. These employee-led groups foster diverse and inclusive workplaces aligned with our values, objectives and business practices.

Career Development

At Ping Identity, we have a Learning and Performance Department with the mission to ensure that each of our valued employees achieves professional excellence which then enables them to actively contribute to the effectiveness and excellence of our company. Our Learning and Performance and Human Resources Departments collaborate with other Ping Identity departments across the organization to assist employees in achieving high performance. At Ping Identity, we strive to deliver world-class learning opportunities to improve employee performance, reduce risk and regulatory noncompliance, and deliver an extraordinary customer experience. We are offer a variety of opportunities for our employees to accelerate their success and grow their careers, including on-the-job training, education reimbursement program, professional and technical certifications and training classes and courses.

Compensation and Benefits

Compensation

At Ping Identity we are committed to providing fair, market competitive pay that supports the needs of our employees and also engages our employees to achieve goals related to our success. Our strategy includes base salary, short-term company bonus or sales-related commission, and long-term incentive through employee equity awards for eligible employees.

We are committed to pay equity at Ping. We believe fair and unbiased compensation is a critical component to inclusive culture and ultimately helps us attract and retain the highest caliber talent. As part of our commitment to pay equity and in addition to our internal practices to drive pay equity, in 2020, Ping engaged an independent third party to conduct a pay equity analysis to help ensure that our compensation practices and structure are equitable. Ping Identity intends to continue prioritizing pay equity and we plan to continue to conduct third party pay equity analyses on a rolling basis.

Benefits

In addition to competitive pay, our total rewards program includes comprehensive and inclusive employee benefits and a variety of other health and wellness options. Our benefits and perks include a 100% Ping Identity paid healthcare option, 100% paid parental leave, retirement savings with employer match, unlimited PTO, commuter offset, fitness stipend, in-office snacks and drinks, and charitable giving match. Ping Identity is also proud to offer inclusive benefits for our employees who undergo or are pursuing gender transition.

We evaluate benefits plans against competitors and locally provided entitlements each year to ensure they meet the evolving needs of our employees.

Company Ethos and Ethics

Conducting our business ethically and in a socially responsible way is one of the core pillars of our foundation at Ping Identity. All employees adhere to our Employee Handbook which outlines our values, security guidelines, and codes of conduct along with other internal policies and procedures. Our Code of Ethics applies to all employees including all executive officers and directors and is available on our web site. The information contained on, or that can be accessed through, our website is not incorporated by reference into this annual report, and you should not consider any information contained on, or that can be accessed through, our website as part of this Annual Report on Form 10-K.

Ping in the Community

We strive to be a good corporate citizen and leave a positive impact in the communities where we operate. In 2021, Ping Identity prioritized community volunteerism, service and charitable donations supporting education and local initiatives by partnering with local educational organizations to support female students interested in STEAM fields, establishing a four-year college scholarship for an underrepresented minority student, establishing an employee day of service and charitable contribution matching program for employees. As we develop and grow our DEI strategy and plan, we intend to work with our ERGs to help us identify additional communities, service opportunities, and charities that are significant to their members.

Health, Safety and Wellness

Team member health and safety is core to our successful operations across all areas of our business. We provide our employees and their families with access to a variety of health and wellness programs, including benefits that support their physical and mental health.

In response to the COVID-19 pandemic, we implemented changes to protect the health and safety of our employees, including:

- building a COVID-19 Response Team comprised of facilities, security, HR, IT and business leaders;
- implementing office closures as required so non-essential employees could work remotely; and
- conducting several pulse surveys of our team members, with special focus on our COVID-19 response and opportunities for improvement to ensure we understood team member concerns and could proactively address those concerns.

We believe we have been able to preserve our business continuity without sacrificing our commitment to keeping our employees safe during the COVID-19 pandemic. We will continue to monitor the impact of COVID-19 to ensure that we continue to operate safely for all stakeholders.

Corporate Information

Our principal executive offices are located at 1001 17th Street, Suite 100, Denver, Colorado 80202. Our telephone number is (303) 468-2900. Our website address is www.pingidentity.com. The information contained on, or that can be accessed through, our website is not incorporated by reference into this annual report, and you should not consider any information contained on, or that can be accessed through, our website as part of this Annual Report on Form 10-K. We are a holding company and all of our business operations are conducted through our subsidiaries. We were incorporated in 2016 as Roaring Fork Holding, Inc. and changed our name to Ping Identity Holding Corp. in connection with our initial public offering (“IPO”).

This Annual Report on Form 10-K includes our trademarks and service marks such as “Ping Identity” which are protected under applicable intellectual property laws and are the property of us or our subsidiaries. This report also contains trademarks, service marks, trade names and copyrights of other companies, such as “Amazon,” “Google” and “Microsoft,” which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this report may appear without the ® or ™ symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensor to these trademarks and trade names.

Available Information

We make available, free of charge through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K, and amendments to those reports, filed or furnished pursuant to Sections 13(a) or Section 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after they have been electronically filed with, or furnished to, the SEC.

The SEC also maintains a website (www.sec.gov) that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

Item 1A. Risk Factors

A description of the risks and uncertainties associated with our business is set forth below. You should carefully consider the risks described below, together with the financial and other information contained in this Annual Report on Form 10-K. If any of the following risks actually occurs, our business, financial condition, results of operations, cash flows and prospects could be materially and adversely affected. As a result, the trading price of our common stock could decline and you could lose all or part of your investment in our common stock.

Risk Factors Summary

Set forth below is a summary of the more significant risks related to our business and industry, our indebtedness and our common stock. This summary does not contain all the information that may be important to you, and you should read this summary together with the more detailed discussion of risks and uncertainties set forth following this summary.

Risks relating to our business and industry include, among others:

- our ability to adapt to rapid technological change, evolving industry standards and changing customer needs, requirements or preferences;
- our ability to enhance and deploy our cloud-based offerings while continuing to effectively offer our on-premise offerings;
- our ability to maintain or improve our competitive position;
- the impact of the COVID-19 pandemic;
- the impact on our business of a network or data security incident or unauthorized access to our network or data or our customers' data;
- the effects on our business if we are unable to acquire new customers, if our customers do not renew their arrangements with us, or if we are unable to expand sales to our existing customers or develop new solutions or solution packages that achieve market acceptance;
- our ability to manage our growth effectively, execute our business plan, maintain high levels of service and customer satisfaction or adequately address competitive challenges;
- our dependence on our senior management team and other key employees;
- our ability to enhance and expand our sales and marketing capabilities;
- our ability to attract and retain highly qualified personnel to execute our growth plan;
- the risks associated with interruptions or performance problems of our technology, infrastructure and service providers;
- our dependence on third-party cloud infrastructure services, such as Amazon Web Services ("AWS");

- the impact of data privacy and cybersecurity concerns, evolving regulations of cloud computing, cross-border data transfer restrictions and other domestic and foreign laws and regulations; and

- the impact of volatility in quarterly operating results.

Risks relating to our indebtedness include, among others:

- the impact of our existing indebtedness could adversely affect our business and growth prospects;

- the fact that we may still be able to incur substantially more indebtedness or make certain restricted payments, which could further exacerbate the risks associated with our substantial indebtedness, despite our current indebtedness levels and restrictive covenants;

- our ability to generate sufficient cash flow to service all of our indebtedness, and actions we may be forced to take to satisfy our obligations under such indebtedness, which may not be successful;

- the risks associated with the financing documents governing our 2021 Credit Facilities, as defined below, which restrict our current and future operations, particularly our ability to respond to changes or to take certain actions; and

- our ability to refinance our indebtedness.

Risks relating to our common stock include, among others:

- the risks associated with the provisions of our corporate governance documents that could make an acquisition of us more difficult and may prevent attempts by our shareholders to replace or remove our current management, even if beneficial to our shareholders;

- Vista Equity Partners' ("Vista") influence on certain of our corporate actions, which may conflict with our or your interests in the future;

- the risks associated with the designation of the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation that may be initiated by our shareholders in our certificate of incorporation, which could limit our shareholders' ability to obtain a favorable judicial forum for disputes with us;

- the potential that an active, liquid trading market for our common stock may not be sustained, which may limit your ability to sell your shares; and

- the potential volatility of our operating results and stock price, and the potential that the market price of our common stock may drop below the price you paid.

Risks Relating to Our Business and Industry

If we fail to adapt to rapid technological change, evolving industry standards and changing customer needs, requirements or preferences, our ability to remain competitive could be impaired.

The IAM market is characterized by rapid technological change, evolving industry standards and changing regulations, as well as changing customer needs, requirements and preferences. The success of our business depends, in part, on our ability to anticipate, adapt and respond effectively to these changes on a timely and cost-effective basis. In addition, as our customers' technologies and business plans grow more complex, we expect them to face new and increasing challenges. Our customers require that our platform effectively identify and respond to these challenges without disrupting the performance of our customers' IT systems or interrupting their business operations. As a result, we must continually modify and improve our offerings in response to changes in our customers' IT infrastructures and operational needs or end-user preferences. The success of any enhancement to our existing offerings or the deployment of new offerings depends on several factors, including the timely completion and market acceptance of our enhancements or new offerings. Any enhancement to our existing offerings or new offerings that we develop and introduce involves significant commitment of time and resources and is subject to a number of risks and challenges including:

- ensuring the timely release of new solutions, solution packages and solution enhancements;
- adapting to emerging and evolving industry standards, technological developments by our competitors and customers and changing regulatory requirements;
- interoperating effectively with existing or newly-introduced technologies, systems or applications of our existing and prospective customers;
- resolving defects, errors or failures in our platform, solutions or solution packages;
- extending the operation of our offerings and services to new and evolving platforms, operating systems and hardware products, such as mobile and IoT devices; and
- managing new solution, solution package and service strategies for the markets in which we operate.

If we are not successful in managing these risks and challenges, or if our new solutions, solution upgrades and services are not technologically competitive or do not achieve market acceptance, our business, results of operations and financial condition could be adversely affected.

If we are unable to enhance and deploy our cloud-based offerings while continuing to effectively offer our on-premise offerings, our business and operating results could be adversely affected.

Historically, our revenue has been driven predominately by our on premise offerings. For the year ended December 31, 2021, $172.5 million, or 58%, of our total revenue was from subscription term based licenses, whereas $57.6 million, or 19%, of our total revenue was from subscription SaaS and $49.2 million, or 16% was from maintenance and support. For the year ended December 31, 2020, $144.5 million, or 59%, of our total revenue was from subscription term based licenses, whereas $38.1 million, or 16%, of our total revenue was from subscription SaaS and $41.5 million, or 17%, was from maintenance and support. For the year ended December 31, 2019, $161.4 million, or 66%, of our total revenue was from subscription term based licenses whereas $26.6 million, or 11%, of our total revenue was from subscription SaaS and $37.3 million, or 15%, was from maintenance and support. The remainder of our revenue, or $20.2 million, $19.5 million, and $17.6 million for the years ended December 31, 2021, 2020 and 2019, respectively, was attributable to professional services and other. We have responded to the increasing market shift toward cloud based services by developing and introducing additional cloud based IAM offerings to our customers. While our customers are increasingly adopting our cloud based offerings, we expect our customers to continue to require substantial on premise and hybrid offerings. To support hybrid deployment of our offerings, our developers and support team must be trained on and learn multiple environments in which our platform is deployed, which is more expensive than supporting a cloud only or on-premise-only offering. Moreover, we must engineer our software for on premise, cloud and hybrid deployments, which we expect will result in additional research and development expense that may impact our operating results. Furthermore, we cannot assure you that the market for cloud based offerings will develop at a rate or in the manner we expect or that our cloud based offerings will be competitive with those of more established cloud based providers or other new market entrants. We are directing a significant portion of our financial and operating resources to implement a robust and secure cloud based offering for our customers, but even if we continue to make these investments, we may be unsuccessful in growing or implementing our cloud based offerings in a way that competes successfully against our current and future competitors and in such event our business, results of operations and financial condition could be harmed. In addition, the costs associated with greater adoption of our cloud-based offerings could harm our margins, making it difficult to continue to justify the continued allocation of resources. Customers may require features and capabilities that our current solutions or solution packages do not have and that we may be unable to develop. If we are unable to develop and deploy cloud based offerings alongside on premise offerings that satisfy customer preferences in a timely and cost effective manner, it may harm our ability to renew subscriptions with existing customers and to create or increase demand for our solutions or solution packages with new customers, and may adversely impact our financial condition and results of operations.

We face intense competition, especially from larger, well-established companies, and we may lack sufficient financial or other resources to maintain or improve our competitive position.

The IAM market is intensely competitive, and we expect competition to increase in the future from established competitors and new market entrants. We face competition from (1) legacy providers, (2) cloud-only providers and (3) homegrown solutions. Legacy providers include Broadcom, IBM and Oracle, among others. We also compete with cloud-only providers, such as Okta and One Identity that primarily focus on the workforce use case. Microsoft also competes in our market and has tied its identity services to both its Azure and Office365 offerings. With the recent increase in large merger and acquisition transactions in the technology industry, particularly transactions involving cloud-based technologies, there is a greater likelihood that we will compete with other large technology companies in the future. For example, Amazon or Google could acquire or develop an IAM or identity security platform that competes directly with our solutions. These companies have significant name recognition, considerable resources and existing IT infrastructures and powerful economies of scale and scope, which allow them to rapidly develop and deploy new solutions. Many of our existing competitors have, and some of our potential competitors could have, substantial competitive advantages such as greater name recognition and longer operating histories, larger sales and marketing budgets and resources, broader distribution and established relationships with channel partners and customers, greater customer support resources, greater resources to make acquisitions, lower labor and development costs, larger and more mature intellectual property portfolios and substantially greater financial, technical and other resources.

In addition, some of our larger competitors have substantially broader product offerings and leverage their relationships based on other products they offer or incorporate functionality into existing products to gain business in a manner that discourages users from purchasing our solutions or solution packages, including through selling at zero or negative margins, product bundling or closed technology platforms. Potential customers may also prefer to purchase from their existing suppliers rather than a new supplier regardless of product performance or features. Our larger competitors often have broader product lines and market focus and are less susceptible to downturns in a particular market. Our competitors may also seek to repurpose their existing offerings to provide identity solutions with subscription models. Additionally, start-up companies that innovate and large competitors that are making significant investments in research and development may invent similar or superior products and technologies that compete with our solutions or solution packages.

Consolidation in the markets in which we compete may affect our competitive position. This is particularly true in circumstances where customers are seeking to obtain a broader set of solutions and services than we are currently able to provide. In addition, some of our competitors may enter into new alliances with each other or may establish or strengthen cooperative relationships with system integrators, third-party consulting firms or other parties. Any such consolidation, acquisition, alliance or cooperative relationship could lead to pricing pressure and loss of market share and could result in a competitor with greater financial, technical, marketing, service and other resources, all of which could harm our ability to compete. Furthermore, organizations may be more willing to incrementally add solutions to their existing infrastructure from competitors than to replace their existing infrastructure with our solutions or solution packages. These competitive pressures in our market or our failure to compete effectively may result in fewer orders and reduced revenue and gross margins. Any failure to meet and address these factors could adversely affect our business, results of operations and financial condition.

The COVID-19 pandemic continues to present uncertainty regarding our business operations, operating results, financial condition and prospects.

The severity, magnitude and duration of the COVID-19 pandemic is still uncertain, rapidly changing, hard to predict and depends on events beyond our knowledge or control. The COVID-19 pandemic has resulted in authorities implementing numerous measures to contain the virus and its variants, such as travel bans and restrictions, quarantines, shelter in place orders, shutdowns and vaccine mandates. These measures have impacted and may further impact all or portions of our facilities, workforce and operations, the behavior of our customers and consumers and the operations of our respective vendors and suppliers. In 2020 and 2021, some of our customers delayed purchasing decisions and opted for shorter contract durations, and even though global economic recovery was observed in the latter part of 2021, the sustainability of such recovery remains unclear, particularly as new variants of COVID-19 arise, and there is still a risk that customers may experience financial hardship that may result in delayed or uncollectible payments.

As a result of the continuing spread and impact of COVID-19 and related governmental measures, we may decide to postpone or cancel planned investments, or we may have to reduce headcount in certain areas, which may impact our ability to respond to our customers' needs and fulfill contractual obligations. In addition, we rely upon third parties for certain critical inputs to our business and solutions, such as data centers and technology infrastructure. Any disruptions to services provided to us by third parties due to the COVID-19 pandemic, including as a result of actions outside of our control, could significantly impact the continued performance of such solutions.

In addition, the COVID-19 pandemic has led to increased online transaction activity which has resulted in increased cyber and fraud risk. Additionally, the dispersed nature of our workforce may increase our cyber and fraud risk as our information technology and security teams must manage and secure equipment used by our employees remotely, and with our employees working more independently, there are increased opportunities for human error. We could experience direct financial loss, or be exposed to contractual or reputational liability, if we were affected by cyber security attacks or fraud. Further, significant management time and resources may be diverted from our ordinary business operations in order to develop, implement and manage workplace safety strategies and conditions as we attempt to return to office workplaces in the first half of 2022.

These and other impacts of the COVID-19 pandemic could have the effect of heightening many of the other risks described in the "Risk Factors" section, such as those relating to our reputation, product sales, results of operations or financial condition. We might not be able to predict or respond to all impacts on a timely basis to prevent near- or long-term adverse impacts to our results.

A network or data security incident or breach may allow unauthorized access to our network or data or our customers' data, harm our reputation, create additional liability and adversely impact our financial results.

Increasingly, companies are subject to a wide variety of attacks on their networks and systems. In addition to threats from traditional computer hackers, malicious code (such as malware, viruses, worms and ransomware), employee theft or misuse, password spraying, phishing and distributed denial-of-service ("DDOS") attacks, we now also face threats from sophisticated nation-state and nation-state supported actors who engage in attacks (including advanced persistent threat intrusions) that add to the risks to our internal networks, our platform, our third-party service providers and our customers' systems and the information that they store and process. Despite significant efforts to create security barriers to safeguard against such threats, it is virtually impossible for us to entirely mitigate these risks. As a well-known provider of IAM solutions, we pose an attractive target for such attacks. The security measures we have integrated into our internal networks and platform, which are designed to detect unauthorized activity and prevent or minimize security incidents and breaches, may not function as expected or may not be sufficient to protect our internal networks and platform against certain attacks. In addition, techniques used to sabotage or obtain unauthorized access to networks in which data is stored or through which data is transmitted change frequently and generally are not recognized until launched against a target. As a result, we may be unable to anticipate these techniques or implement adequate preventative measures to prevent an electronic intrusion into our networks.

If a breach of customer data security or unauthorized access to customer systems through our platform were to occur, as a result of third-party action, employee error, malfeasance or otherwise, and the confidentiality, integrity or availability of our customers' data or systems was disrupted, we could incur significant liability to our customers and to individuals or businesses whose information we process, and our platform may be perceived as less desirable, which could negatively affect our business and damage our reputation. In such event, the potential liability exposure to our customers under our contracts could significantly exceed the revenue associated with those contracts. Our ability to retain existing customers, expand use case and solution or solution package penetration with existing customers and acquire new customers is dependent upon our reputation as a trusted intelligent security provider. The importance of our reputation in retaining existing business and acquiring new business is heightened by our focus on enterprise customers. In addition, we have a number of customers that operate in highly-regulated industries where our customers' data is particularly sensitive, such as financial services and healthcare. A network or security breach could damage our relationships with customers, result in the loss of customers across one or more use case, solution or solution package and make it more challenging to acquire new customers and such damage would likely be heightened in the event a network or security breach occurred in the highly-regulated industries we serve. Because techniques used to obtain unauthorized access to, or sabotage, systems change frequently and may not be recognized until launched against a target, we and our customers may be unable to anticipate these techniques or implement adequate preventive measures.

In addition, security incidents impacting our platform or the systems of our third-party service providers could result in a risk of loss or unauthorized access to or disclosure of the information we process on behalf of our customers. This, in turn, could require notification under applicable data privacy regulations, and could lead to litigation, governmental audits and investigations and possible liability, damage our relationships with our existing customers, trigger indemnification and other contractual obligations, cause us to incur investigation, mitigation and remediation expenses, and have a negative impact on our ability to attract and retain new customers. Furthermore, any such incident, including a breach of our customers' systems, could compromise our networks or networks secured by our solutions, creating system disruptions or slowdowns and exploiting security vulnerabilities of our or our customers' networks, and the information stored on our or our customers' systems could be accessed or disclosed without authorization, altered, lost or stolen, which could subject us to liability and cause us financial harm. An actual or perceived breach of our networks, our customers' networks or other networks secured by our solutions, whether or not due to a vulnerability in our platform, may also undermine confidence in our platform or our industry and result in expenditure of significant resources in efforts to analyze, correct, eliminate or work around errors or defects, delayed or lost revenue, delay in the development or release of new solutions, solution packages or services, an increase in collection cycles for accounts receivable, damage to our brand and reputation, negative publicity, loss of channel partners, customers and sales, increased costs to remedy any problem, increased insurance expense and costly litigation. In addition, if a high-profile security incident occurs with respect to another IAM solution provider, our customers and potential customers may lose trust in the value of the IAM solution business model generally, including the security of our solutions, which could adversely impact our ability to retain existing customers or attract new ones, potentially causing a negative impact on our business. Any of these negative outcomes could adversely impact market acceptance of our solutions or solution packages and could adversely affect our business, results of operations and financial condition.

Third parties may attempt to fraudulently induce employees or customers into disclosing sensitive information such as user names, passwords or other information or otherwise compromise the security of our internal networks, electronic systems and/or physical facilities or those of our third-party service providers, in order to gain access to our data or our customers' data, which could result in significant legal and financial exposure, a loss of confidence in the security of our platform, interruptions or malfunctions in our operations, and, ultimately, harm to our future business prospects and revenue. We may be required to expend significant capital and financial resources to protect against such threats or to alleviate problems caused by breaches in security.

Our future revenue and operating results will be harmed if we are unable to acquire new customers, if our customers do not renew their arrangements with us, or if we are unable to expand sales to our existing customers or develop new solutions and solution packages that achieve market acceptance.

To continue to grow our business, it is important that we continue to acquire new customers. Our success in adding new customers depends on numerous factors, including our ability to (1) offer a compelling Intelligent Identity Platform and effective solutions and solution packages, (2) execute our sales and marketing strategy, (3) attract, effectively train and retain new sales, marketing, professional services and support personnel in the markets we pursue, (4) develop or expand relationships with channel partners, system integrators and technology partners, (5) expand into new geographies and vertical markets, (6) deploy our platform, solutions and solution packages for new customers and (7) provide quality customer support once deployed.

It is important to our continued growth that our customers renew their arrangements when existing contract terms expire. Our customers have no obligation to renew their subscription agreements, and our customers may decide not to renew these agreements with a similar contract period, at the same prices and terms or with the same or a greater number of identities, or at all. Our customer retention and expansion rates may decline or fluctuate as a result of a number of factors, including our customers' satisfaction with our solutions or solution packages, our customer support and professional services, our prices and pricing plans, the competitiveness of other IAM solutions and services, reductions in our customers' spending levels, user adoption of our solutions or solution packages, deployment success, utilization rates by our customers, new releases and changes to our solutions and/or solution packages. Additionally, new consolidations, acquisitions, alliances or cooperative relationships involving one or more of our customers may lead such customers not to renew their existing subscriptions with us.

Our ability to increase revenue also depends in part on our ability to increase the number of identities managed by our platform and sell more use cases, solutions and solution packages to our existing and new customers. Our ability to increase sales to existing customers depends on several factors, including their experience with implementing our solutions and solution packages and using our platform and the existing solutions they have implemented, their ability to integrate our solutions and solution packages with existing technologies and our pricing model. As we expand our market reach, we may experience difficulties in gaining traction and raising awareness among potential customers regarding the critical role that our solutions play in securing their businesses and we may face more competitive pressure in such markets.

If our new solutions and/or solution packages do not achieve adequate acceptance in the market, if we fail to effectively incorporate features and capabilities that our customers expect, or if we are otherwise unable to effectively sell these new solutions and/or solution packages, our competitive position could be impaired, and our potential to generate new revenue or to retain existing revenue could be diminished. The adverse effect on our financial results may be particularly acute because of the significant research, development, marketing, sales and other expenses we will have incurred in connection with the new solutions and solution packages and our ability to introduce compelling new solutions and solution packages that address the requirements of our customers in light of the dynamic IAM market in which we operate.

If we are unable to successfully acquire new customers, retain our existing customers, expand sales to existing customers or introduce new solutions and solution packages, our business, financial condition and operating results could be adversely affected.

If we fail to manage our growth effectively, we may be unable to execute our business plan, maintain high levels of service and customer satisfaction or adequately address competitive challenges.

We have experienced, and may continue to experience, rapid growth and organizational change, which has placed, and may continue to place, significant demands on our management and our operational and financial resources. Additionally, our organizational structure may become more complex as we improve our operational, financial and management controls, as well as our reporting systems and procedures. We may require significant capital expenditures and the allocation of valuable management resources to grow and change in these areas. If we fail to effectively manage our anticipated growth and change, the quality of our platform may suffer, which could negatively affect our brand and reputation and harm our ability to retain and attract customers and employees.

We currently have international operations in the United Kingdom ("U.K."), Canada, Australia, France, Germany, India, Israel, the Netherlands, New Zealand, and Italy, and we may continue to expand our international operations in these jurisdictions and/or other countries in the future. Our expansion has placed, and our expected future growth will continue to place, a significant strain on our managerial, customer operations, research and development, sales and marketing, administrative, financial and other resources. If we are unable to manage our continued growth successfully, our business and results of operations could suffer.

In addition, as we expand our business, it is important that we continue to maintain a high level of customer service and satisfaction. As our customer base continues to grow, we will need to expand our account management, customer service and other personnel, and our network of channel partners and system integrators, to provide personalized account management and customer service. If we are not able to continue to provide high levels of customer service, our reputation, as well as our business, results of operations and financial condition, could be adversely affected.

We depend on our senior management team and other key employees, and the loss of one or more of these employees or an inability to attract and retain other highly skilled employees could harm our business.

Our success depends largely upon the continued services of our senior management team and other key employees. We rely on our leadership team in the areas of research and development, operations, security, marketing, sales, customer support, general and administrative functions and on individual contributors in our research and development and operations functions. From time to time, there may be changes in our executive management team resulting from the hiring or departure of executives. For example, in 2021, our Chief Technology Officer, Chief Accounting Officer and Chief Legal Officer stepped down from their positions and their duties were assumed by new officers or other members of our senior management. While not seen in these instances, this type of turnover could distract our management team and disrupt our business. We do not have employment agreements with our executive officers or other key personnel that require them to continue to work for us for any specified period and, therefore, they could terminate their employment with us at any time. The loss of one or more the members of our senior management team, or other key employees could harm our business. In particular, the loss of services of our founder and Chief Executive Officer, Andre Durand, could significantly delay or prevent the achievement of our strategic objectives. Changes in our executive management team or departure of other key employees may also cause disruptions in, and harm to, our business.

Failure to effectively develop and expand our sales and marketing capabilities could harm our ability to increase our customer base and achieve broader market acceptance of our solutions and solution packages.

Our ability to increase our customer base and achieve broader market acceptance of our solutions and solution packages will depend on our ability to expand our sales and marketing operations. Our business will be harmed if our business development efforts do not generate a corresponding increase in revenue. We may not achieve anticipated revenue growth from expanding our direct sales force if we are unable to hire and develop talented direct sales personnel, if our new direct sales personnel are unable to achieve desired productivity levels in a reasonable period of time, or if we are unable to retain our existing direct sales personnel. There is significant competition for sales personnel with the advanced sales skills and technical knowledge we need. Selling our solutions and solution packages to sophisticated enterprise customers requires particularly talented sales personnel with the ability to communicate the transformative potential of our platform.

We must attract and retain highly qualified personnel in order to execute our growth plan.

Competition for highly qualified personnel is intense, especially for engineers experienced in designing and developing software and SaaS offerings and experienced sales professionals. In recent years, recruiting, hiring and retaining employees with expertise in our industry has become increasingly difficult as the demand for cybersecurity and identity professionals has increased as a result of the recent cybersecurity attacks on global corporations and governments. We have, from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications. In addition, we may experience employee turnover as a result of the ongoing "great resignation" occurring throughout the U.S. economy. New hires require training and take time before they achieve full productivity. New employees may not become as productive as we expect, and we may be unable to hire or retain sufficient numbers of qualified individuals. Many of the companies with which we compete for experienced personnel have greater resources than we have. If we hire employees from competitors or other companies, their former employers may attempt to assert that these employees or we have breached certain legal obligations, resulting in a diversion of our time and resources. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects could be harmed.

If there are interruptions or performance problems associated with our technology or infrastructure, our existing customers may experience service outages, and our new customers may experience delays in the deployment of our platform.

Our continued growth depends on the ability of our existing and potential customers to access our platform 24 hours a day, seven days a week, without interruption or degradation of performance. We have in the past and may in the future experience disruptions, outages and other performance problems with our infrastructure due to a variety of factors, including infrastructure changes, introductions of new functionality, human or software errors, capacity constraints, DDOS attacks or other security-related incidents. In some instances, we may not be able to identify the cause or causes of these performance problems immediately or in short order. We may not be able to maintain the level of service uptime and performance required by our customers, especially during peak usage times and as our solutions and solution packages become more complex and our user traffic increases. If our platform is unavailable or if our customers are unable to access our solutions or deploy them within a reasonable amount of time, or at all, our business would be harmed. The adverse effects of any service interruptions on our reputation and financial condition may be disproportionately heightened due to the nature of our business and the fact that our customers expect continuous and uninterrupted access to our solutions and have a low tolerance for interruptions of any duration. Since our customers rely on our solutions to provide and secure access to their IT infrastructures and to support customer-facing applications, any outage on our platform would impair the ability of our customers to operate their businesses, which would negatively impact our brand, reputation and customer satisfaction.

Moreover, we depend on services from various third parties to maintain our cloud infrastructure and deploy our solutions, such as AWS cloud infrastructure services, which hosts our platform. If a service provider fails to provide sufficient capacity to support our platform or otherwise experiences service outages, such failure could interrupt our customers' access to our services, which could adversely affect their perception of our platform's reliability and our revenue. Any disruptions in these services, including as a result of actions outside of our control, would significantly impact the continued performance of our solutions. In the future, these services may not be available to us on commercially reasonable terms, or at all. Any loss of the right to use any of these services could result in decreased functionality of our solutions until equivalent technology is either developed by us or, if available from another provider, is identified, obtained and integrated into our infrastructure. If we do not accurately predict our infrastructure capacity requirements, our customers could experience service shortfalls. We may also be unable to effectively address capacity constraints, upgrade our systems as needed and continually develop our technology and network architecture to accommodate actual and anticipated changes in technology.

Our platform is accessed by a large number of customers, often at the same time. As we continue to expand the number of our customers and solutions and solution packages available to our customers, we may not be able to scale our technology to accommodate the increased capacity requirements, which may result in interruptions or delays in service. In addition, the failure of third-party cloud infrastructure providers, third-party internet service providers or other third-party service providers whose services are integrated with our platform to meet our capacity requirements could result in interruptions or delays in access to our platform or impede our ability to scale our operations. In the event that our service agreements are terminated with our cloud infrastructure providers, or there is a lapse of service, interruption of internet service provider connectivity or damage to such providers' facilities, we could experience interruptions in access to our platform as well as delays and additional expense in arranging new facilities and services.

Any of the above circumstances or events may harm our reputation, cause customers to terminate their agreements with us, impair our ability to obtain subscription renewals from existing customers, impair our ability to grow our customer base, result in the expenditure of significant financial, technical and engineering resources, subject us to financial penalties and liabilities under our service level agreements, and otherwise could adversely affect our business, results of operations and financial condition.

The delivery of our platform depends on AWS cloud infrastructure services.

Our SaaS offerings are hosted solely in AWS and our other offerings utilize the cloud infrastructure offered by AWS. Our operations depend on maintaining the configuration, architecture and interconnection specifications required by AWS. Although we have disaster recovery plans that utilize multiple AWS infrastructure locations, any incident affecting this infrastructure that may be caused by fire, flood, severe storm, earthquake, power loss, telecommunications failures, unauthorized intrusion, computer viruses and disabling devices, natural disasters, war, criminal act, military actions, terrorist attacks and other similar events beyond our control could negatively affect our platform. A prolonged AWS service disruption affecting our platform for any of the foregoing reasons could damage our reputation with current and potential customers, expose us to liability, cause us to lose customers or otherwise harm our business. In addition, since all of our cloud-based offerings utilize AWS cloud infrastructure services, in the event of a prolonged AWS services disruption we may not be able to find an alternative provider on commercially reasonable terms or in a timely manner, if at all. We may also incur significant costs for using alternative equipment or taking other actions in preparation for, or in reaction to, events that damage the AWS services we use.

AWS enables us to order and reserve server capacity in varying amounts and sizes distributed across multiple regions. AWS provides us with computing and storage capacity pursuant to an agreement that continues until terminated by either party. While we have agreed to terms with AWS that would prevent the termination of our agreement in virtually all circumstances, in the highly unlikely event that our AWS agreement was terminated, we may be unable to deploy certain of our solutions and our business, results of operations and financial condition may be adversely affected.

In addition, since all of our cloud-based offerings utilize AWS cloud infrastructure resources, our customers' satisfaction with our cloud-based offerings is dependent in part upon their perceptions and satisfaction with AWS cloud infrastructure services. Dissatisfaction with AWS cloud infrastructure services could damage our relationships with customers and/or result in the loss of customers across one or more use case, solution or solution package.

Data privacy and security concerns, evolving regulations of cloud computing, cross border data transfer restrictions, data localization requirements and other domestic and foreign laws and regulations may limit the use and adoption of, or require modification of, our solutions, solution packages and services, which could adversely affect our business.

Laws and regulations related to the provision of services on the Internet are increasing, as federal, state and foreign governments continue to adopt new laws and regulations addressing data privacy and the collection, processing, storage and use of personal information. Internationally, many of the jurisdictions in which we operate have established their own data security and privacy legal frameworks with which we, or our customers, must comply. We have implemented various features and processes intended to enable our customers to better comply with applicable privacy and security requirements, but these features and processes do not guarantee compliance and may not guard against all potential privacy concerns.

International Data Protection Laws

In the European Economic Area (the "EEA"), the General Data Protection Regulation ("GDPR") applies to any company established in the EEA as well as to those outside the EEA if they process personal data in relation to the offering of goods or services to individuals in the EEA and/or the monitoring of their behavior. Similar laws exist in Switzerland and the United Kingdom, and other countries (including Australia, Canada, India and Israel) are adopting laws based on GDPR or updating their existing laws to reflect GDPR concepts.

The GDPR enhances data protection obligations for both processors and controllers of personal data, including by extending the rights available to affected data subjects, materially expanding the definition of what is expressly noted to constitute personal data, requiring additional disclosures about how personal data is to be used, and imposing limitations on retention of personal data, creating mandatory data breach notification requirements in certain circumstances, and establishing onerous new obligations on services providers who process personal data simply on behalf of others. Under the GDPR, fines of up to €20 million or up to 4% of an undertaking's total worldwide annual turnover of the preceding financial year, whichever is higher, may be imposed, and the EEA regulators are aggressively enforcing GDPR. In addition to administrative fines, a wide variety of other potential enforcement powers are available to competent authorities in respect of potential and suspected violations of the GDPR, including extensive audit and inspection rights, and powers to order temporary or permanent bans on all or some processing of personal data carried out by noncompliant actors.

Recent developments in the regulation of cross-border data transfers from the EEA, including enforcement decisions and regulatory guidance issued by key supervisory authorities, creates uncertainty as to our and our customers' ability to use platforms and processing services located in the US and other non-adequate jurisdictions. While existing data transfer mechanisms, such as Standard Contractual Clauses, remain valid, our use of these transfer mechanisms is subject to legal, regulatory and political pressure. We anticipate incurring significant cost to enable continued cross-border transfers as needed to operate our business, and we cannot assure you that our business will not be materially impacted by restrictions on cross-border transfers of personal data.

Interpretation and application of the GDPR and other data protection laws are evolving, including in the areas of cloud services, AI, and the roles of companies that provide data-intensive products and services. Given the breadth and depth of changes in data protection obligations, complying with its requirements has caused us to expend significant resources and such expenditures are likely to continue into the near future as we respond to new interpretations, additional guidance and potential enforcement actions and patterns, and as we continue to negotiate data processing agreements with our customers and business partners. While we have taken steps to comply with the GDPR, other applicable data protection laws, and the regulations and guidance published by applicable regulators, , including by seeking to establish appropriate lawful bases for the various processing activities we carry out as a controller, reviewing our security procedures, and entering into data processing agreements with relevant customers and business partners, we cannot assure you that our efforts to achieve and remain in compliance have been, and/or will continue to be, fully successful. In particular, we cannot assure you that our ability to monitor and address emerging requirements of international data protection laws will be successful, that our actual handling of personal data will comply with these requirements, or that we have not or will not experience an information security incident or data breach which could have material financial consequences. We may also face risk (including loss of substantial business) if our customers and other stakeholders are not confident that our products and service can be used in a manner that is compliant with applicable data protection laws.

Domestic Privacy Laws

In the United States, the California Consumer Privacy Act ("CCPA") imposes GDPR-like obligations on companies doing business in California, and gives California residents GDPR-like rights to access and delete their personal information, opt out of certain personal information sharing and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. In addition, a California ballot initiative, the California Privacy Rights Act (the "CPRA") takes effect on January 1, 2023. THE CPRA significantly modifies the CCPA, including by expanding consumers' rights with respect to certain sensitive personal information. The CPRA also creates a new state agency that will be vested with authority to implement and enforce the CCPA and the CPRA. The effects of the CCPA and the CPRA are potentially significant and may require us to modify our data collection or processing practices and policies and increase our compliance costs and potential liability. Since the CPRA passed, in March 2021, Virginia enacted the Virginia Consumer Data Protection Act and, in June 2021, Colorado enacted the Colorado Privacy Act, both of which are comprehensive privacy statutes that share similarities with the CCPA and CPRA as well as GDPR. This legislation could mark the beginning of a trend toward more stringent privacy legislation in the U.S., which could increase our potential liability and adversely affect our business.

With respect to cybersecurity in the U.S., we are closely monitoring the development of rules and guidance pursuant to various executive orders that may apply to us, including, for example, Executive Order 14028 for "critical software." While the rules and guidance coming from such executive orders are still being developed, we could be categorized as a provider of critical software, which may increase our compliance costs and delay or prevent our ability to execute contracts with customers, including in particular with government entities.

Data Localization and Other Risks

Privacy and data protections laws and regulations are subject to new and differing interpretations and there may be significant inconsistency in laws and regulations among the jurisdictions in which we operate or provide our SaaS offerings. Legal and other regulatory requirements could restrict our ability to store and process data as part of our SaaS offerings, or, in some cases, impact our ability to provide our SaaS offerings in certain jurisdictions. Our inability to provide our offerings in certain jurisdictions, particularly China and Russia, as a result of their local data privacy frameworks may result in the loss of business opportunities from customers operating in, or seeking to expand into, those jurisdictions. In addition, we may seek to engage third-party support providers in certain jurisdictions in order to comply with our customers' data privacy concerns and such engagements may be costly.

Privacy and data protection laws and regulations may also impact our customers' ability to deploy certain of our solutions and solution packages globally, to the extent they utilize our solutions and solution packages for storing personal information that they process. Additionally, if third parties that we work with violate applicable laws or our policies, such violations may also put our customers' information at risk and could in turn have an adverse effect on our business. The costs of compliance with, and other burdens imposed by, data privacy laws, regulations and standards may require resources to create new solutions or solution packages or modify existing solutions or solution packages, could lead to us being subject to significant fines, penalties or liabilities for noncompliance, could lead to complex and protracted contract negotiations with respect to privacy and data protection terms, and may slow the pace at which we close sales transactions, any of which could harm our business.

The data protection landscape is rapidly evolving, and we expect that there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security. We cannot yet determine the impact that such future laws, regulations and standards may have on our business. Such laws and regulations are often subject to differing interpretations and may be inconsistent among jurisdictions.

Any failure or perceived failure by us to comply with federal, state or foreign laws or regulations, industry standards, contractual obligations or other legal obligations, with respect to any security incident, whether or not resulting in unauthorized access to, or acquisition, release or transfer of personal data or other data, may result in governmental enforcement actions and prosecutions, private litigation, fines and penalties, friction in our customer relationships or adverse publicity, and could cause our customers to lose trust in us, which could have an adverse effect on our reputation and business.

Around the world, there are numerous lawsuits in process against various technology companies that process personal data. If those lawsuits are successful, it could increase the likelihood that we may be exposed to liability for our own policies and practices concerning the processing of personal data and could hurt our business. Furthermore, the costs of compliance with, and other burdens imposed by, laws, regulations and policies concerning privacy and data security that are applicable to the businesses of our customers may limit the use and adoption of our platform and reduce overall demand for it.

In addition, if our platform is perceived to cause, or is otherwise unfavorably associated with, violations of privacy or data security requirements, it may subject us or our customers to public criticism and potential legal liability. Existing and potential laws and regulations concerning privacy and data security and increasing sensitivity of consumers to unauthorized processing of personal data may create negative public reactions to technologies, solutions, solution packages and services such as ours. Public concerns regarding personal data processing, privacy and security may cause some of our customers' end users to be less likely to visit their websites or otherwise interact with them. If enough end users choose not to visit our customers' websites or otherwise interact with them, our customers could stop using our platform. This, in turn, may reduce the value of our service and slow or eliminate the growth of our business.

Our continued development of AI and ML is dependent, in part, on our customers' willingness to allow us to use their data to develop the necessary algorithms. Concerns about data privacy may discourage customers from allowing us to use their data in this manner, which may limit our ability to continue to leverage AI and ML in the Ping Intelligent Identity Platform.

With respect to cybersecurity in the U.S., we are closely monitoring the development of rules and guidance pursuant to various executive orders that may apply to us, including, for example, Executive Order 14028 for "critical software." While the rules and guidance coming from such executive orders are still being developed, we could be categorized as a provider of critical software, which may increase our compliance costs and delay or prevent our ability to execute contracts with customers, including in particular with government entities.

We function as a HIPAA "business associate" for certain of our customers and, as such, are subject to strict privacy and data security requirements. If we fail to comply with any of these requirements, we could be subject to significant liability, all of which can adversely affect our business as well as our ability to attract and retain new customers.

The Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act ("HITECH") and their respective implementing regulations, ("HIPAA"), imposes specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's security standards directly applicable to "business associates." We function as a business associate for certain of our customers that are HIPAA covered entities and service providers, and in that context we are regulated as a business associate for the purposes of HIPAA. If we are unable to comply with our obligations as a HIPAA business associate, we could face substantial civil and even criminal liability. HITECH imposes four tiers of civil monetary penalties and gives state attorneys general authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorneys' fees and costs associated with pursuing federal civil actions. In addition, many state laws govern the privacy and security of health information in certain circumstances, many of which differ from HIPAA and each other in significant ways and may not have the same effect.

As a business associate, we are required by HIPAA to maintain HIPAA-compliant business associate agreements with our customers that are HIPAA covered entities and service providers, as well as our subcontractors that access, maintain, create or transmit individually identifiable health information on our behalf for the rendering of services to our HIPAA covered entity and service provider customers. These agreements impose stringent data security and other obligations on us. If we or our subcontractors are unable to meet the requirements of any of these business associate agreements, we could face contractual liability under the applicable business associate agreement as well as possible civil and criminal liability under HIPAA, all of which can have an adverse impact on our business and generate negative publicity, which, in turn, can have an adverse impact on our ability to attract and retain customers.

In addition, the U.S. Department of Health & Human Services recently proposed modifications to the HIPAA privacy regulations ("Privacy Rule"). The proposed rulemaking has not yet been finalized. We will continue to monitor whether any final modifications to the Privacy Rule may require us to change our practices. Significant changes to HIPAA, including interpretation and application of HIPAA, could increase our compliance costs and negatively impact our business.

Our quarterly operating results and other metrics are likely to vary significantly and be unpredictable, which could cause the trading price of our stock to decline.

Our operating results and other metrics have historically varied from period to period, and we expect that they will continue to do so as a result of a number of factors, many of which are outside of our control and may be difficult to predict, including:

- the level of demand for our solutions and solution packages, including our newly-introduced solutions and offering of solution packages, and the level of perceived urgency regarding security threats and compliance requirements;
- the timing and use of new subscriptions and renewals of existing subscriptions;
- the mix of cloud and on-premise offerings sold and the associated contract term;
- the extent to which customers subscribe for additional solutions or solution packages, or increase the number of identities or use cases;
- significant security breaches of, technical difficulties with, or interruptions to, the delivery and use of our offerings;
- customer budgeting cycles and seasonal buying patterns where our customers often time their purchases and renewals of our solutions or solution packages to coincide with their fiscal year end, which is typically June 30 or December 31;
- any changes in the competitive landscape of our industry, including consolidation among our competitors, customers, partners or resellers;
- timing of costs and expenses during a quarter;
- deferral of orders in anticipation of new solutions, solution packages or enhancements announced by us or our competitors;
- price competition;
- changes in renewal rates and terms in any quarter;
- costs related to the acquisition of businesses, talent, technologies or intellectual property by us, including potentially significant amortization costs and possible write-downs;
- litigation-related costs, settlements or adverse litigation judgments;

- any disruption in our sales channels or termination of our relationship with channel and other strategic partners;
- general economic conditions, both domestically and in our foreign markets, and related changes to currency exchange rates;
- insolvency or credit difficulties confronting our customers, affecting their ability to purchase or pay for our solutions and solution packages; and
- future accounting pronouncements or changes in our accounting policies.

Any one of the factors above or the cumulative effect of some of the factors referred to above may result in significant fluctuations in our financial and other operating results, including fluctuations in our key metrics. This variability and unpredictability could result in our failing to meet the expectations of securities analysts or investors for any period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our shares could fall substantially and we could face costly lawsuits, including securities class action suits. In addition, a significant percentage of our operating expenses are fixed in nature and based on forecasted revenue and cash flow trends. Accordingly, in the event of revenue shortfalls, we are generally unable to mitigate the negative impact on margins or other operating results in the short term.

We may fail to meet or exceed the expectations of securities analysts and investors, and the market price for our common stock could decline. If one or more of the securities analysts who cover us change their recommendation regarding our stock adversely, the market price for our common stock could decline. Additionally, our stock price may be based on expectations, estimates or forecasts of our future performance that may be unrealistic or may not be achieved. Further, our stock price may be affected by financial media, including press reports and blogs.

Our revenue recognition policy and other factors may distort our financial results in any given period and make them difficult to predict.

Under accounting standards update No. 2014-09 (Topic 606), *Revenue from Contracts with Customers* (“ASC 606”), we recognize revenue when our customer obtains control of goods or services in an amount that reflects the consideration that we expect to receive in exchange for those goods or services. Our subscription revenue includes subscription term-based license revenue, which is recognized when we transfer control of the term-based license to the customer, and subscription SaaS and maintenance and support revenue, both of which are recognized ratably over the contract period. Because subscription term-based license revenue is recognized upfront, a single, large license in a given period may distort our operating results for that period. In contrast, the impact of agreements that are recognized ratably may take years to be fully reflected in our financial statements. Consequently, a significant increase or decline in our subscription SaaS and maintenance and support contracts in any one quarter will not be fully reflected in the results for that quarter, but will affect our revenue in future quarters. This also makes it challenging to forecast our revenue for future periods, as both the mix of solutions, solution packages and services we will sell in a given period, as well as the size of contracts, is difficult to predict. In addition, we make certain estimates related to the allocation of subscription revenue attributable to the term-based license as compared to maintenance and support or subscription SaaS as applicable. Changes in such estimates may further affect the timing of our revenue recognition and make revenue difficult to predict.

As disclosed therein, our financial statements reflect various estimates and assumptions made by management that may affect revenue recognition and the presentation of other financial results. In some instances, we could reasonably use different estimates and assumptions, and changes in estimates are likely to occur from period to period. See “Item 8. Financial Statements — Note 2. Summary of Significant Accounting Policies.”

Given the foregoing factors, our actual results could differ significantly from our estimates, comparing our revenue and operating results on a period-to-period basis may not be meaningful, and our past results may not be indicative of our future performance.

If we fail to enhance our brand cost-effectively, our ability to expand our customer base will be impaired and our business, results of operations and financial condition may be adversely affected.

We believe that developing and maintaining awareness of our brand in a cost-effective manner is critical to achieving widespread acceptance of our existing and future solutions and solution packages and is an important element in attracting new customers. We believe that the importance of brand recognition will increase as competition in our market increases. Successful promotion of our brand will depend largely on the effectiveness of our marketing efforts and on our ability to develop and deploy high-quality, reliable and differentiated solutions and solution packages to customers. In the past, our efforts to build our brand have involved significant expense. Brand promotion activities may not yield increased revenue, and even if they do, any increased revenue may not offset the expense we incur in building our brand. If we fail to successfully promote and maintain our brand, or incur substantial expense in an unsuccessful attempt to promote and maintain our brand, we may fail to attract new customers or retain our existing customers to the extent necessary to realize a sufficient return on our brand-building efforts, and our business, results of operations and financial condition could be adversely affected.

Our sales cycle is frequently long and unpredictable, and our sales efforts require considerable time and expense.

Since we primarily focus on selling our solutions and solution packages to enterprises, the timing of our sales can be difficult to predict. We and our channel partners are often required to spend significant time and resources to better educate and familiarize potential customers with the value proposition of our platform, solutions and solution packages. Customers often view the purchase of our solutions and solution packages as a strategic decision and significant investment and, as a result, frequently require considerable time to evaluate, test and qualify our platform, solutions and solution packages prior to purchasing our solutions and/or solution packages. In particular, for customers in highly-regulated industries, the selection of a security solution provider is a critical business decision due to the sensitive nature of these customers' data, which results in particularly extensive evaluation prior to the selection of information security vendors. During the sales cycle, we expend significant time and money on sales and marketing and contract negotiation activities, which may not result in a sale. Additional factors that may influence the length and variability of our sales cycle include:

- the discretionary nature of purchasing and budget cycles and decisions;
- lengthy purchasing approval processes;
- the industries in which our customers operate;
- the evaluation of competing solutions and solution packages during the purchasing process;
- time, complexity and expense involved in replacing existing solutions;
- announcements or planned introductions of new solutions and solution packages, features or functionality by our competitors or of new solutions, solution packages or offerings by us; and
- evolving functionality demands.

If our efforts in pursuing sales and customers are unsuccessful, or if our sales cycles lengthen, our revenue could be lower than expected, which would adversely affect our business, results of operations or financial condition.

Our growth strategy includes the acquisition of other businesses or technologies, and we may not be able to identify suitable acquisition targets or otherwise successfully implement our growth strategy.

In order to expand our business, we have made several acquisitions of businesses, products and technologies and expect to continue making similar acquisitions and possibly larger acquisitions as part of our growth strategy. The success of our future growth strategy will depend in part on our ability to identify, negotiate, complete and integrate the acquisition of businesses or technologies and, if necessary, to obtain satisfactory debt or equity financing to fund those acquisitions. We expect to continue evaluating potential strategic acquisitions of businesses, assets and technologies. However, we may not be able to identify suitable candidates, negotiate appropriate or favorable acquisition terms, obtain financing that may be needed to consummate such transactions or complete proposed acquisitions. Further, there is significant competition for acquisition and expansion opportunities in the IAM industry.

Acquisitions are inherently risky, and any acquisitions we complete may not be successful. Our past acquisitions and any acquisitions that we may undertake in the future involve numerous risks, including, but not limited to, the following:

- difficulties in integrating and managing the operations, personnel, procedures, IT systems, technologies and the systems and solutions of the companies we acquire;
- diversion of our management's attention from normal daily operations of our business;
- potential loss of key employees, management and engineers of the companies we acquire;
- our inability to maintain the key business relationships and the reputations of the businesses we acquire;
- the price we pay for any business, asset or technology acquired may overstate the value of that business, asset or technology or otherwise be too high;
- uncertainty of entry into markets in which we have limited or no prior experience and in which competitors have stronger market positions;
- our dependence on unfamiliar affiliates, resellers and partners of the companies we acquire;
- our inability to increase sales from an acquisition for a number of reasons, including our failure to drive demand in our existing customer base for acquired businesses, assets or technologies;
- increased costs related to acquired operations and continuing support and development of acquired systems;
- our responsibility for the liabilities of the businesses we acquire and the potential failure to properly identify an acquisition target's liabilities, potential liabilities or risks;
- potential goodwill and intangible asset impairment charges and amortization associated with acquired businesses;
- failure to achieve acquisition synergies or to properly evaluate a target company's capabilities;
- adverse tax consequences associated with acquisitions;
- changes in how we are required to account for our acquisitions under GAAP, including arrangements that we assume from an acquisition;

- potential negative perceptions of our acquisitions by customers, financial markets or investors;
- failure to obtain any applicable required approvals from governmental authorities under competition and antitrust laws on a timely basis, if at all, which could, among other things, delay or prevent us from completing a transaction, or otherwise restrict our ability to realize the expected financial or strategic goals of an acquisition;
- potential increases in our interest expense, leverage and debt service requirements if we incur additional debt to pay for an acquisition, or dilution to our shareholders if we issue shares as consideration for an acquisition; and
- our inability to apply and maintain our internal standards, controls, procedures and policies to acquired businesses.

We regularly evaluate potential acquisition candidates and engage in discussions and negotiations regarding potential acquisitions; however, even if we execute a definitive agreement for an acquisition, there can be no assurance that we will consummate the transaction within the anticipated closing timeframe, or at all. Further, acquisitions typically involve the payment of a premium over book- and market-values and, therefore, some dilution of our tangible book value and earnings per common share may occur in connection with any future transaction.

Inherent in any future acquisition is the risk of transitioning company cultures and facilities. The failure to efficiently and effectively achieve such transitions could increase our costs and decrease our profitability. Although we expect that the realization of efficiencies related to the integration of any acquired businesses will offset incremental transaction and acquisition-related costs over time, anticipated financial benefits may not be achieved in the near term, or at all.

Additionally, acquisitions or asset purchases made entirely or partially for cash may reduce our cash reserves or require us to incur additional debt under our credit agreements or otherwise. We may seek to obtain additional cash to fund an acquisition by selling equity or debt securities. We may be unable to secure the equity or debt funding necessary to finance future acquisitions on terms that are acceptable to us. If we finance acquisitions by issuing equity or convertible debt securities, our existing shareholders will experience ownership dilution.

The occurrence of any of these risks could have a material adverse effect on our business, results of operations or financial condition.

We may need to change our pricing models to compete successfully.

The intense competition we face in the sales of our solutions, solution packages and services and general economic and business conditions can put pressure on us to change our prices. If our competitors offer deep discounts on certain solutions, solution packages or services or develop solutions and/or solution packages that the marketplace considers more valuable than ours, we may need to lower prices or offer other favorable terms in order to compete successfully. Any such changes may reduce margins and could adversely affect operating results. Additionally, the increasing prevalence of cloud and SaaS delivery models offered by us and our competitors may unfavorably impact pricing for both our on-premise and cloud-based offerings, as well as overall demand for our on-premise software and service offerings, which could reduce our revenues and profitability. Our competitors may offer lower pricing on their support offerings, which could put pressure on us to further discount our offering or support pricing. We also must determine the appropriate price of our offerings and services to enable us to compete effectively internationally.

Any broad-based change to our prices and pricing policies could cause our revenue to decline or be delayed as our sales force implements and our customers adjust to new pricing policies. For example, we began providing solution packages that include combinations of our most commonly deployed solutions in March 2020.

We or our competitors may bundle solutions in other ways for promotional purposes or as a long-term go-to-market or pricing strategy or provide guarantees of prices and solution and solution package implementations. These practices could, over time, significantly constrain the prices that we can charge for certain of our solutions and solution packages. If we do not adapt our pricing models to reflect changes in customer use of our solutions and solution packages or changes in customer demand, our revenue could decrease.

Our failure to meet certain of our service level commitments could harm our business, results of operations and financial condition.

Our customer agreements contain service level commitments, under which we guarantee specified availability and error resolution times with respect to our solutions. Any failure of or disruption to our infrastructure could make our solutions unavailable to our customers. If we are unable to meet the stated service level commitments to our customers or suffer extended periods of unavailability of our SaaS offerings, we may be contractually obligated to provide affected customers with service credits, or customers could elect to terminate and receive refunds for prepaid amounts related to unused subscriptions. Our revenue, other results of operations and financial condition could be harmed if we suffer unscheduled downtime that exceeds the service level commitments under our agreements with our customers, and any extended service outages could adversely affect our business and reputation as customers may elect not to renew.

If we fail to offer high-quality customer support, our business and reputation will suffer.

Once our solutions and solution packages are deployed, our customers rely on our support services to resolve any issues that may arise. High-quality customer education and customer support is important for the successful marketing and sale of our solutions and solution packages and for the renewal of existing customers. We must successfully assist our customers in deploying our solutions and solution packages, resolving performance issues and addressing interoperability challenges with a customer's existing network and security infrastructure. Many enterprises, particularly large enterprises, have complex networks and require high levels of focused support, including premium support offerings, to fully realize the benefits of our solutions. Any failure by us to maintain the expected level of support could reduce customer satisfaction and hurt our customer retention, particularly with respect to our large enterprise customers. To the extent that we are unsuccessful in hiring, training and retaining adequate support resources, our ability to provide adequate and timely support to our customers will be negatively impacted, and our customers' satisfaction with our solutions could be adversely affected. Given our growth, we may in the future engage third parties to provide support services to our customers. Any failure to properly train or oversee such contractors could result in a poor customer experience, which could have an adverse impact on our reputation and ability to renew subscriptions or engage new customers. In addition, most of our contracts with our larger customers require consent in the event we subcontract the services we provide thereunder. The process of obtaining consent to subcontract support services with these customers could be lengthy and there can be no assurance such consent would be provided.

Furthermore, as we sell our solutions and solution packages internationally, our support organization faces additional challenges, including those associated with delivering support, training and documentation in languages other than English. Any failure to maintain high-quality customer support, or a market perception that we do not maintain high-quality support, could materially harm our reputation, business, financial condition and results of operations, and adversely affect our ability to sell our solutions and solution packages to existing and prospective customers. The importance of high-quality customer support will increase as we expand our business and pursue new customers.

Our growth is substantially dependent on the success of our strategic relationships with channel partners, technology partners and other third parties.

As part of our business development efforts, we anticipate that we will continue to depend on relationships with third parties, such as our channel partners and technology partners, to sell, market, build, operate and deploy our solutions and solution packages. Identifying these partners and maintaining these relationships requires significant time and resources. Our competitors may be effective in providing incentives to channel partners and other third parties to favor their solutions or services over subscriptions to our platform and a substantial number of our agreements with channel partners are non-exclusive such that those channel partners may offer customers the solutions of several different companies, including solutions that compete with ours. Our channel partners may cease marketing or reselling our platform with limited or no notice and without penalty. Our channel partners may also choose to promote our competitors' solutions versus our own solutions and solution packages. If our technology partners fail to build, deploy or operate our solutions and/or solution packages in a manner that satisfies our customers, or if we fail to adequately negotiate and document the underlying agreement with such technology partners, our customers may seek direct recourse against us. In the event that a relationship with a technology partner deploying and operating our solution is terminated, we may be unable to allocate the proper engineering resources to support the solution internally, or the solution may become too costly to run ourselves. In addition, given the competitive landscape, acquisitions of our channel or technology partners by a competitor could adversely affect our customers, as these partners may no longer be in a position to sell, market, build, operate and/or deploy our solutions and solution packages. Furthermore, some of these partners may themselves build competitive solutions that are or may become competitive with certain of our solutions and/or solution packages and then elect to no longer support or integrate with our platform. Lastly, it continues to be difficult to predict the impact of the COVID-19 pandemic on the business operations of these critical third parties. Such third parties may suffer financial hardship and unexpectedly terminate their relationship with us and thus we may not be able to recoup any financial or strategic losses. If we are unsuccessful in establishing or maintaining our relationships with critical 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 solutions or increased revenue.

Adverse general and industry-specific economic and market conditions and reductions in IT and identity spending may reduce demand for our solutions and solution packages, which could harm our results of operations.

Our revenue, results of operations and cash flows depend on the overall demand for our solutions and solution packages. Concerns about the systemic impact of a potential widespread recession (in the United States or internationally), geopolitical issues or the availability and cost of credit could lead to increased market volatility, decreased consumer confidence and diminished growth expectations in the U.S. economy and abroad, which in turn could result in reductions in IT, IAM and identity security spending by our existing and prospective customers. For the year ended December 31, 2021, 36% of our revenue was derived from the financial services industry, including banking. Negative economic conditions, including in the financial services industry, may cause customers to reduce their IT spending. Prolonged economic slowdowns may result in customers delaying or canceling IT projects, choosing to focus on in-house development efforts or seeking to lower their costs by requesting us to renegotiate existing contracts on less advantageous terms or defaulting on payments due on existing contracts or not renewing at the end of the contract term.

Our customers may merge with other entities who use alternative IAM solutions and, during weak economic times, there is an increased risk that one or more of our customers will file for bankruptcy protection, either of which may harm our revenue, profitability and results of operations. We also face risk from international customers that file for bankruptcy protection in foreign jurisdictions, particularly given that the application of foreign bankruptcy laws may be more difficult to predict. In addition, we may determine that the cost of pursuing any claim may outweigh the recovery potential of such claim. As a result, broadening or protracted extension of an economic downturn could harm our business, revenue, results of operations and cash flows.

If our platform, solutions and solution packages do not effectively interoperate with our customers' existing or future IT infrastructures, our business would be harmed.

Our success depends on the interoperability of our platform, solutions and solution packages with our customers' IT infrastructures, including third-party operating systems, applications, data and devices that we have not developed and do not control. Any changes in such infrastructure, operating systems, applications, data or devices that degrade the functionality of our platform, solutions or solution packages or give preferential treatment to competitive solutions could adversely affect the adoption and usage of our platform. We may not be successful in quickly or cost effectively adapting our platform, solutions or solution packages to operate effectively with these operating systems, applications, data or devices. If it is difficult for our customers to access and use our platform, solutions or solution packages, or if our platform, solutions or solution packages cannot connect a broadening range of applications, data and devices, then our customer growth and retention may be harmed, and our business, results of operations and financial condition could be adversely affected. We rely on open standards for many integrations between our solutions and solution packages and third-party applications that our customers utilize, and in other instances on such third parties making available the necessary tools for us to create interoperability with their applications. If application providers were to move away from open standards, or if a critical, widely-utilized application provider were to adopt proprietary integration standards and not make them available for the purposes of facilitating interoperability with our platform, the utility of our solutions and solution packages for our customers would be decreased.

Our ability to introduce new solutions and features is dependent on adequate research and development resources and our ability to successfully complete acquisitions. If we do not adequately fund our research and development efforts or complete acquisitions successfully, we may not be able to compete effectively and our business and results of operations may be harmed.

To remain competitive, we must continue to offer new solutions and enhancements to our platform. This is particularly true as we further expand and diversify our capabilities. Maintaining adequate research and development resources, such as the appropriate personnel and development technology, to meet the demands of the market is essential. If we elect not to or are unable to develop solutions internally due to certain constraints, such as high employee turnover, lack of management ability or a lack of other research and development resources, we may choose to expand into a certain market or strategy via an acquisition for which we could potentially pay too much or fail to successfully integrate into our operations. Further, many of our competitors expend a considerably greater amount of funds on their respective research and development programs, and those that do not may be acquired by larger companies that would allocate greater resources to our competitors' research and development programs. Our failure to maintain adequate research and development resources or to compete effectively with the research and development programs of our competitors would give an advantage to such competitors and our business, results of operations and financial condition could be adversely affected. Moreover, there is no assurance that our research and development or acquisition efforts will successfully anticipate market needs and result in significant new marketable solutions or enhancements to our solutions, design improvements, cost savings, revenues or other expected benefits. If we are unable to generate an adequate return on such investments, we may not be able to compete effectively and our business and results of operations may be materially and adversely affected.

Our success depends, in part, on the integrity and scalability of our systems and infrastructures. System interruption and the lack of integration, redundancy and scalability in these systems and infrastructures may result in our business, results of operations and financial condition being adversely affected.

Our success depends, in part, on our ability to maintain the integrity of our systems and infrastructure, including websites, information and related systems. System interruption and a lack of integration and redundancy in our information systems and infrastructure may adversely affect our ability to operate websites, process and fulfill transactions, respond to customer inquiries and generally maintain cost-efficient operations. We may experience occasional system interruptions that make some or all systems or data unavailable or prevent us from efficiently providing access to our platform. Fire, flood, power loss, telecommunications failure, hurricanes, tornadoes, earthquakes, other natural disasters, acts of war or terrorism and similar events or disruptions may damage or interrupt computer, broadband or other communications systems and infrastructure at any time. Any of these events could cause system interruption, delays and loss of critical data, and could prevent us from providing access to our platform.

While we have backup systems for certain aspects of our operations, disaster recovery planning by its nature cannot be sufficient for all eventualities. In addition, we may not have adequate insurance coverage to compensate for losses from a major interruption. If any of these events were to occur, our business, results of operations and financial condition could be adversely affected.

We rely on software and services from other parties. Defects in or the loss of access to software or services from third parties could increase our costs and adversely affect the quality of our solutions.

We rely on third-party computer systems, broadband and other communications systems and service providers in providing access to our platform. Any interruptions, outages or delays in our systems and infrastructure, our business and/or third parties, or deterioration in the performance of these systems and infrastructure, could impair our ability to provide access to our platform. Our business would be disrupted if any of the third-party software or services we utilize, particularly with respect to third-party software or services embedded in our solutions, or functional equivalents thereof, were unavailable due to extended outages or interruptions or because they are no longer available on commercially reasonable terms or prices or at all.

In each case, we would be required to either seek licenses to software or services from other parties and redesign our solutions to function with such software or services or develop these components ourselves, which would result in increased costs and could result in delays in our solution and solution package launches and the release of new solution and solution package offerings until equivalent technology can be identified, licensed or developed, and integrated into our solutions. Furthermore, we might be forced to limit the features available in our current or future solutions. If these delays and feature limitations occur, our business, results of operations and financial condition could be adversely affected.

Real or perceived errors, failures, vulnerabilities or bugs in our solutions, including deployment complexity, could harm our business and results of operations.

Errors, failures, vulnerabilities or bugs may occur in our solutions, especially when updates are deployed or new solutions are rolled out. Our platform is often used in connection with large-scale computing environments with different operating systems, system management software, equipment and networking configurations, which may cause errors or failures of solutions. In addition, deployment of our solutions into complicated, large-scale computing environments may expose errors, failures, vulnerabilities or bugs in our solutions. Any such errors, failures, vulnerabilities or bugs may not be found until after they are deployed to our customers. Real or perceived errors, failures, vulnerabilities or bugs in our solutions could result in negative publicity, loss of customer data, loss of or delay in market acceptance of our solutions, loss of competitive position, or claims by customers for losses sustained by them, all of which could adversely affect our business, results of operations and financial condition.

If we fail to adequately protect our proprietary rights, our competitive position could be impaired and we may lose valuable assets, generate less revenue and incur costly litigation to protect our rights.

Our success is dependent, in part, upon protecting our proprietary information and technology. We rely on a combination of patents, copyrights, trademarks, service marks, trade secret laws and contractual restrictions to establish and protect our proprietary rights. However, the steps we take to protect our intellectual property may be inadequate. We will not be able to protect our intellectual property if we are unable to enforce our rights or if we do not detect unauthorized use of our intellectual property. Despite our precautions, it may be possible for unauthorized third parties to copy our solutions and use information that we regard as proprietary to create solutions that compete with ours. Some license provisions protecting against unauthorized use, copying, transfer and disclosure of our solutions may be unenforceable under the laws of certain jurisdictions and foreign countries. Further, the laws of some countries do not protect proprietary rights to the same extent as the laws of the United States, and mechanisms for enforcement of intellectual property rights in some foreign countries may be inadequate. In addition, certain countries into which we may expand our business may require us to do business through an entity that is partially owned by a local investor, to make available our technologies to state regulators or to grant license rights to local partners in a manner not required by the jurisdictions in which we currently operate. To the extent we expand our international activities, our exposure to unauthorized reverse engineering of our technologies or copying and use of our solutions and proprietary information may increase. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our technology and intellectual property.

We rely in part on trade secrets, proprietary know-how and other confidential information to maintain our competitive position. Although we enter into confidentiality and invention assignment agreements with our employees and consultants and enter into confidentiality agreements with the parties with whom we have strategic relationships and business alliances, no assurance can be given that these agreements will be effective in controlling access to and distribution of our solutions and proprietary information. Further, these agreements do not prevent our competitors from independently developing technologies that are substantially equivalent or superior to our solutions and solution packages.

To protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. Litigation may be necessary in the future to enforce our intellectual property rights and to protect our trade secrets. Such litigation could be costly, time consuming and distracting to management and could result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights. Our inability to protect our proprietary technology against unauthorized copying or use, as well as any costly litigation or diversion of our management’s attention and resources, could delay further sales or the implementation of our solutions and solution packages, impair the functionality of our solutions, delay introductions of new solutions and solution packages, result in our substituting inferior or more costly technologies into our solutions, or injure our reputation. In addition, we may be required to license additional technology from third parties to develop and market new solutions and solution packages, and we cannot assure you that we could license that technology on commercially reasonable terms or at all, and our inability to license this technology could harm our ability to compete.

Our results of operations may be harmed if we are subject to an infringement claim or a claim that results in a significant damage award.

Other companies have claimed in the past, and may claim in the future, that we infringe upon their intellectual property rights. A claim may also be made relating to technology that we acquire or license from third parties. Because of constant technological change in the segments in which we compete, the extensive patent coverage of existing technologies, and the rapid rate of issuance of new patents, it is possible that the number of these claims may grow. If we were subject to a claim of infringement, regardless of the merit of the claim or our defenses, the claim could:

- require costly litigation to resolve and/or the payment of substantial damages or other amounts to settle such disputes;
- require significant management time;
- cause us to enter into unfavorable royalty or license agreements, if such arrangements are available at all;
- require us to discontinue the sale of some or all of our offerings, or to remove or reduce features or functionality of our solutions and solution packages;
- require us to indemnify our customers or third-party service providers; and/or

- require us to expend additional development resources to redesign our solutions and/or solution packages.

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

Our use of open source software in our offerings could negatively affect our ability to sell our solutions and solution packages and subject us to possible litigation.

We use software modules licensed to us by third-party authors under “open source” licenses in our offerings. Some open source licenses require that users of the applicable software make available source code for modifications or derivative works created using that open source software. If we were to combine our proprietary software with open source software in a certain manner, we could, under certain open source licenses, be required to release or otherwise make available the source code of our proprietary software to the public. This would allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of sales for us.

Although we monitor our compliance with open source licenses and attempt to protect our proprietary source code from the effects stated above, we may inadvertently use open source software in a manner we do not intend and that could expose us to claims for breach of contract and intellectual property infringement. In addition, the terms of many open source licenses have not been interpreted by United States courts, and there is a risk that these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our solutions and solution packages. If we are held to have breached the terms of an open source software license, we could be required to seek licenses from third parties to continue providing our offerings on terms that are not economically feasible, to re-engineer our offerings, to discontinue the sale of our offerings if re-engineering cannot be accomplished on a timely basis, or to make generally available, in source code form, a portion of our proprietary code, any of which could adversely affect our business, results of operations and financial condition. In addition to the risks described above, usage of open source software typically exposes us to greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or assurance of title or controls on the functionality or origin of the software. Many of the risks associated with usage of open source software, such as the lack of warranties or assurances of title, cannot be eliminated, and could, if not properly addressed, negatively affect our business. We have established processes to help alleviate these risks, including a review process for screening requests from our development organizations for the use of open source software, but we cannot be sure that our processes for controlling our use of open source software in our offerings will be effective. Use of open source software may also present additional security risks because the public availability of such software may make it easier for hackers and other third parties to determine how to compromise our offerings.

We rely on SaaS vendors to operate certain functions of our business and any failure of such vendors to provide services to us could adversely impact our business and operations.

We rely on third-party SaaS vendors to operate certain critical functions of our business, including financial management, human resource management and customer relationship management. If these services become unavailable due to extended outages or interruptions or because they are no longer available on commercially reasonable terms or prices, our expenses could increase, our ability to manage our finances could be interrupted and our processes for managing sales of our solutions and solution packages and supporting our customers could be impaired until equivalent services, if available, are identified, obtained and integrated, all of which could harm our business. In addition, we rely on the security of our third-party SaaS vendors as part of the overall security of our solutions. While we review the security documentation and reports made available by these third parties, if one of these vendors were to experience a security incident or be susceptible to a vulnerability, it could have a negative impact on the security of our own solutions and in such an instance it may be more difficult for us to detect unauthorized activity and prevent or minimize security breaches. If any such events were to occur, it could negatively affect our business, expose us to financial liability to our customers and damage our reputation.

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

Our agreements with customers and other third parties may include indemnification or other provisions under which we agree to indemnify them for losses suffered or incurred as a result of claims of intellectual property infringement, damage 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. As we continue to grow, the possibility of infringement claims 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 may have to pay damages, settlement fees, 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 infringing or allegedly infringing 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 deploy certain offerings. 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, solutions or solution packages, which could negatively affect our business. In addition, we may be subject to increased risk of infringement claims as a result of our use of open source software given that our agreements with our customers generally do not exclude open source software from the intellectual property indemnity we contractually agree to provide for our offerings.

From time to time, customers require us to indemnify 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. Although we normally contractually limit our liability with respect to such obligations, 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 platform and result in our brand, business, results of operations and financial condition being adversely affected.

We may be subject to liability claims if we breach our contracts and our insurance may be inadequate to cover our losses.

We are subject to numerous obligations in our contracts with our customers and strategic partners. Despite the procedures, systems and internal controls we have implemented to comply with our contracts, we may breach these commitments, whether through a weakness in these procedures, systems and internal controls, negligence or the willful act of an employee or contractor.

Our insurance policies, including our errors and omissions insurance, may be inadequate to compensate us for the potentially significant losses that may result from claims arising from breaches of our contracts, disruptions in our services, including those caused by cybersecurity incidents, failures or disruptions to our infrastructure, catastrophic events and disasters, including those resulting from the effects of climate change, or otherwise. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all. Further, our insurance may not cover all claims made against us and defending a suit, regardless of its merit, could be costly and divert management's attention.

Our customers may fail to pay us in accordance with the terms of their agreements, necessitating action by us to compel payment.

If customers fail to pay us under the terms of our agreements, we may be adversely affected both from the inability to collect amounts due and the cost of enforcing the terms of our contracts, including related litigation.

Furthermore, some of our customers may seek bankruptcy protection or other similar relief and fail to pay amounts due to us, or pay those amounts more slowly, either of which could adversely affect our business, results of operations and financial condition.

Because our long-term success depends, in part, on our ability to expand the sales of our solutions and solution packages to customers located outside of the United States, our business will be susceptible to risks associated with international operations.

We currently have international operations in the U.K., Canada, Australia, France, Germany, India, Israel, the Netherlands, New Zealand, and Italy. For the year ended December 31, 2021, our international revenue was 26% of our total revenue. Any efforts that we may undertake to increase our international revenue may not be successful. In addition, continuing to expand our international footprint with our solutions and solution packages subjects us to new risks, some of which we have not generally faced in the United States. These risks include, among other things:

- unexpected costs and errors in the localization of our solutions and solution packages, including translation into foreign languages and adaptation for local practices and regulatory requirements;
- difficulties in developing and executing an effective go-to-market strategy in various locations;
- lack of familiarity and burdens of complying with foreign laws, legal standards, privacy standards, regulatory requirements, tariffs and other barriers;
- laws and business practices favoring local competitors or commercial parties;
- costs and liabilities related to compliance with foreign privacy, data protection, information security laws and regulations, including the GDPR and cybersecurity regimes, and the risks and costs of noncompliance, many of which involve disparate standards and enforcement approaches;
- greater risk of a failure of foreign employees, partners, distributors and resellers 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;
- practical difficulties of enforcing intellectual property rights in countries with fluctuating laws and standards and reduced or varied protection for intellectual property rights in some countries, and specific legal requirements in certain countries that might place us at a greater risk of our technologies being subject to reverse engineering or copying;
- unexpected changes in global, economic and political landscapes;
- unexpected changes in regulatory requirements, taxes, trade laws, tariffs, export quotas, custom duties or other trade restrictions;
- difficulties in managing system integrators and technology partners;
- differing technology standards;
- longer accounts receivable payment cycles and difficulties in collecting accounts receivable;
- difficulties in managing and staffing international operations and differing employer/employee relationships and local employment laws;

- political unrest, war, or terrorism, or regional natural disasters, particularly in areas in which we have facilities;

- fluctuations in exchange rates that may increase the volatility of our foreign-based revenue;

- potentially adverse tax consequences, including the complexities of foreign value added tax (or other tax) systems and restrictions on the repatriation of earnings; and

- the economic and legal uncertainty in Europe as a result of Brexit.

Additionally, operating in international markets also requires significant management attention and financial resources. We cannot be certain that the investment and additional resources required in establishing operations in other countries will produce desired levels of revenue or profitability.

In addition, some of our business functions, such as research and development, may be siloed geographically, which may adversely affect the integration of our operations on a global scale.

We have limited experience in marketing, selling and supporting our platform abroad. Our limited experience in operating our business internationally increases the risk that any potential future expansion efforts that we may undertake will not be successful. If we invest substantial time and resources to increase our international revenue and are unable to do so successfully and in a timely manner, our business and results of operations will suffer.

We may face exposure to foreign currency exchange rate fluctuations.

Today, our international contracts are usually denominated in local currencies and the majority of our international costs are denominated in local currencies. Over time, an increasing portion of our international contracts may be denominated in local currencies. Therefore, fluctuations in the value of the U.S. dollar and foreign currencies may affect our results of operations when translated into U.S. dollars. We do not currently engage in currency hedging activities to limit the risk of exchange rate fluctuations. However, in the future, we may use derivative instruments, such as foreign currency forward and option contracts, to hedge certain exposures to fluctuations in foreign currency exchange rates. The use of such hedging activities may not offset any or more than a portion of the adverse financial effects of unfavorable movements in foreign exchange rates over the limited time the hedges are in place. Moreover, the use of hedging instruments may introduce additional risks if we are unable to structure effective hedges with such instruments.

Our international operations may give rise to potentially adverse tax consequences.

Our corporate structure and associated transfer pricing policies anticipate future growth into the international markets. The amount of taxes we pay in different jurisdictions may depend on the application of the tax laws of the various jurisdictions, including the United States, to our international business activities, changes in tax rates, new or revised tax laws or interpretations of existing tax laws and policies and our ability to operate our business in a manner consistent with our corporate structure and intercompany arrangements. The taxing authorities of the jurisdictions in which we operate may challenge our methodologies for pricing intercompany transactions, which are generally required to be computed on an arm’s-length basis pursuant to intercompany arrangements or disagree with our determinations as to the income and expenses attributable to specific jurisdictions. If such a challenge or disagreement were to occur, and our position was not sustained, we could be required to pay additional taxes, interest and penalties, which could result in one-time tax charges, higher effective tax rates, reduced cash flows and lower overall profitability of our operations. Our financial statements could fail to reflect adequate reserves to cover such a contingency.

Changes in tax laws or regulations in the various tax jurisdictions we are subject to that are applied adversely to us or our customers could increase the costs of our solutions and solution packages and harm our business.

New income, sales, use or other tax laws, statutes, rules, regulations or ordinances could be enacted at any time. Those enactments could harm our domestic and international business operations, and our business and financial performance. Further, existing tax laws, statutes, rules, regulations or ordinances could be interpreted, changed, modified or applied adversely to us. These events could require us or our customers to pay additional tax amounts on a prospective or retroactive basis, as well as require us or our customers to pay fines and/or penalties and interest for past amounts deemed to be due. If we raise our prices to offset the costs of these changes, existing and potential future customers may elect not to purchase our solutions and/or solution packages in the future. Additionally, new, changed, modified or newly interpreted or applied tax laws could increase our customers' and our compliance, operating and other costs, as well as the costs of our solutions and solution packages. Further, these events could decrease the capital we have available to operate our business. Any or all of these events could harm our business and financial performance.

A change in tax laws in key jurisdictions could materially increase our tax expense.

We are subject to income taxes in the United States and many foreign jurisdictions. Changes to income tax laws and regulations, or the interpretation of such laws, in any of the jurisdictions in which we operate could significantly increase our effective tax rate and ultimately reduce our cash flows from operating activities and otherwise have a material adverse effect on our financial condition. Various levels of government are increasingly focused on tax reform and other legislative actions to increase tax revenue. On November 19, 2021, the U.S. Congress passed the Build Back Better Act reconciliation bill, which includes a 15% minimum corporate tax applicable to corporations that generate over $1 billion of income, limitations on interest deductions and the adoption of a country-by-country minimum tax on the foreign income of U.S. corporations. The bill is currently under discussion by the U.S. Senate, and even though there is uncertainty regarding its adoption, if adopted, our results of operations could be impacted. In addition, further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting project undertaken by the Organisation for Economic Co-operation and Development, which represents a coalition of member countries and recommended changes to numerous long-standing tax principles. If implemented by taxing authorities, such changes, as well as changes in U.S. federal and state tax laws or in taxing jurisdictions' administrative interpretations, decisions, policies, and positions, could have a material adverse effect on our business, results of operations, or financial condition.

If we cannot maintain our corporate culture as we grow, our business may be harmed.

We believe that our corporate culture has been a critical component to our success and that our culture creates an environment that drives and perpetuates our overall business strategy. We have invested substantial time and resources in building our team and we expect to continue to hire aggressively as we expand, including with respect to our international operations. As we grow and mature as a public company and grow internationally, we may find it difficult to maintain our corporate culture. In addition, we may need to adapt our corporate culture and work environments to changing circumstances, such as during times of a natural disaster or pandemic, including the ongoing COVID-19 pandemic. Any failure to preserve our culture could negatively affect our future success, including our ability to recruit and retain personnel and effectively focus on and pursue our business strategy.

We face risks associated with having operations and employees located in Israel.

We have an office and employees located in Israel. As a result, political, economic, and military conditions in Israel directly affect our operations. The future of peace efforts between Israel and its Arab neighbors remains uncertain. There has been a significant increase in hostilities and political unrest between Hamas and Israel in the past few years. The effects of these hostilities and violence on the Israeli economy and our operations in Israel are unclear, and we cannot predict the effect on us of further increases in these hostilities or future armed conflict, political instability or violence in the region. Current or future tensions and conflicts in the Middle East could adversely affect our business, operating results, financial condition and cash flows.

In addition, many of our employees in Israel are obligated to perform annual reserve duty in the Israeli military and are subject to being called for active duty under emergency circumstances. We cannot predict the full impact of these conditions on us in the future, particularly if emergency circumstances or an escalation in the political situation occurs. If many of our employees in Israel are called for active duty for a significant period of time, our operations and our business could be disrupted and may not be able to function at full capacity. Any disruption in our operations in Israel could adversely affect our business.

A portion of our revenue is generated by sales to government entities, which are subject to a number of challenges and risks, such as increased competitive pressures, administrative delays and additional approval requirements.

A portion of our revenue is generated by sales to U.S. and foreign federal, state and local governmental agency customers, and we may in the future increase sales to government entities. Selling to government entities can be highly competitive, expensive and time consuming, often requiring significant upfront time and expense without any assurance that we will complete a sale or imposing terms of sale which are less favorable than the prevailing market terms. Government demand and payment for our solutions, solution packages and services may be impacted by public sector budgetary cycles and funding authorizations, with funding reductions or delays adversely affecting public sector demand for our solutions and solution packages. Changes in government procurement policy, priorities, regulations, technology initiatives or requirements may negatively impact our potential for growth in the government sector. For example, the U.S. government imposes evolving cybersecurity requirements, including under the Federal Risk and Authorization Management Program (FedRAMP), which seeks to standardize security assessment and authorization for cloud products and services used by U.S. federal agencies. Compliance with these requirements is complex and costly, and failure to meet the required security controls could limit our ability to sell products and services, directly or indirectly, to state government entities in the U.S. and other jurisdictions, and to the federal government through our reseller and distribution partners. Although we have achieved “in process” designation for FedRAMP for our PingOne for Government solution, we are still subject to agency authorization and monitoring, and this may impact certain of our obligations under customer contracts, including contracts with non-government entities. Further, 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.

Risks Relating to Our Indebtedness

Our existing indebtedness could adversely affect our business and growth prospects.

On November 23, 2021, we entered into a new credit agreement (the “2021 Credit Agreement”) for a new term loan B facility consisting of an aggregate principal amount of $300 million (the “2021 Term Loan Facility”) maturing on November 23, 2028 and for a new revolving credit facility in an aggregate principal amount of $150 million (the “2021 Revolving Facility”, together with the 2021 Term Loan Facility, the “2021 Credit Facilities”) maturing on November 23, 2026. We used a portion of the proceeds from the 2021 Term Loan Facility to repay in full the indebtedness outstanding under our previous credit agreement. We expect to use the remaining proceeds for working capital and general corporate purposes. All obligations under the 2021 Credit Agreement are secured by a first priority lien on substantially all of our assets and the assets of our subsidiaries, subject to certain customary exceptions. We repaid all of the outstanding borrowings under our then-existing revolving credit facility. Our indebtedness, or any additional indebtedness we may incur, could require us to divert funds identified for other purposes for debt service and impair our liquidity position. If we cannot generate sufficient cash flow from operations to service our debt, we may need to refinance our debt, dispose of assets or issue equity to obtain necessary funds. We do not know whether we will be able to take any of these actions on a timely basis, on terms satisfactory to us or at all. As of December 31, 2021, we had total long term indebtedness outstanding of $300.3 million, including $300.0 million under our 2021 Term Loan Facility and $0.3 million of outstanding letters of credit. There were no amounts drawn under the 2021 Revolving Facility as of December 31, 2021.

Our indebtedness, the cash flow needed to satisfy our debt and the covenants contained in our 2021 Credit Agreement have important consequences, including:

- limiting funds otherwise available for financing our capital expenditures by requiring us to dedicate a portion of our cash flows from operations to the repayment of debt and the interest on this debt;
- limiting our ability to incur additional indebtedness;
- limiting our ability to capitalize on significant business opportunities;
- making us more vulnerable to rising interest rates; and
- making us more vulnerable in the event of a downturn in our business.

Our level of indebtedness may place us at a competitive disadvantage to our competitors that are not as highly leveraged. Fluctuations in interest rates can increase borrowing costs. Increases in interest rates may directly impact the amount of interest we are required to pay and reduce earnings accordingly. In addition, developments in tax policy, such as the disallowance of tax deductions for interest paid on outstanding indebtedness, could have an adverse effect on our liquidity and our business, financial conditions and results of operations. Further, our 2021 Credit Agreement contains customary affirmative and negative covenants and certain restrictions on operations that could impose operating and financial limitations and restrictions on us, including restrictions on our ability to enter into particular transactions and to engage in other actions that we may believe are advisable or necessary for our business.

We expect to use cash flow from operations to meet current and future financial obligations, including funding our operations, debt service requirements and capital expenditures. The ability to make these payments depends on our financial and operating performance, which is subject to prevailing economic, industry and competitive conditions and to certain financial, business, economic and other factors beyond our control.

Despite current indebtedness levels and restrictive covenants, we may still be able to incur substantially more indebtedness or make certain restricted payments, which could further exacerbate the risks associated with our substantial indebtedness.

We may be able to incur significant additional indebtedness in the future. Although the financing documents governing our 2021 Credit Facilities contain restrictions on the incurrence of additional indebtedness and liens, these restrictions are subject to a number of important qualifications and exceptions, and the additional indebtedness and liens incurred in compliance with these restrictions could be substantial.

The financing documents governing our 2021 Credit Facilities permit us to incur certain additional indebtedness, including liabilities that do not constitute indebtedness as defined in the financing documents. We may also consider investments in joint ventures or acquisitions, which may increase our indebtedness. In addition, financing documents governing our 2021 Credit Facilities do not restrict Vista from creating new holding companies that may be able to incur indebtedness without regard to the restrictions set forth in the financing documents governing our 2021 Credit Facilities. If new debt is added to our currently anticipated indebtedness levels, the related risks that we face could intensify.

We may not be able to generate sufficient cash flow to service all of our indebtedness, and may be forced to take other actions to satisfy our obligations under such indebtedness, which may not be successful.

Our ability to make scheduled payments or to refinance outstanding debt obligations depends on our financial and operating performance, which will be affected by prevailing economic, industry and competitive conditions and by financial, business and other factors beyond our control. We may not be able to maintain a sufficient level of cash flow from operating activities to permit us to pay the principal, fees, premium, if any, and interest on our indebtedness. Any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a reduction of our credit rating, which would also harm our ability to incur additional indebtedness.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we may be forced to reduce or delay capital expenditures, sell assets, seek additional capital or seek to restructure or refinance our indebtedness. Any refinancing of our indebtedness could be at higher interest rates and may require us to comply with more onerous covenants. These alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations. In the absence of such cash flows and resources, we could face substantial liquidity problems and might be required to sell material assets or operations to attempt to meet our debt service obligations. The financing documents governing our 2021 Credit Facilities restrict our ability to conduct asset sales and/or use the proceeds from asset sales. We may not be able to consummate these asset sales to raise capital or sell assets at prices and on terms that we believe are fair and any proceeds that we do receive may not be adequate to meet any debt service obligations then due. If we cannot meet our debt service obligations, the holders of our indebtedness may accelerate such indebtedness and, to the extent such indebtedness is secured, foreclose on our assets. In such an event, we may not have sufficient assets to repay all of our indebtedness.

The terms of the financing documents governing our 2021 Credit Facilities restrict our current and future operations, particularly our ability to respond to changes or to take certain actions.

The financing documents governing our 2021 Credit Facilities contain a number of restrictive covenants that impose significant operating and financial restrictions on us and may limit our ability to engage in acts that may be in our long-term best interests, including restrictions on our ability to:

- incur additional indebtedness;
- pay dividends on or make distributions in respect of capital stock or repurchase or redeem capital stock;
- prepay, redeem or repurchase certain indebtedness;
- make loans and investments;
- sell or otherwise dispose of assets, including capital stock of restricted subsidiaries;
- incur liens;
- enter into transactions with affiliates; and
- consolidate, merge or sell all or substantially all of our assets.

The restrictive covenants in the financing documents governing our 2021 Credit Facilities require us to maintain specified financial ratios and satisfy other financial condition tests to the extent applicable. Our ability to meet those financial ratios and tests can be affected by events beyond our control.

A breach of the covenants or restrictions under the financing documents governing our 2021 Credit Facilities could result in an event of default under such documents. Such a default may allow the creditors to accelerate the related debt, which may result in the acceleration of any other debt to which a cross-acceleration or cross-default provision applies. In the event the holders of our indebtedness accelerate the repayment, we may not have sufficient assets to repay that indebtedness or be able to borrow sufficient funds to refinance it. Even if we are able to obtain new financing, it may not be on commercially reasonable terms or on terms acceptable to us. As a result of these restrictions, we may be:

- limited in how we conduct our business;
- unable to raise additional debt or equity financing to operate during general economic or business downturns; or
- unable to compete effectively or to take advantage of new business opportunities.

These restrictions, along with restrictions that may be contained in agreements evidencing or governing other future indebtedness, may affect our ability to grow in accordance with our growth strategy.

We may be unable to refinance our indebtedness.

We may need to refinance all or a portion of our indebtedness before maturity. We cannot assure you that we will be able to refinance any of our indebtedness on commercially reasonable terms or at all. There can be no assurance that we will be able to obtain sufficient funds to enable us to repay or refinance our debt obligations on commercially reasonable terms, or at all.

A lowering or withdrawal of the ratings assigned to our debt securities by rating agencies may increase our future borrowing costs and reduce our access to capital.

Our debt currently has a non-investment grade rating, and any rating assigned could be lowered or withdrawn entirely by a rating agency if, in that rating agency's judgment, future circumstances relating to the basis of the rating, such as adverse changes, so warrant. Any future lowering of our ratings likely would make it more difficult or more expensive for us to obtain additional debt financing.

Our failure to raise additional capital or generate cash flows necessary to expand our operations and invest in new technologies in the future could reduce our ability to compete successfully and harm our results of operations.

We may need to raise additional funds, and we may not be able to obtain additional debt or equity financing on favorable terms or at all. If we raise additional equity financing, our security holders may experience significant dilution of their ownership interests. If we engage in additional debt financing, we may be required to accept terms that restrict our ability to incur additional indebtedness, force us to maintain specified liquidity or other ratios or restrict our ability to pay dividends or make acquisitions. If we need additional capital and cannot raise it on acceptable terms, or at all, we may not be able to, among other things:

- develop and enhance our solutions and solution packages;
- continue to expand our solution and solution package development, sales and marketing organizations;
- hire, train and retain employees;
- respond to competitive pressures or unanticipated working capital requirements; or

- pursue acquisition opportunities.

In addition, our 2021 Credit Facilities also limit our ability to incur additional debt and therefore we likely would have to amend our 2021 Credit Facilities or issue additional equity to raise capital. If we issue additional equity, your interest in us will be diluted.

Risks Relating to Our Common Stock

Vista continues to have governance rights and as a result can influence certain of our corporate actions. Vista's interests may conflict with ours or yours in the future.

At December 31, 2021, Vista beneficially owned approximately 9.95% of our common stock.

Pursuant to the Director Nomination Agreement we entered into with Vista, Vista has the right to designate: (i) a number of directors (rounded up to the nearest whole number) equal to 20% of the total directors for so long as Vista beneficially owns at least 10% and less than 20% of the total number of shares of our common stock it owned on the date of our IPO and (ii) one director for so long as Vista beneficially owns at least 5% and less than 10% of the total number of shares of our common stock it owned on the date of our IPO. The Director Nomination Agreement prohibits us from increasing or decreasing the size of our Board without the prior written consent of Vista. For so long as Vista continues to own at least 5% of our stock, Vista will have influence on the composition of our Board and the approval of actions requiring shareholder approval. Accordingly, for such period of time, Vista will continue to have influence with respect to our management, business plans and policies, including the appointment and removal of our officers, decisions on whether to raise future capital and amending our charter and bylaws, which govern the rights attached to our common stock.

Vista and its affiliates engage in a broad spectrum of activities, including investments in the information and business services industry generally. In the ordinary course of their business activities, Vista and its affiliates may engage in activities where their interests conflict with our interests or those of our other shareholders, such as investing in or advising businesses that directly or indirectly compete with certain portions of our business or are suppliers or customers of ours. Our certificate of incorporation provides that none of Vista, any of its affiliates or any director who is not employed by us (including any non employee director who serves as one of our officers in both his director and officer capacities) or its affiliates has any duty to refrain from engaging, directly or indirectly, in the same business activities or similar business activities or lines of business in which we operate. Vista also may pursue acquisition opportunities that may be complementary to our business, and, as a result, those acquisition opportunities may not be available to us. In addition, Vista may have an interest in pursuing acquisitions, divestitures and other transactions that, in its judgment, could enhance its investment, even though such transactions might involve risks to you.

Provisions of our corporate governance documents could make an acquisition of us more difficult and may prevent attempts by our shareholders to replace or remove our current management, even if beneficial to our shareholders.

Our certificate of incorporation and bylaws and the Delaware General Corporation Law (the "DGCL") contain provisions that could make it more difficult for a third party to acquire us, even if doing so might be beneficial to our shareholders. Among other things:

- these provisions allow us to authorize the issuance of undesignated preferred stock, the terms of which may be established and the shares of which may be issued without shareholder approval, and which may include supermajority voting, special approval, dividend, or other rights or preferences superior to the rights of shareholders;

- these provisions provide for a classified board of directors with staggered three-year terms;

- these provisions provide that, at any time when Vista beneficially owns, in the aggregate, less than 40% in voting power of our stock entitled to vote generally in the election of directors, directors may only be removed for cause, and only by the affirmative vote of holders of at least $66^2/_3$% in voting power of all the then-outstanding shares of our stock entitled to vote thereon, voting together as a single class;

- these provisions prohibit shareholder action by written consent from and after the date on which Vista beneficially owns, in the aggregate, less than 35% in voting power of our stock entitled to vote generally in the election of directors;

- these provisions provide that at any time when Vista beneficially owns, in the aggregate, less than 50% in voting power of all outstanding shares of our stock entitled to vote generally in the election of directors, any amendment, alteration, rescission or repeal of our bylaws by our shareholders will require the affirmative vote of the holders of at least $66^2/_3$% in voting power of all the then-outstanding shares of our stock entitled to vote thereon, voting together as a single class; and

- these provisions establish advance notice requirements for nominations for elections to our board of directors ("Board") or for proposing matters that can be acted upon by shareholders at shareholder meetings; provided, however, that as long as Vista beneficially owns, in the aggregate, at least 10% in voting power of our stock entitled to vote generally in the election of directors, such advance notice procedure does not apply to it.

Our certificate of incorporation contains a provision that provides us with protections similar to Section 203 of the DGCL, and prevents us from engaging in a business combination with a person (excluding Vista and any of its direct or indirect transferees and any group as to which such persons are a party) who acquires at least 15% of our common stock for a period of three years from the date such person acquired such common stock, unless Board or shareholder approval is obtained prior to the acquisition. These provisions 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 you and other shareholders to elect directors of your choosing and cause us to take other corporate actions you desire, including actions that you may deem advantageous, or negatively affect the trading price of our common stock. In addition, because our Board is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our shareholders to replace current members of our management team.

These and other provisions in our certificate of incorporation, bylaws and Delaware law could make it more difficult for shareholders or potential acquirers to obtain control of our Board or initiate actions that are opposed by our then-current Board, including delay or impede a merger, tender offer or proxy contest involving our company. The existence of these provisions could negatively affect the price of our common stock and limit opportunities for you to realize value in a corporate transaction.

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

Pursuant to our certificate of incorporation, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware is the sole and exclusive forum for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our shareholders, (3) any action asserting a claim against us arising pursuant to any provision of the DGCL, our certificate of incorporation or our bylaws or (4) any other action asserting a claim against us that is governed by the internal affairs doctrine; provided that for the avoidance of doubt, the forum selection provision that identifies the Court of Chancery of the State of Delaware as the exclusive forum for certain litigation, including any "derivative action," will not apply to suits to enforce a duty or liability created by Securities Act, the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction. Our certificate of incorporation further provides that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock is deemed to have notice of and consented to the provisions of our certificate of incorporation described above. The forum selection clause in our certificate of incorporation may have the effect of discouraging lawsuits against us or our directors and officers and may limit our shareholders' ability to obtain a favorable judicial forum for disputes with us.

An active, liquid trading market for our common stock may not be sustained, which may limit your ability to sell your shares.

An active trading market for our common stock may not be sustained. A public trading market having the desirable characteristics of depth, liquidity and orderliness depends upon the existence of willing buyers and sellers at any given time, such existence being dependent upon the individual decisions of buyers and sellers over which neither we nor any market maker has control. The failure of an active and liquid trading market to continue would likely have a material adverse effect on the value of our common stock. The market price of our common stock may decline below the public offering price, and you may not be able to sell your shares of our common stock at or above the price you paid in this offering, or at all. An inactive market may also impair our ability to raise capital to continue to fund operations by issuing shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

Our operating results and stock price may be volatile, and the market price of our common stock may drop below the price you paid.

Our quarterly operating results are likely to fluctuate in the future. In addition, securities markets worldwide have experienced, and are likely to continue to experience, significant price and volume fluctuations. This market volatility, as well as general economic, market or political conditions, could subject the market price of our shares to wide price fluctuations regardless of our operating performance. Our operating results and the trading price of our shares may fluctuate in response to various factors, including:

- market conditions in our industry or the broader stock market;
- actual or anticipated fluctuations in our quarterly financial and operating results;
- introduction of new solutions, solution packages or services by us or our competitors;
- issuance of new or changed securities analysts' reports or recommendations;
- sales, or anticipated sales, of large blocks of our stock;
- additions or departures of key personnel;
- regulatory or political developments;
- litigation and governmental investigations;
- changing economic conditions;
- investors' perception of us;
- events beyond our control such as weather and war; and
- any default on our indebtedness.

These and other factors, many of which are beyond our control, may cause our operating results and the market price and demand for our shares to fluctuate substantially. Fluctuations in our quarterly operating results could limit or prevent investors from readily selling their shares and may otherwise negatively affect the market price and liquidity of our shares. In addition, in the past, when the market price of a stock has been volatile, holders of that stock have sometimes instituted securities class action litigation against the company that issued the stock. If any of our shareholders brought a lawsuit against us, we could incur substantial costs defending the lawsuit. Such a lawsuit could also divert the time and attention of our management from our business, which could significantly harm our profitability and reputation.

A significant portion of our total outstanding shares may be sold into the market in the near future. This could cause the market price of our common stock to drop significantly, even if our business is doing well.

Sales of a substantial number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares intend to sell shares, could reduce the market price of our common stock. We have registered shares of common stock that we may issue under our equity compensation plans. Such shares can be freely sold in the public market upon issuance, subject to any applicable lock-up agreements. The market price of our stock could decline if the holders of a large portion of our shares of common stock sell them or are perceived by the market as intending to sell them.

Because we have no current plans to pay regular cash dividends on our common stock for the foreseeable future, you may not receive any return on investment unless you sell your common stock for a price greater than that which you paid for it.

We do not anticipate paying any regular cash dividends on our common stock for the foreseeable future. Any decision to declare and pay dividends in the future will be made at the discretion of our Board and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that our Board may deem relevant. In addition, our ability to pay dividends is, and may be, limited by covenants of existing and any future outstanding indebtedness we or our subsidiaries incur, including under our 2021 Credit Facilities. Therefore, any return on investment in our common stock is solely dependent upon the appreciation of the price of our common stock on the open market, which may not occur.

If securities or industry analysts do not publish research or reports about our business, if they adversely change their recommendations regarding our shares or if our results of operations do not meet their expectations, our stock price and trading volume could decline.

The trading market for our shares is influenced by the research and reports that industry or securities analysts publish about us or our business. We do not have any control over these analysts. If one or more of these analysts cease coverage of us or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline. Moreover, if one or more of the analysts who cover us downgrade our stock, or if our results of operations do not meet their expectations, our stock price could decline.

We may issue shares of preferred stock in the future, which could make it difficult for another company to acquire us or could otherwise adversely affect holders of our common stock, which could depress the price of our common stock.

Our certificate of incorporation authorizes us to issue one or more series of preferred stock. Our Board has the authority to determine the preferences, limitations and relative rights of the shares of preferred stock and to fix the number of shares constituting any series and the designation of such series, without any further vote or action by our shareholders. Our preferred stock could be issued with voting, liquidation, dividend and other rights superior to the rights of our common stock. The potential issuance of preferred stock may delay or prevent a change in control of us, discouraging bids for our common stock at a premium to the market price, and materially adversely affect the market price and the voting and other rights of the holders of our common stock.

General Risk Factors

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

We are subject to anti corruption and anti bribery and similar laws, such as the U.S. Foreign Corrupt Practices Act of 1977, as amended, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, the U.K. Bribery Act 2010 and other anti corruption, anti bribery and anti money laundering laws in countries in which we conduct activities. Anti corruption and anti bribery laws have been enforced aggressively in recent years and are interpreted broadly and prohibit companies and their employees and agents from promising, authorizing, making, offering, soliciting, or accepting, directly or indirectly, improper payments or other improper benefits to or from any person whether in the public or private sector. As we increase our international sales and business, our risks under these laws may increase. Noncompliance with these laws could subject us to investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, adverse media coverage and other consequences. Any investigations, actions or sanctions could adversely affect our business, results of operations and financial condition.

We are subject to governmental export and import controls and economic sanctions laws 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 restrictions under U.S. export and import controls and trade and economic sanctions laws, including the U.S. Commerce Department's Export Administration Regulations, U.S. Customs regulations and various economic and trade sanctions regulations maintained by the U.S. Treasury Department's Office of Foreign Assets Control. U.S. export control laws and U.S. economic sanctions laws include prohibitions on the sale or supply of certain products and services to U.S. embargoed or sanctioned countries, governments, persons and entities. Changes in our solutions, solution packages or services or changes in applicable export or import regulations may create delays in the introduction and sale of our solutions and solution packages in international markets, prevent our customers with international operations from deploying our solutions or solution packages or, in some cases, prevent the export or import of our solutions or solution packages to certain countries, governments, or persons altogether. Any decreased use of our solutions and solution packages or limitation on our ability to export or sell our solutions and solution packages would likely adversely affect our business.

Furthermore, we incorporate encryption technology into certain of our solutions. U.S. export control laws require authorization for the export of encryption items. In addition, various countries regulate the import of certain encryption technology, including through import permitting and licensing requirements, and have enacted laws that could limit our ability to deploy our solutions, solution packages and services or could limit our customers' ability to implement our offerings and services in those countries. 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.

Although we take precautions to prevent our solutions and solution packages from being provided in violation of U.S. export control and economic sanctions laws, our solutions and solution packages may have been in the past, and could in the future be, provided inadvertently in violation of such laws. If we fail to comply with U.S. export control and economic sanctions 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 monetary penalties. In addition, violations of such laws could result in negative consequences to us, including government investigations, penalties and harm to our reputation.

We may be the subject of various legal proceedings which could have a material adverse effect on our business, financial condition or results of operations.

In the ordinary course of business, we may be involved in various litigation matters, including but not limited to commercial disputes, employee claims and class actions, and from time to time may be involved in governmental or regulatory investigations or similar matters arising out of our current or future business. Any claims asserted against us, regardless of merit or eventual outcome, could harm our reputation and have an adverse impact on our relationship with our customers and other third parties and could lead to additional related claims. Certain claims may seek injunctive relief, which could disrupt the ordinary conduct of our business and operations or increase our cost of doing business. Our insurance or indemnities may not cover all claims that may be asserted against us, and any claims asserted against us, regardless of merit or eventual outcome, may harm our reputation and cause us to expend resources in our defense. Furthermore, there is no guarantee that we will be successful in defending ourselves in future litigation or similar matters under various laws. Should the ultimate judgments or settlements in any future litigation or investigation significantly exceed our insurance coverage, they could adversely affect our business, results of operations and financial condition.

We are subject to SEC rules and regulations regarding our internal control over financial reporting. If we fail to maintain effective internal control over financial reporting and disclosure controls and procedures or identify material weaknesses in our internal control over financial reporting, we may not be able to accurately report our financial results, or report them in a timely manner.

As a public reporting company, we are subject to the rules and regulations established from time to time by the SEC and the NYSE. These rules and regulations require that, among other things, we establish and periodically evaluate procedures with respect to our internal control over financial reporting. Reporting obligations as a public company place a considerable strain on our financial and management systems, processes and controls, as well as on our personnel.

In addition, as a public company we are required to document and test our internal control over financial reporting pursuant to Section 404 of the Sarbanes–Oxley Act so that our independent registered public accounting firm can attest in this Annual Report on Form 10-K as to the effectiveness of our internal control over financial reporting, and in future annual reports. As part of our testing, we have been required and will continue to be required to document and, in certain cases, make changes to our internal control over financial reporting, which could result in increased costs to us.

If our senior management is unable to conclude that we have effective internal control over financial reporting or to certify the effectiveness of such controls; if our independent registered public accounting firm cannot render an unqualified opinion on management's assessment and the effectiveness of our internal control over financial reporting; or if material weaknesses in our internal control over financial reporting is identified, we could be subject to regulatory scrutiny, a loss of public and investor confidence, and to litigation from investors and stockholders, which could have a material adverse effect on our business and our stock price. In addition, if we do not maintain adequate financial and management personnel, processes and controls, we may not be able to manage our business effectively or accurately report our financial performance on a timely basis, which could cause a decline in our common stock price and adversely affect our results of operations and financial condition.

Catastrophic events may disrupt our business.

Natural disasters, pandemics or other catastrophic events, including those exacerbated by the effects of climate change, may cause damage or disruption to our operations, international commerce and the global economy, and thus could harm our business. In the event of a major earthquake, hurricane or catastrophic event such as fire, power loss, telecommunications failure, cyberattack, pandemic, war or terrorist attack, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our application development, lengthy interruptions in our solutions, breaches of data security and loss of critical data, all of which could adversely affect our business, results of operations and financial condition. In addition, the insurance we maintain may not be adequate to cover our losses resulting from disasters or other business interruptions.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties

Our corporate headquarters are in Denver, Colorado, where we lease 89,856 square feet of office space as of December 31, 2021. We also have domestic offices in Boston, Massachusetts, and Austin, Texas and international offices in the United Kingdom, Canada, India, Israel, France, and Australia.

We lease all of our facilities. We believe that our facilities are adequate for our current needs and anticipate that suitable additional space will be readily available to accommodate any foreseeable expansion of our operations.

Item 3. Legal Proceedings

From time to time, we are involved in various claims and legal actions that arise in the ordinary course of business. Although the results of litigation and claims cannot be predicted with certainty, we do not believe that the ultimate resolution of these actions will have a material adverse effect on our financial position, results of operations, liquidity and capital resources.

Future litigation may be necessary to defend ourselves and our partners by determining the scope, enforceability and validity of third-party proprietary rights or to establish our proprietary rights. The results of any current or future litigation cannot be predicted with certainty, and regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources and other factors.

Item 4. Mine Safety Disclosure

None.

PART II.

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

Market Information for Our Common Stock

Our common stock, $0.001 par value per share, began trading on the NYSE under the symbol "PING" on September 18, 2019. Prior to that time, there was no public market for our common stock. Shares sold in our IPO were priced at $15.00 per share.

Holders of Record

As of February 17, 2022, there were 46,328 holders of record of our common stock. This figure does not include a greater number of beneficial holders of our common stock whose shares are held by banks, brokers and other financial institutions.

Dividend Policy

We have never declared or paid any cash dividends on our capital stock, and we do not currently intend to pay any cash dividends in the foreseeable future. We expect to retain future earnings, if any, to fund the development and growth of our business. Any decision to declare and pay dividends in the future will be made at the discretion of our Board and will depend on, among other things, our results of operations, financial condition, cash requirements, contractual restrictions and other factors that our Board may deem relevant. In addition, our ability to pay dividends is, and may be, limited by covenants of existing and any future outstanding indebtedness we or our subsidiaries incur, including under our 2021 Credit Facilities.

Securities Authorized for Issuance under Equity Compensation Plans

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

Stock Performance Graph

The following performance graph and related information shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of that section or Sections 11 and 12(a)(2) of the Securities Act of 1933, as amended, and shall not be incorporated by reference into any registration statement or other document filed by us with the SEC, whether made before or after the date of this Annual Report on Form 10-K, regardless of any general incorporation language in such filing, except as shall be expressly set forth by specific reference in such filing.

The following graph and related information shows a comparison of the cumulative total return for our common stock, Standard & Poor's 500 Index ("S&P 500 Index"), Standard & Poor's 500 Information Technology Index ("S&P 500 IT Index") and the Russell 2000 Index between September 19, 2019 (the date our common stock commenced trading on the NYSE) through December 31, 2021. All values assume an initial investment of $100 and reinvestment of any dividends. The comparisons are based on historical data and are not indicative of, nor intended to forecast, the future performance of our common stock.

Company/Index	September 19, 2019	September 30, 2019	December 31, 2019	December 31, 2020	December 31, 2021
Ping Identity	$ 100.00	$ 115.00	$ 162.00	$ 190.93	$ 152.53
S&P 500 Index	$ 100.00	$ 99.00	$ 107.45	$ 124.92	$ 158.51
S&P 500 Information Technology Index	$ 100.00	$ 99.09	$ 112.96	$ 160.65	$ 214.22
Russell 2000 Index	$ 100.00	$ 97.56	$ 106.85	$ 126.47	$ 143.79

Recent Sales of Unregistered Securities and Use of Proceeds

Unregistered Sales of Equity Securities

There were no unregistered sales of equity securities during the year ended December 31, 2021.

Issuer Purchases of Equity Securities

None.

Item 6. Reserved

The Company has applied the amendment to Regulation S-K Item 301 which became effective on February 10, 2022.

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

The following discussion and analysis summarizes the significant factors affecting the consolidated operating results, financial condition, liquidity and cash flows of our company as of and for the periods presented below. The following discussion and analysis should be read in conjunction with our consolidated financial statements and the related notes thereto included elsewhere in this Annual Report on Form 10-K. The discussion contains forward-looking statements that are based on the beliefs of management, as well as assumptions made by, and information currently available to, our management. Actual results could differ materially from those discussed in or implied by forward-looking statements as a result of various factors, including those discussed below and elsewhere in this Annual Report on Form 10-K, particularly in the sections entitled "Risk Factors" and "Forward-Looking Statements." We have omitted the financial results for the fiscal year ended December 31, 2019 where it would be redundant to the discussion previously included in Part II, Item 7 of our 2020 Annual Report on Form 10-K filed with the SEC on February 24, 2021.

Overview

Ping Identity's mission is to secure the digital world through intelligent identity. We deliver on this mission by providing intelligent identity solutions for the enterprise, leveraging AI and ML to provide real-time authentication. We are built to scale for 3 billion-plus individual and machine identities globally at speeds that allow for up to 50,000 unique authentications per second. We enable companies to achieve zero trust security by making identity frictionless, giving our customer the ability to go faster, get to the cloud, and reduce costs, all while improving their end-user experiences.

We solve big problems for the world's largest enterprises. We serve more than half of the Fortune 100, and we have partnerships with companies such as Microsoft and Amazon. We serve a broad range of vertical markets with particular strength in financial services, healthcare, technology, aerospace, and retail especially among the Global 5000.

Ping Identity's platform enables a range of use cases for workforces, for partners, and for a wide variety of consumer-facing applications. Our solutions and solution packages can be deployed as SaaS, as on premises software, or a hybrid. We also provide flexibility to deploy our SaaS solutions in Ping Identity's cloud, the customer's private cloud, or in a public cloud.

The Ping Intelligent Identity Platform is comprised of multiple solutions that can be purchased individually or integrated as a more complete set of solutions for the customer, workforce, partner or IoT use case: SSO, MFA, Access Security, Directory, Dynamic Authorization, Risk Management, Identity Verification, API Intelligence, Orchestration and Fraud Detection.

Our offerings are predominantly priced based on the solution, use case and number of identities. We sell our platform through subscription-based contracts, and substantially all of our customers pay annually in advance. We sell our solutions primarily through direct sales, which are enhanced by collaboration with our channel partners, resellers, system integrators and technology partners. This includes sourcing new leads, aiding in pre-sale processes (such as proof of concepts, demos or requests for proposals) and reselling our solutions to customers. We also leverage a number of our channel partners and system integrators to provide the implementation services for some of our larger and more complex deployments, significantly increasing the time-to-value for our customers and maximizing the efficiency of our go-to-market efforts.

Impact of COVID-19

Though the impact of rapidly changing market and economic conditions due to the COVID-19 pandemic remains uncertain, it continues to disrupt the business of our customers and partners and may continue to impact our business and consolidated results of operations and financial condition in the future. The COVID-19 pandemic resulted in a global recession with a corresponding decrease in demand for certain goods and services, including from our own customers, while also disrupting sales channels, marketing activities and supply chains, and the sustainability of the economic recovery observed in 2021 remains unclear.

While we continued to see limited effects of the COVID-19 pandemic on our results of operations and overall financial performance for the year ended December 31, 2021, the total effect of the COVID-19 pandemic will not be fully reflected in our results of operations and overall financial performance until future periods and such effect is uncertain. Specifically, during the year ended December 31, 2021, we continued to experience overall strong engagement with enterprise customers as work-from-home and increased virtual customer engagement highlighted the need for modernization of their identity security infrastructure. COVID-19-related restrictions were lifted in many parts of the U.S. during the year ended December 31, 2021, which had a positive impact on our financial performance during that period, but we cannot predict the effect that variants of COVID-19, and any related governmental responses to such variants, will have on our business and our financial performance, particularly as certain geographic locations have reinstated restrictions due to COVID-19.

In addition, our consolidated financial statements reflect estimates and assumptions made by management that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates and assumptions reflected in our consolidated financial statements include, but are not limited to, establishing valuation allowances based on expected credit losses and the collectability of financial assets, determining useful lives for finite-lived assets, assessing the recoverability of long-lived assets, determining the fair values of assets acquired and liabilities assumed in business combinations, determining the value of right-of-use assets and lease liabilities, accounting for income taxes and related valuation allowances against deferred tax assets, valuing stock option awards and assessing the probability of the awards meeting vesting conditions, recognizing revenue, determining the amortization period for deferred commissions and assessing the accounting treatment for commitments and contingencies. Management evaluates these estimates and assumptions on an ongoing basis and makes estimates based on historical experience and various other assumptions that are believed to be reasonable. Actual results may differ from these estimates, including as a result of the COVID-19 pandemic. We will continue to evaluate the nature and extent of the impact to our business and our consolidated results of operations and financial condition.

Key Factors Affecting Our Performance

We believe that our future performance will depend on many factors, including the following:

Generating Additional Sales to Existing Customers

A customer journey often begins with the purchase of one of our solutions for one use case. Once customers realize the value of that solution, their spend with us expands by (i) adopting another identity use case, (ii) deploying additional solutions and solution packages and/or (iii) adding more identities over time.

Our future revenue growth is dependent upon our ability to continue to expand our customers' use of our platform. Our ability to increase sales to existing customers will depend on a number of factors, including satisfaction or dissatisfaction with our solutions, competition, pricing, economic conditions and spending by customers on our solutions. We have adopted a customer success strategy and implemented processes across our customer base to drive revenue retention and expansion.

Increasing the Size of our Customer Base

We believe there is significant opportunity to increase market adoption of our platform by new customers. Our SSO, Access Security and Directory solutions often replace legacy and homegrown systems. We also have significant greenfield opportunities with our MFA, Dynamic Authorization, Risk Management, Identity Verification, API Intelligence, Orchestration and Fraud Detection solutions and the IoT use case. To increase our customer base, we plan to continue to expand our sales force and channel partner network, both domestically and internationally, enhance our marketing efforts and target new buyers. For example, we have extended our cloud-based offering to target developers, who represent a new potential buyer for us. Over time, we believe sales to developers could increase the size of our customer base.

Maintaining our Technology Differentiation and Product Leadership

The Ping Intelligent Identity Platform is designed for large enterprises with complex, hybrid IT requirements. We have spent over a decade building a standards-based platform with turnkey integrations designed to ensure that large enterprises can easily and rapidly deploy our platform within their complex infrastructures. We intend to continue making investments in research and development to extend our platform and technology capabilities while also expanding our solutions to address new use cases.

Investing for Growth

We believe IAM represents a large market opportunity, and we plan to invest in order to support further growth. During 2018, we accelerated investments in our business to expand our footprint within this large and growing market. Specifically, we invested in new cloud-based offerings to broaden the Ping Intelligent Identity Platform and the scope of our solutions to cover new identity security threats, such as APIs. We also invested in deploying our platform as a single tenant cloud-based offering, managed by us, to help extend the reach of our solutions within our customers' infrastructures, while providing them with the level of control and configuration they require. Since 2018, we have seen progress with these investments and expect to continue to invest in these areas. Additionally, we plan to invest in increased marketing efforts, expanding our sales force, and growing our network of channel partners, resellers, system integrators and technology partners. However, we are not expecting these investments to provide our business with meaningful increases to ARR growth in the immediate term as we expect natural purchasing cycles will affect the speed of market adoption.

Additionally, we have a large and growing international presence and intend to grow our customer base in various international regions by making investments in our sales team globally. For the year ended December 31, 2021, our international revenue was 26% of our total revenue. We expect international sales to be a meaningful revenue contributor in future periods.

Seasonality

Given the purchasing patterns of our enterprise customers, we typically experience seasonality in terms of when we receive orders from our customers. Our customers often time their purchases and renewals of our solutions to coincide with their fiscal year end, which is typically June 30 or December 31. Because of these purchasing patterns, a greater percentage of our annual subscription revenue from term-based licenses, the revenue from which is recognized up front at the later of delivery or commencement of the license term, has come from our second and fourth quarters, rather than from other quarters. However, due to fluctuations in the economic environment resulting from COVID-19, we did not see our historical trends in seasonality for the years ended December 31, 2021 and 2020, where 26% and 25%, and 24% and 26% of our annual revenue was in our second and fourth quarters, respectively.

Key Business Metrics

In addition to our GAAP financial information, we review a number of operating and financial metrics, including the following key metrics, to evaluate our business, measure our performance, identify trends affecting our business, formulate business plans and make strategic decisions.

Annual Recurring Revenue

ARR represents the annualized value of all subscription contracts as of the end of the period. ARR mitigates fluctuations due to seasonality, contract term and the sales mix of subscriptions for term-based licenses and SaaS. ARR only includes the annualized value of subscription contracts. ARR does not have any standardized meaning and is therefore unlikely to be comparable to similarly titled measures presented by other companies.

ARR should be viewed independently of revenue and deferred revenue and is not intended to be combined with or to replace either of those items. ARR is not a forecast and the active contracts at the end of a reporting period used in calculating ARR may or may not be extended or renewed by our customers.

The table below sets forth our ARR as of the end of December 31, 2021 and 2020.

	December 31,		Change	
	2021	2020	$	%
	(dollars in thousands)			
ARR	$ 312,726	$ 259,090	$ 53,636	21 %

Dollar-Based Net Retention Rate

To further illustrate the land and expand economics of our customer relationships, we examine the rate at which our customers increase their subscriptions for our solutions. Our dollar-based net retention rate measures our ability to increase revenue across our existing customer base through expanded use of our platform, offset by customers whose subscription contracts with us are not renewed or renew at a lower amount.

We calculate our dollar-based net retention rate as of the end of a reporting period as follows:

- *Numerator.* We measure ending ARR for the current reporting period from customers with associated ending ARR for the same period last year.

- *Denominator.* We measure ending ARR for the same period last year.

The quotient obtained from this calculation is our dollar-based net retention rate. Our dollar-based net retention rates were 112% and 108% at December 31, 2021 and 2020, respectively. We believe our ability to cross-sell our new solutions to our installed base, particularly MFA, API Intelligence, Fraud Detection, Orchestration, Risk Management, Dynamic Authorization and Identity Verification, will continue to support our high dollar-based net retention rate.

Large Customers

We believe that our ability to increase the number of customers on our platform, particularly the number of customers with greater than ARR of $1,000,000 and ARR of $250,000, demonstrates our focus on the large enterprise market and our penetration within those enterprises. Increasing awareness of our platform, further developing our sales and marketing expertise and channel partner ecosystem, and continuing to build solutions that address the unique identity needs of large enterprises have increased our number of large customers across industries. We believe there are significant upsell and cross-sell opportunities within our customer base by expanding the number of use cases, adding additional identities and selling new solutions.

At December 31, 2021, we had 71 customers with greater than $1,000,000 in ARR, an increase of 39% from 51 customers at December 31, 2020. Additionally, our customers with ARR of $250,000 or more increased from 260 at December 31, 2020 to 315 at December 31, 2021, representing a growth rate of 21%.

Non-GAAP Financial Measures

In addition to our results determined in accordance with GAAP, we believe the following non-GAAP measures are useful in evaluating our operating performance. 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 and assists in comparisons with other companies, some of which use similar non-GAAP financial information to supplement their GAAP results. The non-GAAP financial information is presented for supplemental informational purposes only, and should not be considered a substitute for financial information presented in accordance with GAAP, and may be different from similarly-titled non-GAAP measures used by other companies. A reconciliation is provided below for each non-GAAP financial measure to the most directly comparable financial measure stated in accordance with GAAP. Investors are encouraged to review the related GAAP financial measures and the reconciliation of these non-GAAP financial measures to their most directly comparable GAAP financial measures.

Free Cash Flow

Free Cash Flow is a supplemental measure of liquidity that is not made under GAAP and that does not represent, and should not be considered as, an alternative to cash flow from operations, as determined by GAAP. We define Free Cash Flow as net cash provided by (used in) operating activities less cash used for purchases of property and equipment and capitalized software development costs.

We use Free Cash Flow as one measure of the liquidity of our business. We believe that Free Cash Flow is a useful indicator of liquidity that provides information to management and investors about the amount of cash generated from our core operations that, after the purchases of property and equipment and capitalized software development costs, can be used for strategic initiatives, including investing in our business and selectively pursuing acquisitions and strategic investments. We further believe that historical and future trends in Free Cash Flow, even if negative, provide useful information about the amount of cash generated (or consumed) by our operating activities that is available (or is 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. We also believe that the use of Free Cash Flow enables us to more effectively evaluate our liquidity period-over-period and relative to our competitors.

A reconciliation of Free Cash Flow to net cash provided by operating activities, the most directly comparable GAAP measure, is as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Net cash provided by operating activities	$ 41,656	$ 22,375	$ 5,795
Less:			
Purchases of property and equipment	(4,153)	(2,595)	(8,696)
Capitalized software development costs	(18,997)	(13,255)	(10,460)
Free Cash Flow	$ 18,506	$ 6,525	$ (13,361)
Net cash used in investing activities	$ (103,117)	$ (48,320)	$ (19,756)
Net cash provided by (used in) financing activities	$ 135,504	$ 103,009	$ (2,020)
Cash paid for interest	$ 2,486	$ 2,263	$ 12,169

Free Cash Flow has limitations as an analytical tool, and you should not consider it in isolation, or as a substitute for analysis of our results as reported under GAAP. For example, Free Cash Flow does not represent the total increase or decrease in our cash balance for a given period. Because of these limitations, Free Cash Flow should not be considered as a replacement for cash flow from operations, as determined by GAAP, or as a measure of our profitability. We compensate for these limitations by relying primarily on our GAAP results and using non-GAAP measures only for supplemental purposes.

Non-GAAP Gross Profit

Non-GAAP Gross Profit is a supplemental measure of operating performance that is not made under GAAP and that does not represent, and should not be considered as, an alternative to gross profit, as determined by GAAP. We define Non-GAAP Gross Profit as gross profit, adjusted for stock-based compensation expense and certain amortization expense of acquired intangible assets and software developed for internal use.

We use Non-GAAP Gross Profit to understand and evaluate our core operating performance and trends, to prepare and approve our annual budget, and to develop short-term and long-term operating plans. We believe that Non-GAAP Gross Profit is a useful measure to us and to our investors because it provides consistency and comparability with our past financial performance and between fiscal periods, as the metric generally eliminates the effects of the variability of amortization of acquired intangibles and internal-use software and stock-based compensation expense from period to period, which may fluctuate for reasons unrelated to overall operating performance. We believe that the use of this measure enables us to more effectively evaluate our performance period-over-period and relative to our competitors.

A reconciliation of Non-GAAP Gross Profit to gross profit, the most directly comparable GAAP measure, is as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Gross profit	$ 204,567	$ 175,378	$ 187,194
Amortization expense	26,947	20,269	16,338
Stock-based compensation expense	3,446	1,072	221
Non-GAAP Gross Profit	$ 234,960	$ 196,719	$ 203,753

Non-GAAP Gross Profit has limitations as an analytical tool, and you should not consider it in isolation, or as a substitute for analysis of our results as reported under GAAP. Because of these limitations, Non-GAAP Gross Profit should not be considered as a replacement for gross profit, as determined by GAAP, or as a measure of our profitability. We compensate for these limitations by relying primarily on our GAAP results and using non-GAAP measures only for supplemental purposes.

Components of Results of Operations

Revenue

We recognize revenue under ASC 606 when our customer obtains control of goods or services in an amount that reflects the consideration that we expect to receive in exchange for those goods or services.

We derive revenue primarily from sales of subscriptions for our solutions to new and existing customers and, to a lesser extent, sales of professional services.

Subscription. Subscription revenue includes subscription term-based license revenue for solutions deployed on-premise within the customer's IT infrastructure or in a third-party cloud of their choice, subscription maintenance and support revenue from such deployments, and SaaS subscriptions, which give customers the right to access our SaaS-based solutions. We typically invoice subscription fees annually in advance. Subscription term-based license revenue is recognized upon transfer of control of the software, which occurs at delivery or when the license term commences, if later. All of our maintenance and support revenue and revenue from SaaS subscriptions is recognized ratably over the term of the applicable agreement.

For the years ended December 31, 2021 and 2020, 58% and 59%, respectively, of our revenue was from subscription term-based licenses. We expect that a majority of our revenue will be from subscription term-based licenses for the foreseeable future. Changes in period-over-period subscription revenue growth are primarily impacted by the following factors:

- the type of new and renewed subscriptions (i.e., term-based or SaaS); and
- the duration of new and renewed term-based subscriptions.

While the number of new and increased subscriptions during a period impacts our subscription revenue growth, the type and duration of those subscriptions has a significantly greater impact on the amount and timing of revenue recognized in a period. Subscription revenue from term-based licenses is recognized at the beginning of the subscription term, while subscription revenue from SaaS and maintenance and support is recognized ratably over the subscription term. As a result, our revenue may fluctuate due to the timing of term-based licensing transactions. In addition, keeping other factors constant, when the percentage of subscription term-based licenses to total subscriptions sold or renewed in a period increases relative to the prior period, revenue growth will increase. Conversely, when the percentage of subscription SaaS and maintenance and support to total subscriptions sold or renewed in a period increases, revenue growth will generally decrease. Additionally, a multi-year subscription term-based license will generally result in greater revenue recognition up front relative to a one-year subscription term-based license. Therefore, keeping other factors constant, revenue growth will also trend higher in a period where the percentage of multi-year subscription term-based licenses to total subscription term-based licenses increases. In the year ended December 31, 2021, as customers elected longer contract durations in response to the strengthening economic outlook and easing of COVID-19 restrictions, multi-year subscription term-based license revenue increased as a percentage of total subscription term-based license revenue, which resulted in higher revenue growth. There is no guarantee that our customers will continue electing contracts with longer durations in future periods even if economic conditions continue to improve.

Professional Services and Other. Professional services and other revenue consists primarily of fees from professional services provided to our customers and partners to configure and optimize the use of our solutions, as well as training services related to the configuration and operation of our solutions. Our professional services are generally priced on a time and materials basis, which is generally invoiced monthly and for which revenue is recognized as the services are performed. Revenue from our training services and sponsorship fees is recognized on the date the services are complete. Over time, we expect our professional services revenue to remain relatively stable as a percentage of total revenue.

Cost of Revenue

Subscription. Subscription cost of revenue consists primarily of employee compensation costs for employees associated with supporting our subscription arrangements and certain third-party expenses. Employee compensation and related costs include cash compensation and benefits to employees, stock-based compensation, costs of third-party contractors and associated overhead costs. Third-party expenses consist of cloud infrastructure costs and other expenses directly associated with our customer support. We expect our subscription cost of revenue to increase in absolute dollars to the extent our subscription revenue increases.

Professional Services and Other. Professional services and other cost of revenue consists primarily of employee compensation costs directly associated with delivery of professional services and training, including stock-based compensation, costs of third-party contractors, and facility rental charges and other associated overhead costs. We expect our professional services and other cost of revenue to increase in absolute dollars relative to the growth of our business.

Amortization Expense. Amortization expense consists of amortization of developed technology and internal-use software.

Operating Expenses

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

Sales and Marketing. Sales and marketing expenses consist primarily of employee compensation costs, sales commissions, costs of general marketing and promotional activities, travel-related expenses and allocated overhead. Certain sales commissions earned by our sales force on subscription contracts are deferred and amortized over the period of benefit, which is generally four years. We expect to continue to invest in our sales force domestically and internationally, as well as in our channel relationships. We expect our sales and marketing expenses to increase on an absolute dollar basis and continue to be our largest operating expense category for the foreseeable future.

Research and Development. Research and development expenses consist primarily of employee compensation costs, allocated overhead and software and maintenance expenses. We will continue to invest in innovation and offer our customers new solutions to enhance our existing platform and expect such investment to increase on an absolute dollar basis as our business grows.

General and Administrative. General and administrative expenses consist primarily of employee compensation costs for corporate personnel, such as those in our executive, human resource, legal, facilities, accounting and finance, information security and information technology departments. In addition, general and administrative expenses include third-party professional fees, as well as all other supporting corporate expenses not allocated to other departments. General and administrative expense also includes acquisition-related expenses, which primarily consist of third-party expenses related to business acquisitions, such as professional services and legal fees.

We expect our general and administrative expenses to increase on an absolute dollar basis as our business grows. Also, we expect to incur additional general and administrative expenses as a result of continuing to operate as a public company, including costs related to maintaining the effectiveness of our internal control over financial reporting, including accounting-related costs and significant management oversight, costs to comply with the rules and regulations applicable to companies listed on a national securities exchange, costs related to compliance and reporting obligations pursuant to the rules and regulations of the SEC, and increased expenses for insurance, investor relations and professional services.

Depreciation and Amortization. Depreciation and amortization expense consists primarily of depreciation of our fixed assets and amortization of finite-lived acquired intangible assets such as customer relationships, trade names and non-compete agreements.

Other Income (Expense)

Interest Expense. Interest expense consists primarily of interest payments on our outstanding borrowings under our credit facilities as well as the amortization of associated deferred financing costs. See "— Liquidity and Capital Resources — Senior Secured Credit Facilities."

Other Income (Expense), Net. Other income (expense), net primarily consists of gains and losses from transactions denominated in a currency other than the functional currency, interest income and other income (expense). As we have expanded our international operations, our exposure to fluctuations in foreign currencies has increased, and we expect this to continue.

Benefit (Provision) for Income Taxes

Benefit (provision) for income taxes consists primarily of income taxes related to U.S. federal and state income taxes and income taxes in foreign jurisdictions in which we conduct business.

Results of Operations

The following table sets forth our consolidated statements of operations data for the periods indicated:

	Year Ended December 31, 2021	2020 (in thousands)	2019
Revenue:			
Subscription	$ 279,294	$ 224,131	$ 225,345
Professional services and other	20,155	19,458	17,553
Total revenue	299,449	243,589	242,898
Cost of revenue:			
Subscription (exclusive of amortization shown below)(1)	43,515	30,797	24,044
Professional services and other (exclusive of amortization shown below)(1)	24,420	17,145	15,322
Amortization expense	26,947	20,269	16,338
Total cost of revenue	94,882	68,211	55,704
Gross profit	204,567	175,378	187,194
Operating expenses:			
Sales and marketing(1)	117,459	88,910	78,889
Research and development(1)	78,512	48,934	46,016
General and administrative(1)	71,581	47,198	38,293
Depreciation and amortization	17,437	16,997	16,639
Gain on asset disposition	(1,397)	—	—
Total operating expenses	283,592	202,039	179,837
Income (loss) from operations	(79,025)	(26,661)	7,357
Other income (expense):			
Interest expense	(3,010)	(2,433)	(12,914)
Loss on extinguishment of debt	(153)	—	(4,532)
Other income (expense), net	(1,148)	2,947	363
Total other income (expense)	(4,311)	514	(17,083)
Loss before income taxes	(83,336)	(26,147)	(9,726)
Benefit for income taxes	18,945	14,256	8,222
Net loss	$ (64,391)	$ (11,891)	$ (1,504)

(1) Includes stock-based compensation as follows:

	Year Ended December 31, 2021	2020 (in thousands)	2019
Subscription cost of revenue	$ 1,735	$ 675	$ 141
Professional services and other cost of revenue	1,711	397	80
Sales and marketing	14,921	4,467	1,407
Research and development	20,702	5,294	1,364
General and administrative	16,731	5,791	3,340
Total	$ 55,800	$ 16,624	$ 6,332

The following table sets forth our consolidated statements of operations data expressed as a percentage of total revenue for the periods indicated:

	Year Ended December 31,		
	2021	2020	2019
Revenue:			
Subscription	93 %	92 %	93 %
Professional services and other	7	8	7
Total revenue	100	100	100
Cost of revenue:			
Subscription (exclusive of amortization shown below)	15	13	10
Professional services and other (exclusive of amortization shown below)	8	7	6
Amortization expense	9	8	7
Total cost of revenue	32	28	23
Gross profit	68	72	77
Operating expenses:			
Sales and marketing	38	37	32
Research and development	26	20	19
General and administrative	24	19	16
Depreciation and amortization	6	7	7
Gain on asset disposition	—	—	—
Total operating expenses	94	83	74
Income (loss) from operations	(26)	(11)	3
Other income (expense):			
Interest expense	(2)	(1)	(5)
Loss on extinguishment of debt	—	—	(2)
Other income (expense), net	—	1	—
Total other income (expense)	(2)	—	(7)
Loss before income taxes	(28)	(11)	(4)
Benefit for income taxes	6	6	3
Net loss	(22)%	(5)%	(1)%

Comparison of the Years Ended December 31, 2021 and 2020

Revenue

	Year Ended December 31,		Change	
	2021	2020	$	%
	(dollars in thousands)			
Revenue:				
Subscription	$ 279,294	$ 224,131	$ 55,163	25 %
Professional services and other	20,155	19,458	697	4
Total revenue	$ 299,449	$ 243,589	$ 55,860	23 %

Total revenue increased by $55.9 million for the year ended December 31, 2021 compared to the year ended December 31, 2020. The revenue growth was primarily attributable to an increase in subscription revenue of $55.2 million, discussed further below. The remaining growth was attributable to an increase in professional services and other revenue of $0.7 million primarily due to an increase in event sponsorship revenue from our live Identiverse conference in the second quarter of 2021, which was conducted virtually in the prior year as a result of COVID-19.

The table below sets forth the components of subscription revenue for the years ended December 31, 2021 and 2020.

	Year Ended December 31,		Change	
	2021	2020	$	%
	(dollars in thousands)			
Subscription:				
Multi-year subscription term-based licenses	$ 110,044	$ 86,578	$ 23,466	27 %
1-year subscription term-based licenses	62,468	57,966	4,502	8
Subscription term-based licenses	172,512	144,544	27,968	19
Subscription SaaS	57,617	38,072	19,545	51
Maintenance and support	49,165	41,515	7,650	18
Total subscription revenue	$ 279,294	$ 224,131	$ 55,163	25 %

Subscription revenue increased 25%, or $55.2 million, in the year ended December 31, 2021 compared to the year ended December 31, 2020. Total subscription revenue increased as a result of a greater amount of new and renewing subscriptions in the year ended December 31, 2021 compared to the year ended December 31, 2020. Remaining changes in subscription revenue were due to the changes in subscription type and duration, described further below.

Change in subscription type. The following table sets forth the components of subscription revenue expressed as a percentage of total subscription revenue:

	Year Ended December 31,		Change
	2021	2020	%
Subscription term-based licenses	62 %	64 %	(2)%
Subscription SaaS	21	17	4
Maintenance and support	17	19	(2)
Total subscription revenue	100 %	100 %	

Subscription term-based license revenue as a percentage of subscription revenue decreased from 64% in the year ended December 31, 2020 to 62% in the year ended December 31, 2021. Subscription SaaS as a percentage of total subscription revenue increased from 17% in the year ended December 31, 2020 to 21% in the year ended December 31, 2021. Maintenance and support as a percentage of total subscription revenue decreased from 19% in the year ended December 31, 2020 to 17% in the year ended December 31, 2021.

Additionally, subscription SaaS revenue increased by 51%, or $19.5 million in the year ended December 31, 2021 compared to the year ended December 31, 2020. The increase in subscription SaaS revenue overall, and as a percentage of total subscription revenue, was primarily driven by the increased adoption of our SaaS solutions, which resulted in greater deferral of revenue from subscriptions entered into or renewed in the year ended December 31, 2021 compared to the year ended December 31, 2020. As our business moves increasingly to SaaS, our investments have followed, with a higher percentage of investment shifting to SaaS as well as maintenance and support of our software. We expect subscription SaaS and maintenance and support to continue to increase as a percentage of total subscription revenue in future periods as adoption of our SaaS solutions increases, as well as to reflect additional value ascribed to our software maintenance and support obligations, resulting in greater deferral of revenue in the period in which the subscription is contracted.

Change in term-based subscription duration. The following table sets forth the components of subscription term-based licenses expressed as a percentage of total subscription term-based license revenue:

	Year Ended December 31,		Change
	2021	2020	%
Multi-year subscription term-based licenses	64 %	60 %	4 %
1-year subscription term-based licenses	36	40	(4)
Total subscription term-based licenses	100 %	100 %	

Multi-year subscription term-based license revenue as a percentage of total subscription term-based license revenue increased from 60% in the year ended December 31, 2020 to 64% in the year ended December 31, 2021. This resulted in more upfront revenue recognition from multi-year subscriptions entered into or renewed during the year ended December 31, 2021 as compared to the year ended December 31, 2020, as customers elected longer contract durations in response to the strengthening economic outlook and easing of COVID-19 restrictions during the year ended December 31, 2021. There is no guarantee that our customers will continue electing contracts with longer durations in future periods even if economic conditions continue to improve.

Cost of Revenue

	Year Ended December 31,		Change	
	2021	2020	$	%
	(dollars in thousands)			
Cost of revenue:				
Subscription (exclusive of amortization shown below)	$ 43,515	$ 30,797	$ 12,718	41 %
Professional services and other (exclusive of amortization shown below)	24,420	17,145	7,275	42
Amortization expense	26,947	20,269	6,678	33
Total cost of revenue	$ 94,882	$ 68,211	$ 26,671	39 %

Subscription cost of revenue increased by $12.7 million, or 41%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. $4.1 million of the increase was primarily attributable to an increase in headcount to support the growth of our subscription SaaS offerings and ongoing maintenance for our expanding customer base. $7.1 million of the increase was attributable to an increase in cloud-based hosting and management costs largely associated with the increased adoption of our solutions. $1.1 million of the increase was attributable to an increase in stock-based compensation.

Professional services and other cost of revenue increased by $7.3 million, or 42%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. $5.7 million of the increase was primarily attributable to an increase in headcount and an increase in partner-related costs to support the growth in our business. $1.3 million of the increase was attributable to an increase in stock-based compensation.

Amortization expense increased by $6.7 million, or 33%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. The year-over-year increase was attributable primarily to increases in the amortization of developed technology resulting from our acquisitions in 2020 and 2021 of $3.7 million for the year ended December 31, 2021 as compared to the year ended December 31, 2020. See further discussion of these acquisitions in Note 7 of our condensed consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K. The remaining increase in amortization expense was primarily related to an increase in the amortization of our capitalized software of $3.3 million for the year ended December 31, 2021 as compared to the year ended December 31, 2020. The increase in capitalized software was driven by an increase in employee costs capitalized as software development costs as a result of our ongoing investment in developing our SaaS services.

Operating Expenses

	Year Ended December 31,		Change	
	2021	2020	$	%
	(dollars in thousands)			
Sales and marketing	$ 117,459	$ 88,910	$ 28,549	32 %
Research and development	78,512	48,934	29,578	60
General and administrative	71,581	47,198	24,383	52
Depreciation and amortization	17,437	16,997	440	3
Gain on asset disposition	(1,397)	—	(1,397)	N/M
Total operating expenses	$ 283,592	$ 202,039	$ 81,553	40 %

Sales and Marketing. Sales and marketing expenses increased by $28.5 million, or 32%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. $11.8 million of the increase was primarily attributable to an increase in headcount related to the expansion of our sales force and our marketing department. $10.5 million of the increase was attributable to an increase in stock-based compensation expense. The increase in stock-based compensation expense was primarily related to equity awards granted in 2021 as well as expense recognized for the options and restricted stock units subject to performance and market conditions determined to be probable of vesting in the second quarter of 2021 (“market-based options” and “market-based PSUs”), as further described in Note 12 of our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K. Additionally, promotional and partner and consulting expenses increased by $6.5 million primarily due to additional spend around branding and awareness campaigns and the live Identiverse conference held in the second quarter of 2021.

Research and Development. Research and development expenses increased by $29.6 million, or 60%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. $15.8 million was compensation related and primarily the result of an increase in headcount to enhance and expand our solutions. $15.4 million of the increase was attributable to an increase in stock-based compensation expense primarily related to the conversion of previously outstanding LTIP awards into time-based vesting RSUs in the first quarter of 2021, along with expense recognized for market-based PSUs and equity awards granted in 2021. Partner and consulting costs increased $3.8 million primarily to support the design and growth of our SaaS offerings. The increase in research and development expense was offset by an increase of $7.1 million related to employee costs that were capitalized as software development costs in the year ended December 31, 2021 as compared to December 31, 2020. $1.5 million of the increase was primarily due to an increase in cloud-based hosting costs largely associated with the development and configuration of our cloud-based solutions.

General and Administrative. General and administrative expenses increased by $24.4 million, or 52%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. $10.9 million of the increase was attributable to an increase in stock-based compensation expense primarily related to market-based PSUs and options, and equity awards granted in 2021. $7.5 million of the increase was primarily attributable to an increase in headcount to support growth in our business. Additionally, we incurred $1.6 million in connection with the termination of a government grant program as a result of the merger of two international subsidiaries, and consulting costs increased by $1.0 million, primarily due to expenses incurred related to strategic planning. The remaining increase was primarily due to general operating costs incurred to support growth in our business.

Depreciation and Amortization. Depreciation and amortization expense remained substantially the same during the year ended December 31, 2021 compared to the year ended December 31, 2020.

Gain on Asset Disposition. In December 2021, the Company sold certain assets and liabilities associated with the Identiverse conference, the industry leading annual identity conference founded by Ping Identity, as further described in Note 7 of our consolidated financial statements inluced in Part II, Item 8 of this Annual Report on Form 10-K. The sale resulted in a gain on asset disposition of $1.4 million during the year ended December 31, 2021.

Other Income (Expense)

	Year Ended December 31, 2021	Year Ended December 31, 2020	Change $	Change %
	(dollars in thousands)			
Interest expense	$ (3,010)	$ (2,433)	$ (577)	24 %
Loss on extinguishment of debt	(153)	—	(153)	N/M
Other income (expense), net	(1,148)	2,947	(4,095)	(139)
Total other income (expense)	$ (4,311)	$ 514	$ (4,825)	(939)%

Interest Expense. Interest expense increased by $0.6 million, or 24%, for the year ended December 31, 2021 compared to the year ended December 31, 2020. The increase was attributable primarily to the new credit agreement entered into in November 2021 as described in Note 9 of our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K. Under the new credit agreement, we have a $300 million term loan and a revolving credit facility with a total borrowing capacity of $150 million. The new $300 million term loan drove the period-over-period increase in the weighted average interest rate, from 1.8% for the year ended December 31, 2020 to 2.9% for the year ended December 31, 2021.

Loss on Extinguishment of Debt. During the year ended December 31, 2021, we recorded a loss on extinguishment of debt of $0.2 million as a result of the refinancing of our debt in November 2021. There was no similar loss during the year ended December 31, 2020.

Other Income (Expense), Net. Other income (expense), net decreased by $4.1 million from other income of $2.9 million in the year ended December 31, 2020 to other expense of $1.1 million in the year ended December 31, 2021. The decrease was attributable primarily to a change in the amount of foreign currency gains and losses, from a gain of $2.7 million in the year ended December 31, 2020 compared to a loss of $1.2 million in the year ended December 31, 2021.

Benefit (Provision) for Income Taxes

	Year Ended December 31, 2021	Year Ended December 31, 2020	Change $	Change %
	(dollars in thousands)			
Benefit for income taxes	$ 18,945	$ 14,256	$ 4,689	33 %

Our benefit for income taxes was $18.9 million and $14.3 million for the year ended December 31, 2021 and 2020, respectively. The increase in our benefit for income taxes in 2021 compared to 2020 was primarily driven by a larger pre-tax loss in 2021 as compared to 2020, the release of a foreign valuation allowance, and an increase in R&D and other credits recorded in the year ended December 31, 2021. The increase in tax benefit for the year ended December 31, 2021 as compared to the year ended December 31, 2020 was partially offset by a valuation allowance recorded against our U.S. deferred tax assets during the first quarter of 2021.

Liquidity and Capital Resources

General

As of December 31, 2021, our principal sources of liquidity were cash and cash equivalents totaling $220.6 million, which were held for working capital purposes. As of December 31, 2021, our cash equivalents were comprised of money market funds. During the years ended December 31, 2021 and 2020, our positive cash flows from operations have enabled us to make continued investments in supporting the growth of our business. We expect that our operating cash flows, in addition to our cash and cash equivalents, will enable us to continue to make such investments in the future. We expect our operating cash requirements to increase in the near future as we continue to invest in key initiatives to drive the Company’s growth toward the cloud.

However, we expect our long-term operating cash flows to improve as we increase our operational efficiency and realize benefits from cash investments.

We have financed our operations primarily through cash received from operations and proceeds from our debt and equity financings. We believe our existing cash and cash equivalents, our 2021 Credit Facilities and cash provided by sales of our solutions and services will be sufficient to meet our working capital and capital expenditure needs for at least the next 12 months. Our future capital requirements will depend on several factors, including but not limited to our obligation to repay any amounts outstanding under our 2021 Credit Agreement, our subscription growth rate, subscription renewal activity, billing frequency, the timing and extent of spending to support development efforts, the expansion of sales and marketing activities, the introduction of new and enhanced solutions, the continuing market adoption of our platform, and the continuing effects of the COVID-19 pandemic, including potential reductions in revenue and delays in payments from our customers and partners. In the future, we may enter into arrangements to acquire or invest in complementary businesses, services and technologies, including intellectual property rights.

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 or generate cash flows necessary to expand our operations and invest in new technologies, this could reduce our ability to compete successfully and harm our results of operations.

A majority of our customers pay in advance for annual subscriptions, a portion of which is recorded as deferred revenue. Deferred revenue consists of the unearned portion of billed fees for our subscriptions, which is later recognized as revenue in accordance with our revenue recognition policy. As of December 31, 2021, we had deferred revenue of $77.5 million, of which $72.0 million was recorded as a current liability and is expected to be recognized as revenue in the next 12 months, provided all other revenue recognition criteria have been met.

Senior Secured Credit Facilities

On November 23, 2021, in connection with the refinancing of our 2019 Credit Facilities, we entered into the 2021 Credit Agreement providing for (a) a new term loan B facility consisting of an aggregate principal amount of $300 million (the “2021 Term Loan Facility” and the loans thereunder, the “2021 Term Loans”) and (b) a new revolving line of credit facility in an aggregate principal amount of $150 million (the “2021 Revolving Facility” and together with the 2021 Term Loan Facility, the “2021 Credit Facilities).

The 2021 Term Loans mature on November 23, 2028. Amortization payments on the 2021 Term Loans are equal to 0.25% of the initial aggregate principal amount of the 2021 Term Loans, payable at the end of each fiscal quarter, commencing with the fiscal quarter ending June 30, 2022. The 2021 Revolving Facility matures on November 23, 2026. There were no amounts drawn under the 2021 Revolving Facility as of December 31, 2021.

Under the terms of the 2021 Credit Agreement, Holdings and its restricted subsidiaries are required to maintain a total net leverage ratio (as calculated pursuant to the 2021 Credit Agreement) (i) commencing with the fiscal quarter ending June 30, 2022 and through and including the fiscal quarter ending March 31, 2024, of no more than 5.00:1.00 and (ii) commencing with the fiscal quarter ending June 30, 2024 and each fiscal quarter thereafter, of no more than 4.00:1.00. As of December 31, 2021, we were in compliance with all financial covenants.

See additional discussion of the 2021 Credit Facilities in in Note 9 of our condensed consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Cash Flows

The following table presents a summary of our consolidated cash flows from operating, investing and financing activities for the periods indicated.

	Year Ended December 31, 2021	Year Ended December 31, 2020
	(in thousands)	
Net cash provided by operating activities	$ 41,656	$ 22,375
Net cash used in investing activities	(103,117)	(48,320)
Net cash provided by (used in) financing activities	135,504	103,009
Effect of exchange rate changes on cash and cash equivalents and restricted cash	347	1,049
Net increase (decrease) in cash and cash equivalents and restricted cash	$ 74,390	$ 78,113
Cash and cash equivalents and restricted cash at beginning of period	146,499	68,386
Cash and cash equivalents and restricted cash at end of period	$ 220,889	$ 146,499

Operating Activities

Our largest source of operating cash is cash collections from our customers for subscriptions and professional services. Our primary uses of cash from operating activities are for employee-related expenditures, marketing expenses and third-party hosting costs.

For the year ended December 31, 2021, net cash provided by operating activities was $41.7 million, reflecting our net loss of $64.4 million, adjusted for non-cash charges of $90.1 million and net cash inflows of $16.0 million provided by changes in our operating assets and liabilities. Non-cash charges primarily consisted of stock-based compensation, amortization of deferred commissions, depreciation and amortization of property and equipment and intangible assets and deferred income taxes. The primary drivers of the changes in operating assets and liabilities related to a $12.4 million increase in accrued compensation primarily due to an increase in incentive compensation in the current year, a $24.8 million increase in deferred revenue driven by the timing of revenue recognition, a decrease of $2.7 million in contract assets due to the issuance of invoices and the timing of revenue recognition, and an increase of $2.4 million in accrued expenses and other liabilities due to the timing of cash disbursements. These were partially offset by a $24.7 million increase in deferred commissions and a $2.7 million increase in other assets primarily due to the timing of payment of long-term prepaid balances.

For the year ended December 31, 2020, net cash provided by operating activities was $22.4 million, reflecting our net loss of $11.9 million, adjusted for non-cash charges of $47.4 million and net cash outflows of $13.1 million provided by changes in our operating assets and liabilities. Non-cash charges primarily consisted of stock-based compensation, amortization of deferred commissions, depreciation and amortization of property and equipment and intangible assets and deferred income taxes. The primary drivers of the changes in operating assets and liabilities related to an $14.7 million increase in accounts receivable due to the timing of receipt of payment from our customers, an increase of $10.3 million in deferred commissions due to an increase in the capitalization of commissions, as well as a $3.4 million decrease in accrued compensation and a $3.3 million increase in prepaid expenses due to the timing of cash disbursements. These increases were partially offset by a $13.5 million decrease in contract assets due to the issuance of invoices and the timing of revenue recognition and a $4.9 million increase in deferred revenue due to an increase in deals signed in 2020 which were billed up front.

Investing Activities

Net cash used in investing activities was $103.1 million and $48.3 million during the years ended December 31, 2021 and 2020, respectively, a increase of $54.8 million. The net increase is primarily attributable to the acquisitions of SecuredTouch and Singular Key in 2021 for a total of $80.0 million in cash as compared to the acquisitions of ShoCard and Symphonic in 2020 for a total of $32.5 million. The remaining increase was primarily related to an increase in the capitalization of internal-use software costs of $5.7 million and an increase in purchases of property and equipment of $1.6 million.

Financing Activities

Net cash provided by financing activities was $135.5 million during the year ended December 31, 2021 whereas net cash provided by financing activities was $103.0 million during the year ended December 31, 2020. During the first nine months of 2021, we repaid $110.0 million and drew down $80.0 million on our 2019 Revolving Credit Facility (as defined in Note 9 of our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K). In November 2021, we refinanced our previously outstanding debt and repaid the outstanding $120.0 million on our 2019 Revolving Credit Facility. In connection with the execution of our 2021 Credit Facilities, we received proceeds of $300.0 million and paid $8.1 million in debt issuance costs. Additionally, during the year ended December 31, 2021, proceeds received from option exercises decreased by $7.2 million and payments for tax withholding on equity awards increased by $4.1 million. Conversely, during the year ended December 31, 2020, our primary cash inflows related to the draw down on our 2019 Revolving Credit Facility of $97.8 million that occurred in March 2020.

Indemnification Agreements

In the ordinary course of business, we enter into agreements of varying scope and terms pursuant to which we agree to indemnify customers, vendors, lessors, business partners and other parties with respect to certain matters, including, but not limited to, losses arising out of the breach of such agreements, services to be provided by us or from intellectual property infringement claims made by third parties. In addition, we previously entered into indemnification agreements with our directors and certain officers and employees that require us, among other things, to indemnify them against certain liabilities that may arise by reason of their status or service as directors, officers or employees. No demands have been made upon us to provide indemnification under such agreements and there are no claims that we are aware of that could have a material effect on our consolidated balance sheets, consolidated statements of operations and comprehensive loss, or consolidated statements of cash flows.

Critical Accounting Estimates

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with GAAP. The preparation of these financial statements requires management to make estimates that affect the reported amounts of assets and liabilities, revenue and expenses and related disclosures of contingent assets and liabilities at the date of our financial statements. Actual results may differ from these estimates under different assumptions or conditions, impacting our reported results of operations and financial condition.

The estimates used by management are based on historical experience and other factors, which are believed to be reasonable under the circumstances. The accounting estimates which we believe are the most critical to aid in fully understanding and evaluating our reported financial results are described below. Refer to “Note 2 — Summary of Significant Accounting Policies” to the consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K for more detailed information regarding our significant accounting policies.

Acquisitions and Identifiable Intangible Assets

We account for acquired businesses using the acquisition method of accounting, which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition at their respective fair values. The fair value of identifiable intangible assets is based on significant judgments and estimates made by management. We typically engage third-party valuation appraisal firms to assist in determining the fair values of the assets acquired. Such valuations require us to make significant estimates and assumptions. These estimates and assumptions are based on historical experience and information obtained from the management of the acquired companies, and also include, but are not limited to, future expected cash flows earned from the product-related technology and discount rates applied in determining the present value of those cash flows. Unanticipated events and circumstances may occur that could affect the accuracy or validity of such assumptions, estimates or actual results.

Stock Options and Restricted Stock Units

We have granted certain awards to our employees, including stock options and restricted stock units, that are subject to market and performance conditions for which we are required to assess the probability of vesting. These awards will vest following both (i) an IPO and registration of shares of common stock of Ping Identity Holding Corp. and (ii) Vista realizing a cash return on its investment in the Company equaling or exceeding $1.491 billion. At each reporting period, we estimated the probability of these awards meeting the conditions noted above based on historical experience, market conditions contributing to forecasted future share prices of our common stock and information obtained from management and Vista regarding the sale of shares.

When the vesting of the awards became probable during the second quarter of 2021, the Company began to recognize stock-based compensation expense for the options and restricted stock units subject to market and performance conditions on a graded vesting basis over the term of the award.

The assumptions used in determining when the probability threshold is met reflect our best estimates but involve uncertainties related to market and other conditions, many of which are outside our control. As the determination of probability has a direct impact on the pattern of recognition of compensation expense associated with these awards, changes in our assumptions may affect the amount of compensation expense we recognize in a given period.

Recent Accounting Pronouncements

For a description of our recently adopted accounting pronouncements and recently issued accounting standards not yet adopted, see “Note 2 — Summary of Significant Accounting Policies — Recent Accounting Pronouncements” to our consolidated financial statements included in Part II, Item 8 of this Annual Report on Form 10-K.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. As we have operations in the United States and internationally, our market risk exposure is primarily a result of exposure due to potential changes in inflation or interest rates. We do not hold financial instruments for trading purposes.

Foreign Currency Exchange Risk

Our revenues and expenses are primarily denominated in U.S. dollars. For the years ended 2021 and 2020, we recorded a loss of $1.2 million and a gain of $2.7 million on foreign exchange transactions, respectively. To date, we have not entered into any hedging arrangements with respect to foreign currency risk or other derivative financial instruments, but we may do so in the future if our exposure to foreign currency should become more significant. For business conducted outside of the United States, we may have both revenue and costs incurred in the local currency of the subsidiary, creating a partial natural hedge. Changes to exchange rates therefore have not had a significant impact on the business to date. However, we will continue to reassess our foreign exchange exposure as we continue to grow our business globally. During the years ended December 31, 2021 and 2020, 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.

Interest Rate Risk

Our primary market risk exposure is changing SOFR-based interest rates. Interest rate risk is highly sensitive due to many factors, including U.S. monetary and tax policies, U.S. and international economic factors and other factors beyond our control.

The 2021 Term Loans bear interest at Term SOFR (as defined in the 2021 Credit Agreement and subject to a floor of 0.50%), plus the applicable SOFR Adjustment (as defined in the 2021 Credit Agreement), plus an applicable margin of 3.75%, or a base rate plus an applicable margin of 2.75%.

Amounts drawn under the 2021 Revolving Facility denominated in U.S. dollars will bear interest at Term SOFR, subject to a floor of 0.00%, plus the applicable SOFR Adjustment, plus an applicable margin ranging from 1.25% to 2.00%, depending on the senior secured net leverage ratio (as calculated pursuant to the 2021 Credit Agreement) or (ii) a base rate plus an applicable margin ranging from 0.25% to 1.00%, depending on the senior secured net leverage ratio. Amounts drawn under the 2021 Revolving Facility denominated in available non-U.S. dollar currencies will bear interest at the applicable rate for such non-U.S. dollar currencies plus the applicable rate adjustment (if any) plus an applicable margin ranging from 1.25% to 2.00%, depending on the senior secured net leverage ratio. There were no amounts drawn under the 2021 Revolving Facility as of December 31, 2021.

At December 31, 2021, we had total outstanding debt of $300.0 million under our 2021 Term Loan Facility. Based on the amounts outstanding, a 100-basis point increase or decrease in market interest rates over a twelve-month period would result in a change to interest expense of $3.0 million.

Inflation Risk

Based on our analysis of the periods presented, we believe that inflation has not had a material effect on our operating results. There can be no assurance that future inflation will not have an adverse impact on our operating results and financial condition.

Item 8. Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Ping Identity Holding Corp.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Ping Identity Holding Corp. and its subsidiaries (the "Company") as of December 31, 2021 and 2020, and the related consolidated statements of operations, of comprehensive loss, of stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2020.

Basis for Opinions

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

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Revenue Recognition - Identifying and Evaluating Terms and Conditions in Subscription Contracts for Term-Based Licenses that Impact Subscription Revenue Recognition

As described in Notes 2 and 3 to the consolidated financial statements, management applies judgment in identifying and evaluating terms and conditions in contracts which may impact revenue recognition. To determine the appropriate amount of revenue to be recognized as the Company fulfills its obligations under each of its agreements, management performs the following steps: 1) identification of the contract with a customer; 2) determination of whether the goods or services in a contract comprise performance obligations; 3) measurement of the transaction price; 4) allocation of the transaction price to separate performance obligations; and 5) recognition of revenue when or as the Company satisfies each performance obligation. The Company's subscriptions for solutions deployed on-premise within the customer's technology infrastructure are comprised of a term-based license and an obligation to provide maintenance and support, where the term-based license and the maintenance and support constitute separate performance obligations. For the year ended December 31, 2021, the Company's subscription term-based license revenue was $172.5 million.

The principal considerations for our determination that performing procedures relating to revenue recognition - identifying and evaluating terms and conditions in subscription contracts for term-based licenses that impact subscription revenue recognition is a critical audit matter are the significant judgment by management in identifying and evaluating terms and conditions in subscription term-based license contracts that impact revenue recognition. This in turn led to significant auditor effort and subjectivity in performing procedures to evaluate whether terms and conditions in subscription term-based license contracts were appropriately identified and evaluated by management and the impact on the timing and measurement of revenue recognized.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including controls related to the identification and evaluation of terms and conditions in subscription term-based license contracts that impact revenue recognition. These procedures also included, among others (i) testing the completeness and accuracy of management's identification and evaluation of the specific terms and conditions in subscription term-based license contracts with customers by examining revenue contracts on a test basis, and (ii) testing management's process for identifying and evaluating the terms and conditions in contracts, including management's determination of the impact of those terms and conditions on the timing and measurement of revenue recognition.

/s/ PricewaterhouseCoopers LLP
Denver, Colorado
February 24, 2022

We have served as the Company's auditor since 2016.

PING IDENTITY HOLDING CORP.
CONSOLIDATED BALANCE SHEETS
(In thousands, except share amounts)

	December 31, 2021	December 31, 2020
Assets		
Current assets:		
Cash and cash equivalents	$ 220,607	$ 145,733
Accounts receivable, net of allowances of $610 and $828 at December 31, 2021 and December 31, 2020, respectively	82,969	82,335
Contract assets, current (net of allowance)	67,540	62,503
Deferred commissions, current	10,460	6,604
Prepaid expenses	16,654	17,608
Other current assets	2,914	1,940
Total current assets	401,144	316,723
Noncurrent assets:		
Property and equipment, net	9,396	9,446
Goodwill	528,548	441,150
Intangible assets, net	190,077	180,422
Contract assets, noncurrent (net of allowance)	3,457	11,288
Deferred commissions, noncurrent	19,380	9,325
Deferred income taxes, net	6,201	3,962
Operating lease right-of-use assets	13,709	15,619
Other noncurrent assets	6,121	2,516
Total noncurrent assets	776,889	673,728
Total assets	$ 1,178,033	$ 990,451
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 4,528	$ 2,795
Accrued expenses and other current liabilities	10,305	7,339
Accrued compensation	29,258	17,170
Deferred revenue, current	71,957	49,203
Operating lease liabilities, current	4,330	3,979
Current portion of long-term debt (net of issuance costs)	1,132	—
Total current liabilities	121,510	80,486
Noncurrent liabilities:		
Deferred revenue, noncurrent	5,584	3,195
Long-term debt (net of issuance costs)	291,154	149,014
Deferred income taxes, net	4,240	17,867
Operating lease liabilities, noncurrent	14,140	17,213
Other liabilities, noncurrent	—	1,566
Total noncurrent liabilities	315,118	188,855
Total liabilities	436,628	269,341
Commitments and contingencies (Note 15)		
Stockholders' equity:		
Preferred stock; $0.001 par value; 50,000,000 shares authorized at December 31, 2021 and December 31, 2020; no shares issued or outstanding at December 31, 2021 or December 31, 2020	—	—
Common stock; $0.001 par value; 500,000,000 shares authorized at December 31, 2021 and December 31, 2020; 83,754,449 and 81,163,896 shares issued and outstanding at December 31, 2021 and December 31, 2020, respectively	84	81
Additional paid-in capital	824,455	739,051
Accumulated other comprehensive income	652	1,373
Accumulated deficit	(83,786)	(19,395)
Total stockholders' equity	741,405	721,110
Total liabilities and stockholders' equity	$ 1,178,033	$ 990,451

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

PING IDENTITY HOLDING CORP.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Year Ended December 31, 2021	2020	2019
Revenue:			
Subscription	$ 279,294	$ 224,131	$ 225,345
Professional services and other	20,155	19,458	17,553
Total revenue	299,449	243,589	242,898
Cost of revenue:			
Subscription (exclusive of amortization shown below)	43,515	30,797	24,044
Professional services and other (exclusive of amortization shown below)	24,420	17,145	15,322
Amortization expense	26,947	20,269	16,338
Total cost of revenue	94,882	68,211	55,704
Gross profit	204,567	175,378	187,194
Operating expenses:			
Sales and marketing	117,459	88,910	78,889
Research and development	78,512	48,934	46,016
General and administrative	71,581	47,198	38,293
Depreciation and amortization	17,437	16,997	16,639
Gain on asset disposition	(1,397)	—	—
Total operating expenses	283,592	202,039	179,837
Income (loss) from operations	(79,025)	(26,661)	7,357
Other income (expense):			
Interest expense	(3,010)	(2,433)	(12,914)
Loss on extinguishment of debt	(153)	—	(4,532)
Other income (expense), net	(1,148)	2,947	363
Total other income (expense)	(4,311)	514	(17,083)
Loss before income taxes	(83,336)	(26,147)	(9,726)
Benefit for income taxes	18,945	14,256	8,222
Net loss	$ (64,391)	$ (11,891)	$ (1,504)
Net loss per share:			
Basic and diluted	$ (0.78)	$ (0.15)	$ (0.02)
Weighted-average shares used in computing net loss per share:			
Basic and diluted	82,302	80,430	68,906

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

PING IDENTITY HOLDING CORP.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(In thousands)

	Year Ended December 31,		
	2021	2020	2019
Net loss	$ (64,391)	$ (11,891)	$ (1,504)
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(721)	1,772	388
Total other comprehensive income (loss)	(721)	1,772	388
Comprehensive loss	$ (65,112)	$ (10,119)	$ (1,116)

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

PING IDENTITY HOLDING CORP.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Accumulated Deficit)	Total Stockholders' Equity
	Shares	Amount				
Balances at December 31, 2018	65,000,816	$ 65	$ 515,979	$ (787)	$ (6,152)	$ 509,105
Net loss	—	—	—	—	(1,504)	(1,504)
Issuance of common stock upon initial public offering, net of underwriting discounts and commissions and offering costs	14,375,000	15	194,564			194,579
Stock-based compensation	—	—	6,332	—	—	6,332
Exercise of stock options	199,522	—	1,571	—	—	1,571
Vesting of restricted stock	57,162	—	—	—	—	—
Foreign currency translation adjustments, net of tax	—	—	—	388	—	388
Balances at December 31, 2019	79,632,500	80	718,446	(399)	(7,656)	710,471
Cumulative-effect adjustment for adoption of ASU 2016-13	—	—	—	—	152	152
Net loss	—	—	—	—	(11,891)	(11,891)
Stock-based compensation	—	—	14,701	—	—	14,701
Exercise of stock options, net of tax withholding	1,259,194	1	8,688	—	—	8,689
Vesting of restricted stock, net of tax withholding	272,202	—	(2,784)	—	—	(2,784)
Foreign currency translation adjustments, net of tax	—	—	—	1,772	—	1,772
Balances at December 31, 2020	81,163,896	81	739,051	1,373	(19,395)	721,110
Net loss	—	—	—	—	(64,391)	(64,391)
Stock-based compensation	—	—	54,278	—	—	54,278
Reclassification of liability-classified awards upon settlement	—	—	3,424	—	—	3,424
Exercise of stock options, net of tax withholding	391,796	1	3,311	—	—	3,312
Vesting of restricted stock, net of tax withholding	937,872	1	(8,479)	—	—	(8,478)
Shares issued related to business combinations	1,260,885	1	32,870	—	—	32,871
Foreign currency translation adjustments, net of tax	—	—	—	(721)	—	(721)
Balances at December 31, 2021	83,754,449	$ 84	$ 824,455	$ 652	$ (83,786)	$ 741,405

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

PING IDENTITY HOLDING CORP.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31, 2021	2020	2019
Cash flows from operating activities			
Net loss	$ (64,391)	$ (11,891)	$ (1,504)
Adjustments to reconcile net loss to net cash provided by operating activities:			
Loss on extinguishment of debt	153	—	4,532
Depreciation and amortization	44,384	37,266	32,977
Stock-based compensation expense	55,800	16,624	6,332
Amortization of deferred commissions	10,823	8,045	6,423
Amortization of deferred debt issuance costs	357	250	679
Operating leases, net	(812)	(258)	—
Deferred taxes	(19,806)	(14,888)	(9,379)
Gain on asset disposition	(1,397)	—	—
Other	507	376	166
Changes in operating assets and liabilities:			
Accounts receivable	(922)	(14,666)	(18,046)
Contract assets	2,702	13,518	(18,542)
Deferred commissions	(24,734)	(10,304)	(9,060)
Prepaid expenses and other current assets	556	(3,331)	(6,586)
Other assets	(2,695)	(664)	373
Accounts payable	1,538	1,323	(624)
Accrued compensation	12,417	(3,412)	(404)
Accrued expenses and other	2,370	(504)	6,318
Deferred revenue	24,806	4,891	12,140
Net cash provided by operating activities	41,656	22,375	5,795
Cash flows from investing activities			
Payments for business acquisitions, net of cash acquired	(79,967)	(32,470)	—
Purchases of property and equipment and other	(4,153)	(2,595)	(8,696)
Capitalized software development costs	(18,997)	(13,255)	(10,460)
Other investing activities	—	—	(600)
Net cash used in investing activities	(103,117)	(48,320)	(19,756)
Cash flows from financing activities			
Payment of acquisition-related holdbacks	(993)	(424)	(1,136)
Proceeds from initial public offering, net of underwriting discounts and commissions	—	—	200,531
Payment of offering costs	—	(295)	(5,164)
Proceeds from stock option exercises	3,158	10,404	1,571
Payment for tax withholding on equity awards	(8,576)	(4,499)	—
Proceeds from long-term debt	380,000	97,823	52,177
Issuance costs of long-term debt	(8,085)	—	(1,249)
Payment of long-term debt	(230,000)	—	(248,750)
Net cash provided by (used in) financing activities	135,504	103,009	(2,020)
Effect of exchange rates on cash and cash equivalents and restricted cash	347	1,049	224
Net increase (decrease) in cash and cash equivalents and restricted cash	74,390	78,113	(15,757)
Cash and cash equivalents and restricted cash			
Beginning of period	146,499	68,386	84,143
End of period	$ 220,889	$ 146,499	$ 68,386
Supplemental disclosures of cash flow information:			
Cash paid for interest	$ 2,486	$ 2,263	$ 12,169
Cash paid for taxes	417	1,153	1,073
Noncash activities:			
Purchases of property and equipment, accrued but not yet paid	$ 344	$ 252	$ 218
Reclassification of liability-classified awards upon settlement	3,424	—	—
Acquisition-related accruals	—	1,280	—
Identiverse disposition receivable	1,500	—	—
Offering costs, accrued but not yet paid	—	—	295
Lease liabilities arising from right-of-use assets	1,254	3,733	—
Fair value of common stock issued as consideration for business combination	32,871	—	—
Reconciliation of cash and cash equivalents and restricted cash within the consolidated balance sheets to the amounts shown in the statements of cash flows above:			
Cash and cash equivalents	$ 220,607	$ 145,733	$ 67,637
Restricted cash included in other noncurrent assets	282	766	749
Total cash and cash equivalents and restricted cash	$ 220,889	$ 146,499	$ 68,386

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

PING IDENTITY HOLDING CORP.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Overview and Basis of Presentation

Organization and Description of Business

Ping Identity Holding Corp. and its wholly owned subsidiaries, referred to herein as the "Company," is headquartered in Denver, Colorado with international locations principally in Canada, the United Kingdom, France, Australia, Israel and India. The Company, doing business as Ping Identity Corporation ("Ping Identity"), provides customers, employees and partners with secure access to any service, application or application programming interface ("API"), while also managing identity and profile data at scale.

Basis of Presentation and Principles of Consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All intercompany accounts and transactions have been eliminated. The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles ("GAAP"). All amounts are reported in U.S. dollars. Certain amounts for the years ended December 31, 2020 and 2019 have been reclassified to conform with current presentation.

Initial Public Offering

On September 23, 2019, the Company closed its initial public offering ("IPO") through which it issued and sold 12,500,000 shares of common stock at a price per share of $15.00. Additionally, the Company registered 1,875,000 shares of common stock in connection with the underwriters' overallotment option to purchase additional shares on the same terms and conditions. The underwriters' overallotment option was exercised in full and closed on October 22, 2019.

In connection with the IPO, the Company raised $194.6 million in net proceeds, after deducting underwriting discounts and commissions of $15.1 million and offering expenses of $5.9 million. On September 23, 2019, the Company used the net proceeds from the IPO to repay $170.3 million of its outstanding debt and after the closing of the underwriters' overallotment option to purchase additional shares, the Company repaid an additional $26.1 million of its outstanding debt, as discussed in Note 9.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Significant estimates and assumptions reflected in these consolidated financial statements include, but are not limited to, determining the fair values of assets acquired and liabilities assumed in business combinations, valuing stock option awards and assessing the probability of the awards meeting vesting conditions, recognizing revenue, establishing allowances for expected credit losses based on expected credit losses and the collectability of financial assets, determining useful lives for finite-lived assets, assessing the recoverability of long-lived assets, determining the value of right-of-use assets and lease liabilities, accounting for income taxes and related valuation allowances against deferred tax assets, determining the amortization period for deferred commissions and assessing the accounting treatment for commitments and contingencies. Management evaluates these estimates and assumptions on an ongoing basis and makes estimates based on historical experience and various other assumptions that are believed to be reasonable. Actual results may differ from these estimates due to risks and uncertainties, including the continued uncertainty surrounding rapidly changing market and economic conditions due to the novel Coronavirus Disease 2019 (“COVID-19”) pandemic.

2. Summary of Significant Accounting Policies

Stock Split

On September 5, 2019, the Company effected a 170-for-1 stock split of its issued and outstanding shares of common stock and made comparable and equitable adjustments to its equity awards in accordance with the terms of the awards. The par value of the common and preferred stock was not adjusted as a result of the stock split. Accordingly, all share and per share amounts for the periods presented in the accompanying consolidated financial statements and notes thereto have been adjusted retrospectively, where applicable, to reflect this stock split. In connection with the stock split, the Company’s Board of Directors (the “Board”) and stockholders approved the Certificate of Amendment to the Second Amended and Restated Certificate of Incorporation to increase the number of authorized shares of common stock from 85,000,000 shares (after giving effect to the stock split) to 500,000,000 shares and to increase the number of authorized shares of preferred stock from 34,000,000 shares (after giving effect to the stock split) to 50,000,000 shares.

Segment and Geographic Information

The Company operates in a single operating segment. Operating segments are defined as components of an enterprise for which discrete financial information is available and is regularly reviewed by the chief operating decision maker in order to make decisions regarding resource allocation and performance assessment. The Company has determined that its chief operating decision maker is its Chief Executive Officer. The Company's chief operating decision maker reviews the Company's financial information on a consolidated basis for purposes of allocating resources and evaluating financial performance. Since the Company operates in one operating segment, all required financial segment information can be found in the consolidated financial statements.

Revenue by geographic region is based on the delivery address of the customer, and is summarized by geographic area as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
United States	$ 222,425	$ 179,665	$ 188,283
International	77,024	63,924	54,615
Total revenue	$ 299,449	$ 243,589	$ 242,898

Other than the United States, no other individual country exceeded 10% of total revenue for the years ended December 31, 2021, 2020 or 2019.

PING IDENTITY HOLDING CORP.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The Company's long-lived assets are composed of property and equipment, net and operating lease right-of-use assets, and are summarized by geographic area as follows:

	December 31, 2021	December 31, 2020
	(in thousands)	
United States	$ 16,123	$ 18,367
Israel	2,925	2,122
International	4,057	4,576
Total long-lived assets	$ 23,105	$ 25,065

Outside of the United States and Israel, no other individual country held greater than 10% of total long-lived assets at December 31, 2021 or 2020.

Foreign Currency

The reporting currency of the Company is the U.S. dollar. The functional currency of each subsidiary is the applicable local currency. For the subsidiary where the U.S. dollar is the functional currency, foreign currency denominated monetary assets and liabilities are remeasured into U.S. dollars at current exchange rates and foreign currency denominated nonmonetary assets and liabilities are remeasured into U.S. dollars at historical exchange rates. Transactions denominated in currencies other than the subsidiaries' functional currencies are recorded based on the exchange rates at the time such transactions arise. Resulting gains and losses are recorded in other income (expense), net in the consolidated statements of operations in the period of occurrence.

The Company's foreign subsidiaries are translated from the applicable functional currency to the U.S. dollar using the average exchange rates during the reporting period, while assets and liabilities are translated at the period-end exchange rates. Resulting gains or losses from translating foreign currency are included in accumulated other comprehensive income (loss).

Revenue Recognition

The Company recognizes revenue under Accounting Standards Codification Topic 606, *Revenue from Contracts with Customers* ("ASC 606"). Under ASC 606, the Company recognizes revenue when its customer obtains control of promised goods or services in an amount that reflects the consideration that the Company expects to receive in exchange for those goods or services. The Company applies judgment in identifying and evaluating terms and conditions in contracts which may impact revenue recognition. To determine the appropriate amount of revenue to be recognized as it fulfills its obligations under each of its agreements, the Company performs the following steps:

1. *Identification of the contract with a customer*

   The Company contracts with its customers through order forms, which in some cases are governed by master sales agreements. The Company determines that it has a contract with a customer when the order form has been approved, each party's rights regarding the products or services to be transferred can be identified, the payment terms for the products or services can be identified, the Company has determined the customer has the ability and intent to pay and the contract has commercial substance. The Company applies judgment in determining the customer's ability and intent to pay, which is based on a variety of factors, including the customer's historical payment experience or, in the case of a new customer, credit, reputation and financial or other information pertaining to the customer. At contract inception, the Company evaluates whether two or more contracts should be combined and accounted for as a single contract and whether the combined or single contract includes more than one performance obligation.

2. *Determination of whether the goods or services in a contract comprise performance obligations*

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

The Company sells its solutions through subscription-based contracts. The Company's subscriptions for solutions deployed on-premise within the customer's technology infrastructure are comprised of a term-based license and an obligation to provide maintenance and support, where the term-based license and the maintenance and support constitute separate performance obligations. The Company's SaaS subscriptions provide customers the right to access cloud-hosted software and support for the SaaS service, which the Company considers to be a single performance obligation. The Company also renews subscriptions for maintenance and support, which the Company considers to be a single performance obligation.

Professional services consist of consulting and training services. These services are distinct performance obligations from subscriptions and do not result in significant customization of the software.

3. *Measurement of the transaction price*

The Company determines the transaction price based on the consideration that the Company expects to receive in exchange for transferring the promised goods or services to the customer. This transaction price is exclusive of amounts collected on behalf of third parties, such as sales tax and value-added tax. The Company does not offer refunds, rebates or credits to customers in the normal course of business, so the impact of variable consideration has not been material.

In instances where the timing of revenue recognition differs from the timing of invoicing, the Company has determined that its contracts generally do not include a significant financing component. The primary purpose of the Company's invoicing terms is to provide customers with a simple and predictable way to purchase the Company's subscriptions, not to provide customers with financing.

4. *Allocation of the transaction price to separate performance obligations*

If the contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. For contracts that contain multiple performance obligations, the Company allocates the transaction price to each performance obligation based on each obligation's relative standalone selling price ("SSP").

The SSP is determined based on the prices at which the Company separately sells the product, assuming the majority of these fall within a pricing range. In instances where SSP is not directly observable, such as when the Company does not sell the software license separately, the Company determines the SSP using information that may include market conditions, cost estimates and other observable inputs that can require significant judgment. There is typically a range of standalone selling prices for individual products and services based on a stratification of those products and services by quantity and other circumstances. If one of the performance obligations is outside of the SSP range, the Company determines SSP to be the nearest endpoint of the range.

5. *Recognition of revenue when or as the Company satisfies each performance obligation*

Revenue is recognized at the time the related performance obligation is satisfied by transferring the promised product or service to the customer. The Company's software subscriptions include both upfront revenue recognition when the Company transfers control of the term-based license to the customer, as well as revenue recognized ratably over the contract period for maintenance and support based on the stand-ready nature of these subscription elements. Revenue for the Company's SaaS products is recognized ratably over the contract period as the Company satisfies the performance obligation.

Professional services revenue provided on a time and materials basis is recognized as these services are performed. Revenue from training services and sponsorship fees is recognized on the date the services are complete.

The Company generates sales directly through its sales team as well as through its channel partners. Where channel partners are involved, the Company has determined that it is the principal in these arrangements. Sales to channel partners are generally made at a discount, and revenues are recorded at the discounted price once the revenue recognition criteria above have been met. In certain instances, the Company pays referral fees to its partners, which the Company has determined to be commensurate with internal sales commissions and thus records these payments as sales commissions. Channel partners generally receive an order from an end customer prior to placing an order with the Company, and payment from channel partners is not contingent on the partner's collection from end customers.

Deferred Commissions

Sales commissions earned by the Company's internal and external sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions for new contracts and additional sales to existing customers are deferred and recorded in deferred commissions, current and noncurrent in the Company's consolidated balance sheets. Deferred commissions are amortized over the period of benefit, which the Company has determined to be generally four years. The Company determined the period of benefit by taking into consideration its customer contracts, its technology and other factors. Deferred commissions are amortized consistent with the pattern of revenue recognition for each performance obligation for contracts for which the commissions were earned. The Company includes amortization of deferred commissions in sales and marketing expense in the consolidated statements of operations. The Company periodically reviews the carrying amount of deferred commissions 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 an impairment of deferred commissions during the years ended December 31, 2021, 2020 and 2019.

Cash and Cash Equivalents

Cash consists of deposits with financial institutions whereas cash equivalents primarily consist of money market funds. The Company considers all highly liquid investments purchased with an original maturity of three months or less to be cash equivalents.

PING IDENTITY HOLDING CORP.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Accounts Receivable and Allowance for Expected Credit Losses

Accounts receivable represent amounts owed to the Company by its customers that are recorded at the invoiced amount. Effective January 1, 2020, the Company reports accounts receivable and contract assets net of an allowance for expected credit losses in accordance with Accounting Standards Codification Topic 326, *Financial Instruments – Credit Losses* ("ASC 326"), while prior period amounts continue to be reported in accordance with previously applicable GAAP. Under ASC 326, the allowance for expected credit losses is a valuation account that is deducted from the financial asset's amortized cost basis to present the net amount expected to be collected on contracts with customers. Accounts receivable and contract assets are written off when management believes non-collectability is confirmed and the corresponding charge is recorded in general and administrative expense in the accompanying consolidated statement of operations. Recoveries of financial assets previously written off shall be recorded when received against the provision for credit losses.

Management estimates the allowance balance using relevant available information, from internal and external sources, relating to past events, current conditions and reasonable and supportable forecasts over a financial asset's contractual term. The Company's historical credit loss experience provides the basis for the estimation of expected credit losses. Adjustments to historical loss information are made from qualitative and quantitative factors if economic conditions at the reporting date reflect stronger or weaker economic performance than the historical data implies based on management's expectations of economic conditions on certain indicators of the Company, industry and economy. Management reviews factors such as past collection experience, age of the accounts receivable balance, and macroeconomic conditions. As of December 31, 2021 and 2020, the Company evaluated these economic conditions and made adjustments to historical loss information for certain economic risk factors.

In developing its expected credit loss model, the Company evaluated financial assets with similar risk characteristics on a collective (pool) basis for their respective estimated and expected credit loss allowance. A financial asset will be measured individually only if it does not share similar risk characteristics with other financial assets. Due to the short-term nature of trade receivables, the estimated amount of accounts receivable that may not be collected is based on the aging of the accounts receivable balances and the financial condition of customers. Our monitoring activities include timely account reconciliation, dispute resolution, payment confirmation, consideration of each customer's financial condition and macroeconomic conditions. We apply a similar methodology towards our current and non-current contract asset balances. However, due to the inherent additional risk associated with a long-term receivable, an additional provision is applied toward contract asset balances that will diminish over time as the contract nears its expiration date.

Prior to the adoption of ASC 326, the Company's allowance for doubtful accounts was based on management judgments and estimates of the probable loss related to uncollectible accounts receivable considering a number of factors including collection trends, prevailing and anticipated economic conditions, and specific customer credit risk. The Company's allowance for doubtful accounts activity was historically not significant. Probable losses were recorded in general and administrative expense in the accompanying consolidated statements of operations and account balances were charged off against the allowance after all means of collection had been exhausted and the potential for recovery was considered remote.

Concentrations of Credit Risk

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist principally of cash and cash equivalents on deposit at several financial institutions as well as accounts receivable. The Company deposits cash with high-credit-quality financial institutions, which, at times, may exceed federally insured amounts. The Company invests its cash equivalents in highly-rated money market funds. Additionally, the Company performs ongoing credit evaluations of its customers' financial condition and will limit the amount of credit as deemed necessary, but currently does not require collateral from customers.

As of December 31, 2021, Reseller A represented approximately 15% of accounts receivable. As of December 31, 2021, no single customer represented greater than 10% of accounts receivable. As of December 31, 2020, no single customer or reseller represented greater than 10% of accounts receivable.

For the years ended December 31, 2021, 2020 and 2019, no single customer or reseller represented greater than 10% of revenue.

Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. GAAP establishes a three-level valuation hierarchy for the disclosure of fair value measurements. The determination of the applicable level within the hierarchy of a particular asset or liability depends on the inputs used in its valuation as of the measurement date, and notably the extent to which the inputs are market-based (observable) or internally determined (unobservable). The three levels are defined as follows:

- *Level 1:* Observable inputs that reflect quoted prices (unadjusted) for identical assets or liabilities in active markets.

- *Level 2:* Observable inputs, other than Level 1 inputs, such as quoted prices for similar assets or liabilities, quoted prices in markets that are not active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

- *Level 3:* Unobservable inputs reflecting the Company's own assumptions used to measure assets and liabilities at fair value and which require significant management judgment or estimation.

Property and Equipment

Property and equipment are stated at historical cost less accumulated depreciation. Maintenance, repairs and minor renewals are expensed as incurred.

Depreciation is computed using the straight-line method based on the following estimated useful lives:

Asset Type	Useful Life
Computer equipment	3 years
Purchased computer software	1 - 3 years
Furniture and fixtures	3 - 5 years
Leasehold improvements	Lesser of the lease term or 10 years
Other	3 - 5 years

Capitalized Software Costs

Costs for the development of new software products sold to customers and substantial enhancements to existing software products sold to customers are expensed as incurred until technological feasibility has been established, at which time any additional costs are capitalized during the development stage and until the software is generally released. The Company believes its current process for developing software will be essentially completed concurrently with the establishment of technological feasibility; hence, no costs have been capitalized to date.

For development costs related to software to be used internally, the Company follows guidance of Accounting Standards Codification Topic 350-40, *Internal Use Software* (“ASC 350-40”). ASC 350-40 sets forth the guidance for costs incurred for computer software developed or obtained for internal use and requires companies to capitalize qualifying computer software costs that are incurred during the application development stage. These capitalized costs are included in intangible assets in the consolidated balance sheets and are amortized on a straight-line basis over the expected useful life of the software, which is estimated to be four years. Costs related to preliminary project activities and post-implementation activities are expensed as incurred.

The Company capitalizes the cost of software purchased from third-party vendors and has classified such costs as property and equipment in the consolidated balance sheets. These costs are amortized over their useful lives, which are primarily estimated to be three years.

Goodwill

Goodwill represents the excess of the purchase price over the fair value of net assets acquired in business combinations using the acquisition method of accounting, which requires that the assets acquired and liabilities assumed be recorded at the date of acquisition at their respective fair values. The Company evaluates goodwill for impairment annually in the fourth quarter of each year and as events occur or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying amount. The Company’s test for goodwill impairment starts with a qualitative assessment to determine whether it is necessary to perform a quantitative goodwill impairment test. If qualitative factors indicate that the fair value of the reporting unit is more likely than not less than its carrying amount, then a quantitative goodwill impairment test is performed. Under the quantitative impairment test, if the carrying amount of the reporting unit exceeds its fair value, then an impairment loss is recognized in an amount equal to that excess, not to exceed the total amount of goodwill. For purposes of the annual impairment test, the Company has determined it has one reporting unit. There was no impairment of goodwill recorded during the years ended December 31, 2021, 2020 or 2019.

Intangible Assets

Intangible assets with finite lives arising from business combinations are initially recorded at fair value and amortized over their useful lives using the straight-line method. The estimated useful life for each acquired intangible asset class is as follows:

Asset Type	Useful Life	Weighted Average Useful Life
Developed technology	4 - 9 years	7.7 years
Customer relationships	3 - 13 years	12.7 years
Trade names	10 years	10 years
Product backlog	3 years	3 years

The Company records acquired in-process research and development as indefinite-lived intangible assets. Purchased intangible assets with indefinite lives are not amortized but assessed for potential impairment annually and when events or circumstances indicate that their carrying amounts might be impaired. There was no impairment of indefinite-lived intangible assets recorded during the years ended December 31, 2021, 2020 or 2019. On completion of the related development projects, the in-process research and development assets are reclassified to developed technology and amortized over their estimated useful lives.

Impairment of Long-Lived Assets

The Company reviews long-lived assets, including property and equipment and finite-lived intangible assets, for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. Such events and changes may include significant changes in performance relative to expected operating results, significant changes in asset use, significant negative industry or economic trends and changes in the Company’s business strategy. An impairment loss is recognized when estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. There were no events or changes in circumstances that indicated the Company’s long-lived assets were impaired during the years ended December 31, 2021, 2020 or 2019.

Deferred Debt Issuance Costs

Total deferred debt issuance costs incurred by the Company were $8.1 million and $1.2 million related to the 2021 Credit Facilities and the 2019 Credit Facilities, respectively (discussed in Note 9).

The carrying value of deferred debt issuance costs associated with the 2021 Term Loan Facility (discussed in Note 9) and the 2019 Credit Facilities was $7.7 million and $1.0 million at December 31, 2021 and 2020 respectively, which was included as a reduction to long-term debt in the accompanying consolidated balance sheets. These issuance costs incurred to obtain debt financing are deferred and amortized to interest expense using the effective interest method over the contractual term of the debt.

The carrying value of deferred debt issuance costs associated with the 2021 Revolving Facility (discussed in Note 9) was $0.8 million at December 31, 2021, which was included in other assets in the accompanying consolidated balance sheets. These issuance costs associated with the 2021 Revolving Facility are capitalized and amortized to interest expense on a straight-line basis over the contractual term of the debt.

Operating Leases

The Company leases office spaces and a data center under noncancelable lease terms, which are accounted for in accordance with Accounting Standards Codification Topic 842, *Leases* (“ASC 842”), which was adopted by the Company on January 1, 2020. Determination of a leasing arrangement is performed at inception. Right-of-use assets represent the Company's right to use leased assets over the term of the lease, adjusted for lease incentives such as tenant improvements. Lease liabilities represent the Company's contractual obligation to make lease payments over the lease term. Right-of-use assets and lease liabilities are determined based on the present value of future lease payments using the interest rate implicit in the loan or, if that rate cannot be readily determined, the incremental borrowing rate. Incremental borrowing rates are determined for each lease based on the Company's borrowing rate adjusted for term differences and foreign currency risk.

Some real estate leases contain lease and non-lease components. Non-lease components generally represent use-based charges for common area maintenance, taxes and utilities. The Company has elected not to separate lease and non-lease components. In addition to variable lease payments for use-based charges, some leasing arrangements contain variable lease payments that increase based on a consumer price index. Some contracts also contain lease incentives such as tenant improvement allowances and rent holidays, which are treated as a reduction of lease payments for the measurement of the lease liability.

Research and Development

Research and development costs include direct and allocated expenses. Other than software development costs that qualify for capitalization as discussed above, research and development costs are expensed as incurred.

Advertising Costs

The Company expenses advertising costs as incurred. Advertising expense is included within sales and marketing expense in the consolidated statements of operations. For the years ended December 31, 2021, 2020 and 2019, advertising expenses were $9.8 million, $5.3 million and $1.9 million, respectively.

Stock-Based Compensation

Stock-based compensation expense, including grants of employee stock options and restricted stock-based awards, is measured at the date of grant based on the fair value of the award. The Company accounts for forfeitures as they occur.

The Company estimates the fair value of time-based stock options on the grant date using a Black-Scholes valuation model. Share-based compensation expense for restricted stock units ("RSUs") is measured based on the fair value of the Company's common stock on the date of grant. The Company recognizes share-based compensation expense for these awards on a straight-line basis over the award's requisite service period.

The vesting of performance stock units ("PSUs") and performance-based stock options is contingent upon the achievement of certain performance and/or market-based metrics. Share-based compensation expense for PSUs with only performance-based vesting conditions is measured based on the fair value of the Company's stock price on the date of grant. Share-based compensation expense for market-based options and market-based PSUs that have performance and market vesting conditions are measured on the grant date using a Monte Carlo simulation. The Company recognizes share-based compensation expense for these awards on a graded vesting basis over the term of the award.

The fair value of each time-based option grant is estimated on the date of the grant using the Black-Scholes option pricing model. For awards subject to performance and market conditions, the Company uses a Monte Carlo simulation model, which utilizes multiple inputs to estimate the probability that market conditions will be achieved. Both models require highly subjective assumptions as inputs, including the following:

- *Risk-free rate*: The risk-free interest rate is based on the implied yield currently available on U.S. Treasury securities with a remaining term commensurate with the estimated expected term.

- *Expected term*: For time-based awards, the estimated expected term of options granted is generally calculated as the vesting period plus the midpoint of the remaining contractual term, as the Company does not have sufficient historical information to develop reasonable expectations surrounding future exercise patterns and post-vesting employment termination behavior. For awards subject to market and performance conditions, the expected term represents the period of time that the options or awards granted are expected to be outstanding.

- *Dividend yield*: The Company uses a dividend yield of zero, as it does not currently issue dividends and has no plans to issue dividends in the foreseeable future.

- *Volatility*: Since the Company does not have substantive trading history of its common stock, expected volatility is estimated based on the historical volatility of peer companies over the period commensurate with the estimated expected term.

- *Fair value*: Prior to the IPO, there was no public market for the Company's common stock, so the fair value of the shares of common stock was established by the Board using various inputs, including an independent valuation. Following the IPO, the Company's shares are traded in the public market, and accordingly the Company uses the applicable closing price of its common stock to determine fair value.

No time-based options were granted during the years ended December 31, 2021, 2020 and 2019.

No awards subject to performance and market conditions were granted during the years ended December 31, 2020 and 2019. The following assumptions were used for awards subject to performance and market conditions that were granted during the year ended December 31, 2021:

	Year Ended December 31, 2021
Risk-free rate	0.12 %
Expected term	1.7 years
Dividend yield	—
Volatility	65.0 %
Grant date fair value of awards granted during the period	$19.94

Income Taxes

Income taxes are accounted for under the asset and liability method. Deferred income tax assets and liabilities are computed annually for temporary differences between the financial statement basis and the income tax basis of assets and liabilities that will result in taxable or deductible amounts in the future. The Company's temporary differences result primarily from net operating losses, stock compensation, deferred revenue, intangible assets and accrued expenses. Deferred income tax asset and liability computations are based on enacted tax laws and rates applicable to the years in which the differences are expected to affect taxable income. A valuation allowance is established when necessary to reduce deferred income tax assets to the amounts expected to be realized.

The Company evaluates the tax positions taken or expected to be taken in the course of preparing the Company's tax returns to determine whether the tax positions are more likely than not of being sustained by the applicable tax authority. Tax positions not deemed to meet the more likely than not threshold would not be recorded as a tax benefit or expense in the current year. Interest and penalties related to income tax liabilities are included in the benefit (provision) for income taxes.

Net Income (Loss) Per Share

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of shares of common stock outstanding during the period. Diluted net income (loss) per share is computed by dividing net income (loss) by the weighted-average number of shares of common stock outstanding during the period, plus the dilutive effects of RSUs, PSUs and stock options. Dilutive shares of common stock are determined by applying the treasury stock method.

Recent Accounting Pronouncements

In October 2021, the FASB issued ASU 2021-08, *Business Combinations (Topic 805): Accounting for Contract Assets and Contract Liabilities from Contracts with Customers* ("ASU No. 2021-08"). ASU No. 2021-08 will require companies to apply the definition of a performance obligation under ASC Topic 606 to recognize and measure contract assets and contract liabilities (i.e., deferred revenue) relating to contracts with customers that are acquired in a business combination. Under current GAAP, an acquirer generally recognizes assets acquired and liabilities assumed in a business combination, including contract assets and contract liabilities arising from revenue contracts with customers, at fair value on the acquisition date. ASU No. 2021-08 is effective for fiscal years beginning after December 15, 2022, with early adoption permitted. The Company is currently evaluating the impact of this ASU on its consolidated financial statements. The impact is dependent on the size and frequency of future acquisitions and does not affect contract assets or contract liabilities related to acquisitions completed in a year prior to the adoption date.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"), which simplifies the accounting for income taxes, eliminates certain exceptions to the general principles in Topic 740 and clarifies certain aspects of the current guidance to improve consistent application among reporting entities. Effective January 1, 2021, the Company adopted ASU 2019-12. The adoption did not have a material impact on its consolidated financial statements.

3. Revenue Recognition and Deferred Commissions

Disaggregation of Revenue

The following table presents revenue by category:

	Year Ended December 31,		
	2021	2020 (in thousands)	2019
Subscription term-based licenses:			
Multi-year subscription term-based licenses	$ 110,044	$ 86,578	$ 113,151
1-year subscription term-based licenses	62,468	57,966	48,255
Total subscription term-based licenses	172,512	144,544	161,406
Subscription SaaS	57,617	38,072	26,626
Maintenance and support	49,165	41,515	37,313
Total subscription revenue	279,294	224,131	225,345
Professional services and other	20,155	19,458	17,553
Total revenue	$ 299,449	$ 243,589	$ 242,898

Contract Balances

Contract assets represent amounts for which the Company has recognized revenue, pursuant to its revenue recognition policy, for contracts that have not yet been invoiced to customers where there is a remaining performance obligation, typically for multi-year arrangements. In multi-year agreements, the Company generally invoices customers on an annual basis on each anniversary of the contract start date. Amounts anticipated to be billed within one year of the balance sheet date are recorded as contract assets, current; the remaining portion is recorded as contract assets, noncurrent in the consolidated balance sheets. The change in the total contract asset balance primarily relates to entering into new multi-year contracts, billing on existing contracts, and for the year ended December 31, 2020, recognition of the fair value of Symphonic contract assets acquired (see Note 7). The opening and closing balances of contract assets were as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Beginning balance	$ 73,791	$ 86,010	$ 67,468
Ending balance	70,997	73,791	86,010
Change	$ (2,794)	$ (12,219)	$ 18,542

Contract liabilities consist of customer billings in advance of revenue being recognized. The Company primarily invoices its customers for subscription arrangements annually in advance, though certain contracts require invoicing for the entire subscription in advance. Amounts anticipated to be recognized within one year of the balance sheet date are recorded as deferred revenue, current; the remaining portion is recorded as deferred revenue, noncurrent in the consolidated balance sheets. The opening and closing balances of contract liabilities included in deferred revenue were as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Beginning balance	$ 52,398	$ 47,507	$ 35,367
Ending balance	77,541	52,398	47,507
Change	$ 25,143	$ 4,891	$ 12,140

The change in deferred revenue relates primarily to invoicing customers and recognizing revenue in conjunction with the satisfaction of performance obligations. Revenue recognized during the years ended December 31, 2021, 2020 and 2019 that was included in the deferred revenue balances at the beginning of the respective periods was as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Deferred revenue recognized as revenue	$ 50,926	$ 44,800	$ 33,100

Remaining Performance Obligations

Revenue allocated to remaining performance obligations represents contracted revenue that has not yet been recognized, which includes deferred revenue and noncancelable amounts to be invoiced. As of December 31, 2021, the Company had $273.9 million of transaction price allocated to remaining performance obligations, of which 82% is expected to be recognized as revenue over the next 24 months, with the remainder to be recognized thereafter.

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Deferred Commissions

The following table summarizes the account activity of deferred commissions for the years ended December 31, 2021, 2020 and 2019:

	Year Ended December 31, 2021	2020	2019
		(in thousands)	
Beginning balance	$ 15,929	$ 13,670	$ 11,033
Additions to deferred commissions	24,734	10,304	9,060
Amortization of deferred commissions	(10,823)	(8,045)	(6,423)
Ending balance	$ 29,840	$ 15,929	$ 13,670
Deferred commissions, current	$ 10,460	$ 6,604	$ 5,814
Deferred commissions, noncurrent	19,380	9,325	7,856
Total deferred commissions	$ 29,840	$ 15,929	$ 13,670

4. Allowances for Expected Credit Losses

The following table presents the changes in the allowance for expected credit losses for financial assets measured at amortized cost:

	Accounts Receivable	Contract Assets
	Year Ended December 31, 2021 (in thousands)	
Beginning balance	$ 828	$ 87
Provision for credit losses, net of recoveries	366	106
Write-offs	(584)	(37)
Ending balance	$ 610	$ 156

5. Fair Value of Financial Instruments

The Company invests primarily in money market funds, which are measured and recorded at fair value on a recurring basis and are classified within Level 1 of the fair value hierarchy because they are valued based on quoted market prices in active markets. The fair value of these financial instruments were as follows:

	December 31, 2021 Level 1	Level 2	Level 3	Total
		(in thousands)		
Cash and cash equivalents:				
Money market funds	$ 181,009	$ —	$ —	$ 181,009

	December 31, 2020 Level 1	Level 2	Level 3	Total
		(in thousands)		
Cash and cash equivalents:				
Money market funds	$ 113,083	$ —	$ —	$ 113,083

The carrying amounts of the Company's accounts receivable, accounts payable and other current liabilities approximate their fair values due to their short maturities. The carrying value of the Company's long-term debt approximates its fair value based on Level 2 inputs as the principal amounts outstanding are subject to variable interest rates that are based on market rates (see Note 9).

6. Property and Equipment

Property and equipment consisted of the following:

	December 31, 2021	December 31, 2020
	(in thousands)	
Computer equipment	$ 8,117	$ 6,581
Furniture and fixtures	4,331	3,887
Purchased computer software	785	785
Leasehold improvements	8,670	7,818
Other	448	448
Property and equipment, gross	22,351	19,519
Less: Accumulated depreciation	(12,955)	(10,073)
Property and equipment, net	$ 9,396	$ 9,446

Depreciation expense was $3.7 million for the years ended December 31, 2021 and 2020 and $3.1 million for the year ended December 31, 2019.

7. Acquisitions and Dispositions

Acquisitions

Singular Key, Inc. Acquisition

On September 27, 2021, the Company acquired 100% of the voting equity interest in Singular Key, Inc. ("Singular Key"). Singular Key is a provider of no-code identity and security orchestration. Singular Key streamlines the integration of identity services, providing a no-code method of creating workflows across multiple identity platforms, including identity verification, fraud, risk, access management, privileged access and identity governance into a unified identity fabric. The purpose of this acquisition was to accelerate the Company's entry into the identity orchestration arena.

The total purchase price was $73.2 million, net of cash acquired, which consisted of the following:

	Fair Value
	(in thousands)
Cash, net of cash acquired	$ 40,310
Common stock issued	32,871
Total	$ 73,181

The fair value of the 1,260,885 common shares issued as consideration was determined based on the lowest trading price of a Ping Identity common share on the New York Stock Exchange on the acquisition date of September 27, 2021.

The following table summarizes the preliminary allocation of the purchase price, based on the estimated fair value of the assets acquired and liabilities assumed at the acquisition date:

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	September 27, 2021		Useful Life
	(in thousands)		
Fair value of net assets acquired			
Developed technology	$	21,480	4 years
Goodwill		56,860	Indefinite
Other assets		75	
Total assets acquired		78,415	
Other liabilities		(39)	
Deferred tax liability		(5,195)	
Total liabilities assumed		(5,234)	
Net assets acquired, excluding cash	$	73,181	

Goodwill is primarily attributable to the workforce acquired and the expected synergies arising from integrating Singular Key into the PingOne Cloud Platform. The integration of Singular Key capabilitiles is expected to enable customers to improve deployment speed, accelerate cloud migration, reduce costs and lower the risk associated with vendor lock-in. None of the goodwill is deductible for tax purposes. The Company incurred $0.8 million of acquisition-related expenses in conjunction with the Singular Key acquisition, which are included in general and administrative expenses on the consolidated statement of operations for the year ended December 31, 2021.

Additional information around the Singular Key acquisition, such as that related to income tax and other contingencies existing as of the acquisition date but unknown to the Company, may become known during the remainder of the measurement period, not to exceed one year from the acquisition date, which may result in changes to the amounts and allocations recorded.

SecuredTouch, Inc. Acquisition

On June 20, 2021, the Company acquired 100% of the voting equity interest in SecuredTouch, Inc. (“SecuredTouch”). SecuredTouch is a leader in fraud and bot detection and mitigation, which leverages behavioral biometrics, artificial intelligence, machine learning, and deep learning to provide identity, risk, and fraud teams early visibility into potential malicious activity happening across digital properties. The purpose of this acquisition was to accelerate the Company’s cloud-delivered intelligent-identity solutions that combat malicious behavior such as bots, emulators, and account takeover.

The total purchase price was $39.7 million, net of cash acquired and a $0.2 million post-closing purchase price adjustment. The purchase price required to be paid by Ping Identity was reduced by $0.2 million as a result of changes to SecuredTouch’s originally estimated working capital balances. Additionally, in the fourth quarter of 2021, the Company recognized a deferred tax asset of $1.2 million, with a corresponding decrease to goodwill.

The following table summarizes the allocation of the purchase price based on the estimated fair value of the assets acquired and liabilities assumed at the acquisition date:

	June 20, 2021	Useful Life
	(in thousands)	
Fair value of net assets acquired		
Developed technology	$ 8,300	4 years
Goodwill	30,804	Indefinite
Deferred tax asset	1,216	
Other assets	157	
Total assets acquired	40,477	
Deferred revenue	(337)	
Other liabilities	(483)	
Total liabilities assumed	(820)	
Net assets acquired	$ 39,657	

Goodwill is primarily attributable to the workforce acquired and the expected synergies arising from integrating SecuredTouch into the Ping Intelligent Identity Platform to provide customers a more comprehensive offering that extends past traditional workforce use case and accelerates Ping's cloud-delivered intelligent identity solutions that combat malicious behavior. None of the goodwill is deductible for tax purposes. The Company incurred $0.5 million of acquisition-related expenses in conjunction with the SecuredTouch acquisition, which are included in general and administrative expenses on the consolidated statement of operations for the year ended December 31, 2021.

Symphonic Software Limited Acquisition

On October 31, 2020, the Company acquired 100% of the voting equity interest in Symphonic Software Limited ("Symphonic"). Symphonic is a leader in dynamic authorization for protecting APIs, data, apps and resources through identity. The purpose of this acquisition was to accelerate dynamic and intelligent authorization for enterprises pursuing Zero Trust identity-defined security.

The total purchase price was $28.8 million, net of cash acquired. An additional $0.4 million and $0.6 million is payable in common stock of the Company on December 31, 2021 and December 31, 2022, respectively, contingent on individuals remaining employed as of those dates and meeting certain performance conditions. As these payments are subject to the continued employment of those individuals, they will be recognized through compensation expense as incurred. See Note 12 for additional details. On December 31, 2021, the Company settled the first portion of common stock payable. See Note 12 for additional details.

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The following table summarizes the allocation of the purchase price, based on the estimated fair value of the assets acquired and liabilities assumed at the acquisition date:

	October 31, 2020 (in thousands)	Useful Life
Fair value of net assets acquired		
Developed technology	$ 6,999	6 years
Product backlog	609	3 years
Customer relationships	246	3 years
Goodwill	21,341	Indefinite
Contract asset	1,387	
Other assets	373	
Total assets acquired	30,955	
Deferred tax liability	(1,881)	
Other liabilities	(253)	
Total liabilities assumed	(2,134)	
Net assets acquired, excluding cash	$ 28,821	

Goodwill is primarily attributable to the workforce acquired and the expected synergies arising from integrating Symphonic into the Ping Intelligent Identity Platform so enterprise customers can cover advanced authorization scenarios that go beyond typical user roles and entitlements. None of the goodwill is deductible for tax purposes. The Company incurred $1.1 million of acquisition-related expenses in conjunction with the Symphonic acquisition, which are included in general and administrative expenses on the consolidated statement of operations for the year ended December 31, 2020.

ShoCard, Inc. Acquisition

On March 2, 2020, Ping Identity Corporation acquired 100% of the voting equity interest in ShoCard, Inc., a Delaware Corporation (“ShoCard”). ShoCard is a cloud-based mobile identity solution that offers identity services for verified claims. The purpose of this acquisition was to expand the Company’s identity proofing solutions.

The total purchase price was $5.5 million. An additional $3.1 million and $2.3 million of contingent compensation is payable in common stock of the Company on the first and second anniversary of the acquisition, respectively, contingent on certain individuals remaining employed as of those dates and other service conditions. As these payments are subject to the continued employment of those individuals, they will be recognized through compensation expense as incurred. On March 2, 2021, the Company settled the first portion of contingent compensation payable. See Note 12 for additional details.

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The following table summarizes the allocation of the purchase price, based on the fair value of the assets acquired and liabilities assumed at the acquisition date:

	March 2, 2020 (in thousands)	Useful Life
Fair value of net assets acquired		
Developed technology	$ 3,550	7 years
Goodwill	964	Indefinite
Deferred tax asset	1,005	
Other assets	11	
Total assets acquired	5,530	
Other liabilities	(2)	
Total liabilities assumed	(2)	
Net assets acquired	$ 5,528	

Goodwill is primarily attributable to the workforce acquired and the expected synergies arising from integrating ShoCard's identity solution with the Company's existing identity solutions. None of the goodwill is deductible for tax purposes. The Company incurred $0.6 million of acquisition-related expenses in conjunction with the ShoCard acquisition, which are included in general and administrative expenses on the consolidated statement of operations for the year ended December 31, 2020.

Additional Acquisition Related Information

The operating results of Singular Key, SecuredTouch, Symphonic and ShoCard are included in the Company's consolidated statements of operations from the date of acquisition. Revenue and earnings of Singular Key, Symphonic and ShoCard since their respective dates of acquisition were not material to the consolidated statements of operations. Revenue of SecuredTouch since the date of acquisition is not considered material to the consolidated statements of operations. The net loss of SecuredTouch included in the Company's consolidated statements of operations since the date of acquisition was $4.3 million.

Pro Forma Financial Information (unaudited)

If SecuredTouch and Singular Key had been acquired on January 1, 2020 and included in our results for 2020 and 2021, it would not have had a material impact to revenue, and would have impacted earnings, on a pro forma basis, by $12.1 million and $5.2 million, respectively, inclusive of intangible amortization which would have been $7.4 million annually. Pro forma results of operations have not been prepared for Symphonic or ShoCard because the effects of the acquisitons were not material to the consolidated statements of operations.

Dispositions

Identiverse Disposition

In December 2021, the Company sold certain assets and liabilities associated with the Identiverse conference, the industry leading annual identity conference founded by Ping Identity, for estimated proceeds of $1.5 million. The $1.5 million receivable representing the estimated proceeds to be received from the sale is expected to be collected in 2024, and is included in other noncurrent assets on the consolidated balance sheet as of December 31, 2021. The sale resulted in a gain on asset disposition of $1.4 million during the year ended December 31, 2021. The financial impact of the Identiverse conference was not material to the Company for the years ended December 31, 2021, 2020, and 2019.

8. Goodwill and Intangible Assets

The changes in the carrying amount of the Company's goodwill balance from December 31, 2020 to December 31, 2021 were as follows (in thousands):

Beginning balance	$	441,150
Additions to goodwill related to acquisitions		87,664
Foreign currency translation adjustment		(266)
Ending balance	$	528,548

The Company's intangible assets as of December 31, 2021 were as follows:

	December 31, 2021		
	Gross Amount	Accumulated Amortization	Net Carrying Value
		(in thousands)	
Developed technology	$ 146,142	$ (69,802)	$ 76,340
Customer relationships	95,131	(41,326)	53,805
Trade names	56,778	(31,093)	25,685
Product backlog	634	(287)	347
Capitalized internal-use software	50,934	(17,760)	33,174
Other intangible assets	1,481	(755)	726
Total intangible assets	$ 351,100	$ (161,023)	$ 190,077

The Company's intangible assets as of December 31, 2020 were as follows:

	December 31, 2020		
	Gross Amount	Accumulated Amortization	Net Carrying Value
		(in thousands)	
Developed technology	$ 119,450	$ (55,826)	$ 63,624
Customer relationships	95,135	(33,724)	61,411
Trade names	56,718	(25,424)	31,294
Product backlog	642	(42)	600
Capitalized internal-use software	35,841	(12,949)	22,892
Other intangible assets	1,199	(598)	601
Total intangible assets	$ 308,985	$ (128,563)	$ 180,422

The Company capitalized $20.2 million, $14.0 million and $10.5 million of internal-use software costs during the years ended December 31, 2021, 2020 and 2019, respectively, which included $1.2 million and $0.7 million of stock-based compensation costs during the years ended December 31, 2021 and 2020, respectively.

Amortization expense for the years ended December 31, 2021, 2020 and 2019 was $40.7 million, $33.6 million and $29.9 million, respectively.

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As of December 31, 2021, expected amortization expense for intangible assets subject to amortization for the next five years is as follows:

Year Ending December 31,	December 31, 2021 (in thousands)
2022	$ 47,136
2023	44,594
2024	41,081
2025	28,724
2026	11,278
Thereafter	17,264
Total	$ 190,077

9. Debt

2018 Credit Facilities

In January 2018, Ping Identity Corporation (the “Borrower”), Roaring Fork Intermediate, LLC (“Holdings”) and certain other domestic subsidiaries of the Borrower (collectively, with the Borrower and Holdings, the “Credit Parties”) entered into credit facilities with a consortium of lenders comprised of (a) a term loan with a principal amount of $250.0 million (the “2018 Term Loan Facility”), and (b) a revolving line of credit in a principal committed amount of $25.0 million (the “2018 Revolving Credit Facility” and, collectively with the 2018 Term Loan Facility, the “2018 Credit Facilities”). The 2018 Term Loan Facility and 2018 Revolving Credit Facility had maturity dates of January 25, 2025 and January 25, 2023, respectively. Borrowings under the 2018 Credit Facilities were collateralized by substantially all of the assets of the Credit Parties.

The 2018 Term Loan Facility bore interest at the option of the Borrower at a rate per annum equal to (a) an adjusted LIBO rate (with a floor of 1.00% per annum) plus an applicable margin of 3.75%, payable on the last day of the applicable interest period applicable thereto (“Eurodollar” loan), or (b) the alternate base rate (with a floor of 2.00% per annum) plus an applicable margin of 2.75%, payable quarterly in arrears the last business day of each March, June, September and December. The 2018 Term Loan Facility was borrowed as a Eurodollar loan.

Beginning September 2018, 0.25% of the principal amount of the 2018 Term Loan Facility was payable quarterly. In connection with the closing of the IPO and the underwriters’ exercise of the overallotment option as described in Note 1, the Company repaid $196.4 million of the principal amount of the 2018 Term Loan Facility using the proceeds. Prior to paying down a portion of the 2018 Term Loan Facility, the Company had remaining deferred debt issuance costs of $4.6 million. In connection with the debt repayments, the Company elected to proportionately write off a portion of its deferred debt issuance costs based on the percentage of the loan that was repaid. Accordingly, the Company incurred a loss on extinguishment of debt of $3.6 million for the proportionate write off of deferred debt issuance costs, included in the consolidated statements of operations for the year ended December 31, 2019.

2019 Credit Agreement

In December 2019, the Credit Parties entered into a credit agreement (the “2019 Credit Agreement”) with the financial institutions identified therein as lenders, including Bank of America, N.A., as administrative agent, and BofA Securities, Inc. and RBC Capital Markets as joint lead arrangers. Borrower and Holdings are wholly-owned indirect subsidiaries of the Company. In connection therewith, all outstanding borrowings under the 2018 Term Loan Facility were repaid and the 2018 Revolving Credit Facility was terminated. The 2019 Credit Agreement provided for a senior revolving line of credit in a principal committed amount of $150.0 million (the “2019 Revolving Credit Facility”), with the option to request incremental term loan facilities in a minimum amount of $10 million for each facility if certain conditions are met. The 2019 Revolving Credit Facility had a maturity date of December 12, 2024. Obligations under the 2019 Credit Agreement were secured by substantially all of the assets of the Credit Parties.

The 2019 Revolving Credit Facility bore interest at the option of the Borrower at a rate per annum equal to either (i) a base rate, which is equal to the greater of (a) the prime rate, (b) the federal funds effective rate plus 0.5% and (c) the adjusted LIBO rate for a one month interest period plus 1%, or (ii) the adjusted LIBO rate equal to the LIBO rate for the interest period multiplied by the statutory reserve rate, plus in the case of each of clauses (i) and (ii), the Applicable Rate (as defined in the 2019 Credit Agreement), which ranges from (i) 0.25% to 1.0% per annum for base rate loans and (ii) 1.25% to 2.0% per annum for LIBO rate loans, in each case, depending on the senior secured net leverage ratio. The Borrower also paid a commitment fee during the term of the 2019 Credit Agreement ranging from 0.20% to 0.35% of the average daily amount of the available amount to be borrowed under the 2019 Credit Agreement per annum, based on the senior secured net leverage ratio.

In conjunction with entering into the 2019 Revolving Credit Facility, all remaining balances of the 2018 Term Loan Facility were repaid and the 2018 Revolving Credit Facility was terminated, which resulted in a loss on extinguishment of debt of $0.9 million, included in the consolidated statements of operations for the year ended December 31, 2019.

2021 Credit Agreement

On November 23, 2021 (the “Closing Date”), the Credit Parties entered into a credit agreement (the “2021 Credit Agreement”) with the financial institutions party thereto as lenders and Bank of America, N.A., as administrative agent. Borrower and Holdings are wholly-owned indirect subsidiaries of the Company. The 2021 Credit Agreement provides for (a) a new term loan B facility with an aggregate principal amount of $300 million (the “2021 Term Loan Facility” and the loans thereunder, the “2021 Term Loans”) and (b) a new revolving line of credit facility in an aggregate principal amount of $150 million (the “2021 Revolving Facility” and together with the 2021 Term Loan Facility, the “2021 Credit Facilities”). Proceeds from the 2021 Term Loan Facility were used to repay in full paid all remaining balances under the 2019 Revolving Credit Facility. The 2021 Revolving Facility was undrawn at the Closing Date. Following the repayment of the 2019 Revolving Credit Facility, any remaining and future proceeds from the 2021 Credit Facilities will be used for working capital purposes and general corporate purposes. The 2021 Credit Facilities are secured by substantially all of the assets of the Credit Parties.

The 2021 Term Loans mature on November 23, 2028. Amortization payments on the 2021 Term Loans are equal to 0.25% of the initial aggregate principal amount of the 2021 Term Loans, payable at the end of each fiscal quarter, commencing with the fiscal quarter ending June 30, 2022. The 2021 Term Loans bear interest at Term SOFR (as defined in the 2021 Credit Agreement and subject to a floor of 0.50%), plus the applicable SOFR Adjustment (as defined in the 2021 Credit Agreement), plus an applicable margin of 3.75%, or a base rate plus an applicable margin of 2.75%. The interest rate on the 2021 Term Loans was 4.25% as of December 31, 2021.

The 2021 Revolving Facility matures on November 23, 2026. Amounts drawn under the 2021 Revolving Facility denominated in U.S. dollars will bear interest at Term SOFR, subject to a floor of 0.00%, plus the applicable SOFR Adjustment, plus an applicable margin ranging from 1.25% to 2.00%, depending on the senior secured net leverage ratio (as calculated pursuant to the 2021 Credit Agreement) or (ii) a base rate plus an applicable margin ranging from 0.25% to 1.00%, depending on the senior secured net leverage ratio. Amounts drawn under the 2021 Revolving Facility denominated in available non-U.S.

dollar currencies will bear interest at the applicable rate for such non-U.S. dollar currencies plus the applicable rate adjustment (if any) plus an applicable margin ranging from 1.25% to 2.00%, depending on the senior secured net leverage ratio. There were no amounts drawn under the 2021 Revolving Facility as of December 31, 2021.

Additionally, the Borrower will also pay a commitment fee ranging from 0.20% to 0.35% per annum on the actual daily unused amount of the 2021 Revolving Facility, based on the senior secured net leverage ratio, payable quarterly in arrears the last business day of each March, June, September and December.

Any prepayment of the 2021 Term Loans in connection with a repricing transaction occurring prior to six months after the effective date of the 2021 Credit Agreement, subject to exceptions set forth in the 2021 Credit Agreement, will be subject to a prepayment premium equal to 1.00% of the principal amount of any 2021 Term Loans being prepaid. After May 23, 2022, any borrowing under the 2021 Term Loans may be repaid, in whole or in part, at any time and from time to time without premium or penalty other than customary breakage costs. Amounts drawn under the 2021 Revolving Facility may be repaid, in whole or in part, at any time and from time to time without premium or penalty other than customary breakage costs, and, subject to the terms, conditions and limitations set forth in the 2021 Credit Agreement, any amounts repaid may be reborrowed. Additionally, the 2021 Credit Agreement contains customary mandatory prepayment provisions.

The 2021 Credit Agreement contains customary events of default (including an event of default upon a change of control), customary representations and warranties and affirmative and negative covenants, including customary restrictions on the ability of the Credit Parties and their restricted subsidiaries to, among other things, incur indebtedness, make investments, make dividends and incur liens.

Under the terms of the 2021 Credit Agreement, Holdings and its restricted subsidiaries are required to maintain a total net leverage ratio (as calculated pursuant to the 2021 Credit Agreement) (i) commencing with the fiscal quarter ending June 30, 2022 and through and including the fiscal quarter ending March 31, 2024, of no more than 5.00:1.00 and (ii) commencing with the fiscal quarter ending June 30, 2024 and each fiscal quarter thereafter, of no more than 4.00:1.00. As of December 31, 2021, the Credit Parties were in compliance with all financial covenants.

Under the 2021 Credit Agreement, Holdings, the Borrower and the Borrower's restricted subsidiaries are limited in their ability to declare or pay a dividend or return any equity capital to its equity holders (including any direct or indirect parent company of Holdings) or to authorize or make any other distribution, payment or delivery of property to such equity holders (each such dividend, return, distribution, payment or delivery, as applicable, a "Dividend"), subject to certain exceptions, including, without limitation, (1) stock repurchases from current or former employees, officers or directors in an amount not to exceed the greater of $16,750,000 and 30% of consolidated EBITDA (as calculated pursuant to the 2021 Credit Agreement) for the most recently ended four quarters; (2) other Dividends in an aggregate amount not to exceed the greater of $22,000,000 and 40% of consolidated EBITDA for the most recently ended four quarters; (3) unlimited additional Dividends provided that on the day of declaration of such Dividend there is no specified event of default (as defined in the 2021 Credit Agreement) and on a pro forma basis, the total net leverage ratio of Holdings and its restricted subsidiaries for the most recently ended four quarters is not greater than 3.50 to 1.00; (4) payment of certain overhead costs and expenses of Holdings or any direct or indirect parent of Holdings (including any direct or indirect parent company of Holdings) and (5) customary tax distributions.

In conjunction with entering into the 2021 Credit Agreement, all remaining balances under the 2019 Revolving Credit Facility were repaid and the 2019 Revolving Credit Facility was terminated, which resulted in a loss on extinguishment of debt of $0.2 million, included in the consolidated statements of operations for the year ended December 31, 2021.

The Company recognized $2.7 million, $2.2 million and $12.2 million in interest expense related to the respective debt facilities during the years ended December 31, 2021, 2020 and 2019, respectively.

As of December 31, 2021 the Company's outstanding long-term debt balance was $291.2 million and the current portion of long-term debt was $1.1 million. These balances were net of debt issuance costs related to the 2021 Term Loan Facility of $6.6 million and $1.1 million, respectively. As of December 31, 2020, the Company's outstanding long-term debt balance was $149.0 million (net of debt issuance costs related to the 2019 Credit Facility of $1.0 million). The debt issuance costs for the 2021 Term Loan and 2019 Credit Facility are a direct deduction from the long-term debt liability and are amortized into interest expense over the contractual term of the borrowings using the effective interest method.

The Company incurred $0.3 million in costs associated with the execution of the 2021 Revolving Facility during the year ended December 31, 2021. These costs were capitalized to other assets in the consolidated balance sheet and will be amortized into interest expense on a straight-line basis over the contractual term of the 2021 Revolving Facility. Additionally, the execution of the 2021 Revolving Facility was considered a partial modification whereby $0.6 million of the unamortized debt issuance costs deferred in connection with the previously outstanding 2019 Credit Agreement related to continuing members of the syndicate and will be deferred over the life of the 2021 Revolving Facility. As of December 31, 2021, deferred costs associated with the 2021 Revolving Facility were $0.8 million.

During the years ended December 31, 2021, 2020 and 2019, the Company amortized $0.4 million, $0.3 million and $0.7 million of debt issuance costs, respectively.

Future principal payments on outstanding borrowings as of December 31, 2021 are as follows:

Year Ending December 31,		**December 31, 2021**
		(in thousands)
2022	$	2,250
2023		3,000
2024		3,000
2025		3,000
2026		3,000
Thereafter		285,750
Total	$	300,000

10. Income Taxes

The amounts of loss from continuing operations before income taxes was as follows:

	Year Ended December 31,					
	2021		**2020**		**2019**	
			(in thousands)			
United States	$	(81,184)	$	(29,589)	$	(12,707)
Foreign		(2,152)		3,442		2,981
Loss before income taxes	$	(83,336)	$	(26,147)	$	(9,726)

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The income taxes of foreign subsidiaries not included in the U.S. tax group are presented based on a separate return basis for each tax-paying entity.

The benefit (provision) for income taxes from continuing operations was as follows:

	Year Ended December 31, 2021	2020 (in thousands)	2019
Current			
Federal	$ —	$ (404)	$ —
State	(28)	90	(711)
Foreign	(833)	(318)	(446)
Total current expense	(861)	(632)	(1,157)
Deferred			
Federal	14,478	11,441	3,266
State	3,467	1,784	5,280
Foreign	1,861	1,663	833
Total deferred benefit	19,806	14,888	9,379
Benefit for income taxes	$ 18,945	$ 14,256	$ 8,222

The benefit (provision) for income taxes from continuing operations differs from the provision determined by applying the U.S. statutory tax rate to pretax earnings as a result of the following:

	Year Ended December 31, 2021		2020 (dollars in thousands)		2019	
Statutory U.S. federal income taxes	$ 17,500	(21.0)%	$ 5,491	(21.0)%	$ 2,042	(21.0)%
State income taxes, net of federal taxes	2,734	(3.3)	2,145	(8.2)	482	(5.0)
Foreign taxes rate differential	198	(0.2)	80	(0.3)	49	(0.5)
Tax rate changes	367	(0.4)	303	(1.2)	2,726	(28.0)
Contingent deal consideration	(301)	0.4	(411)	1.6	(610)	6.3
Meals and entertainment	(499)	0.6	(254)	1.0	(826)	8.5
GILTI inclusion	(911)	1.1	(130)	0.5	(820)	8.4
Transaction costs	(269)	0.3	(125)	0.5	116	(1.2)
Fines and penalties	(370)	0.4	(2)	—	(5)	0.1
Stock-based compensation	470	(0.6)	5,021	(19.2)	293	(3.0)
Transportation costs	(85)	0.1	(116)	0.4	(120)	1.2
Withholding tax on foreign dividend	—	—	(366)	1.4	—	—
Return to provision	217	(0.3)	2,048	(7.8)	178	(1.8)
R&D credits	5,397	(6.4)	3,333	(12.7)	5,678	(58.4)
Uncertain tax positions	(1,621)	1.9	(1,598)	6.1	(920)	9.5
Change in valuation allowance	(3,257)	3.9	(1,370)	5.2	—	—
Other	(625)	0.8	207	(0.8)	(41)	0.4
Benefit for income taxes	$ 18,945	(22.7)%	$ 14,256	(54.5)%	$ 8,222	(84.5)%

Undistributed earnings of foreign subsidiaries were $8.4 million as of December 31, 2021. The Company considers the current earnings and any future foreign earnings to be indefinitely reinvested, and therefore does not record deferred taxes related to these earnings. Upon repatriation of earnings, in the form of dividends or otherwise, the Company would be subject to both U.S. income taxes (subject to a dividends received deduction) and withholding taxes payable to certain foreign jurisdictions. Withholding taxes of less than $0.2 million would be payable upon remittance of all previously unremitted earnings at December 31, 2021.

The significant components of deferred tax assets and liabilities at December 31, 2021 and 2020 were as follows:

	December 31, 2021	December 31, 2020
	(in thousands)	
Deferred tax assets		
Fixed assets and intangible assets	$ 23	$ 96
Tax credits (net of uncertain tax position)	15,920	12,546
Deferred share-based compensation	9,405	3,726
Loss and other carryforwards (net of uncertain tax position)	32,460	29,048
Operating lease liabilities	3,086	3,835
Deferred revenue	56	—
Other	1,137	149
Gross deferred tax assets	62,087	49,400
Valuation allowance	(7,858)	(4,577)
Net deferred tax asset	54,229	44,823
Deferred tax liabilities		
Accruals and reserves	(2,215)	(1,357)
Fixed assets and intangible assets	(47,150)	(45,898)
Deferred revenue	—	(7,658)
Operating lease right-of-use assets	(1,957)	(2,474)
Other, net	(946)	(1,341)
Gross deferred tax liabilities	(52,268)	(58,728)
Net deferred tax asset (liability)	$ 1,961	$ (13,905)

The components giving rise to the net deferred income tax assets (liabilities) detailed above have been included in the accompanying consolidated balance sheet at December 31, 2021 and 2020 as follows:

	December 31, 2021	December 31, 2020
	(in thousands)	
Noncurrent deferred tax assets	$ 6,201	$ 3,962
Noncurrent deferred tax liabilities	(4,240)	(17,867)
Net deferred tax asset (liability)	$ 1,961	$ (13,905)

At December 31, 2021, the Company had U.S. Federal net operating loss carryforwards of $115.6 million and foreign net operating loss carryforwards of $18.8 million. The U.S. net operating loss carryforwards, if not used, will begin expiring in 2034. Additionally, the Company had $10.8 million of U.S. research and development ("R&D") credit carryforwards and $5.4 million of foreign R&D credit carryforwards, which if not used, will begin expiring in 2024 and 2030, respectively. Section 163(j) of the Internal Revenue Code limits business interest deductions, with any business interest in excess of the annual limitation carried forward indefinitely. The Company has an interest expense carryforward of $3.1 million. Section 382 and Section 383 of the Internal Revenue Code contain provisions that limit the utilization of net operating loss and tax credit carryforwards if there has been a change of ownership. The Company has completed an analysis of the historical changes in ownership, and has determined that $2.5 million of the net operating loss carryforward at December 31, 2021 will expire prior to utilization due to the Section 382 limitation. As such, the Company has established a valuation allowance against the deferred tax asset related to these net operating loss carryforwards. Additionally, a change in ownership could be triggered by subsequent sales of securities by the Company or its shareholders resulting in a limitation of the net operating loss and tax credit carryforwards in the future.

The Company has determined that it is more likely than not it will be unable to realize the full benefit of its deferred tax assets for R&D credit carryforwards in the U.S. prior to their expiration and has, therefore, established a valuation allowance offset against the associated deferred tax asset. Additionally, the Company has determined that it is more likely than not it will be unable to realize the full benefit of its deferred tax assets for net operating loss carryforwards attributed to foreign jurisdictions and has, therefore, established a valuation allowance offset against the associated deferred tax asset. The valuation allowance for deferred tax assets was $7.9 million and $4.6 million at December 31, 2021 and 2020, respectively. Changes in the valuation allowance for deferred tax assets during the years ended December 31, 2021, 2020 and 2019 were as follows:

	December 31,		
	2021	2020	2019
		(in thousands)	
Valuation allowance at beginning of year	$ 4,577	$ 1,812	$ 1,812
Increases recorded to income tax provision	4,562	1,370	—
Decreases recorded as benefit to income tax provision	(1,305)		
Increases recorded to acquisition purchase accounting	—	1,395	—
Increases related to foreign exchange	24	—	—
Valuation allowance at end of year	$ 7,858	$ 4,577	$ 1,812

The Company files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. The tax years for the Company that remain subject to examination are:

Jurisdiction	Years Under Examination	Additional Open Years
U.S. Federal	None	2018 - 2020
United Kingdom	None	2016 - 2020
Canada	None	2016 - 2020
Australia	None	2016 - 2020
Israel	None	2019
France	None	2019 - 2020

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Additionally, U.S. federal net operating losses and other foreign tax credits carried forward into open years may be subject to adjustment. The Company has evaluated its tax positions and has determined that it has certain unrecognized tax benefits. Accordingly, as of December 31, 2021 and 2020, the Company has reduced certain tax attributes to the extent they would be utilized to offset an unrecognized tax benefit. Changes in the unrecognized tax benefits during the years ended December 31, 2021, 2020 and 2019 were as follows:

	December 31,		
	2021	2020	2019
		(in thousands)	
Unrecognized tax benefits at beginning of year	$ 2,592	$ 1,091	$ 211
Current year increase	1,621	1,598	920
Statute expiration	(76)	(94)	(41)
Currency	2	(1)	7
Tax rate changes	—	(2)	(6)
Unrecognized tax benefits at end of year	$ 4,139	$ 2,592	$ 1,091

The increase in unrecognized tax benefits in the year ended December 31, 2021 primarily related to uncertainty surrounding federal and state research and development credits. The Company does not currently anticipate significant changes in its unrecognized tax benefits over the next 12 months. No interest or penalties for the Company's unrecognized tax benefits were recorded for the years ended December 31, 2021, 2020 or 2019.

11. Stockholders' Equity

Common stock

The Company's Third Amended and Restated Certificate of Incorporation authorizes issuance of up to 500,000,000 shares of common stock with a par value of $0.001 per share. The common stock confers upon its holders the right to vote on all matters to be voted on by the stockholders of the Company (with each share representing one vote) and to ratably participate in any distribution of dividends or payments in the event of liquidation or dissolution on a per share basis. The rights of the holders of common stock will be subject to, and may be adversely affected by, the rights of holders of any preferred stock that may be issued in the future.

As described in Note 1, the Company issued and sold 12,500,000 shares of common stock to the public in conjunction with the closing of its IPO on September 23, 2019. The underwriters' overallotment option was exercised in full and closed on October 22, 2019, where the Company issued and sold an additional 1,875,000 shares of common stock to the public.

Preferred stock

The Company's Third Amended and Restated Certificate of Incorporation authorizes, without stockholder approval but subject to any limitations prescribed by law, the issuance of up to an aggregate of 50,000,000 shares of preferred stock (in one or more series or classes), to create additional series or classes of preferred stock and to establish the number of shares to be included in such series or class. The Board of Directors is also authorized to increase or decrease the number of shares of any series or class subsequent to the issuance of shares of that series or class. Each series will have such rights, preferences and limitations, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences as determined by the Board of Directors. As of December 31, 2021 and December 31, 2020, the Company did not have any shares of preferred stock outstanding and currently has no plans to issue shares of preferred stock.

12. Stock-Based Compensation

On June 30, 2016, the Company established the 2016 Stock Option Plan (the "2016 Plan"). The 2016 Plan provides for grants of restricted stock units and stock options to executives, directors, consultants, advisors and key employees which allow option holders to purchase stock in Ping Identity Holding Corp. The Company has 6,800,000 shares of common stock reserved for issuance under the 2016 Plan. Following the Company's initial public offering ("IPO") on September 23, 2019, no additional awards have been granted under the 2016 Plan.

On September 23, 2019, the Company adopted the Ping Identity Holding Corp. Omnibus Incentive Plan (the "2019 Omnibus Incentive Plan"). The 2019 Omnibus Incentive Plan provides for grants of (i) stock options, (ii) stock appreciation rights, (iii) restricted shares, (iv) performance awards, (v) other share-based awards and (vi) other cash-based awards to eligible employees, non-employee directors and consultants of the Company. At December 31, 2021, the maximum number of shares of common stock available for issuance under the 2019 Omnibus Incentive Plan was 14,131,549 shares.

Stock-based compensation expense for all equity arrangements for the years ended December 31, 2021, 2020 and 2019 was as follows:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
Subscription cost of revenue	$ 1,735	$ 675	$ 141
Professional services and other cost of revenue	1,711	397	80
Sales and marketing	14,921	4,467	1,407
Research and development	20,702	5,294	1,364
General and administrative	16,731	5,791	3,340
Total	$ 55,800	$ 16,624	$ 6,332

Stock-based compensation expense recorded to research and development in the consolidated statements of operations excludes amounts that were capitalized in relation to internal-use software. Refer to Note 8 for additional details.

Long-Term Incentive Plan

In conjunction with the IPO, the Company amended its long-term incentive plan ("LTIP") which provided for cash compensation to certain employees upon vesting of the related awards, and thus, these awards were liability-classified. Grants under the plan were expected to vest following both (i) an IPO and registration of shares of common stock of Ping Identity Holding Corp. and (ii) Vista Equity Partners ("Vista") realized cash return on its investment in the Company equaling or exceeding $1.491 billion. In the first quarter of 2021, the Company offered employees with LTIP grants the opportunity to convert those awards into RSUs under the 2019 Omnibus Incentive Plan. Upon conversion, approximately half of the RSUs would solely be subject to time-based restrictions and would vest on April 1, 2021 and the remainder would be market-based PSUs subject to performance and market conditions consistent with those of the LTIP grants outlined above. All employees elected to convert their outstanding LTIP grants to RSUs, resulting in grants totaling 948,250 shares.

The conversion of the previously outstanding LTIP grants into time-based vesting RSUs resulted in the recognition of $12.8 million of stock-based compensation expense during the year ended December 31, 2021. Expense recognized related to the RSUs subject to performance and market conditions is discussed in more detail below.

Other Liability-Classified Awards

In conjunction with the Symphonic acquisition (Note 7), the Company issued liability-classified awards to certain individuals with a stated value of $0.4 million and $0.6 million that vest on December 31, 2021 and December 31, 2022, respectively. Half of these awards are subject to continuous service conditions and half are subject to continuous service and other performance conditions. The liability-classified awards will be settled with a variable number of shares of the Company's common stock at each vesting date based on the satisfaction of such conditions. On December 31, 2021, the Company settled $0.3 million of the first tranche of these liability-classified awards, net of $0.1 million of forfeitures due to employee terminations, resulting in the issuance of 14,664 shares. Upon vesting, the associated $0.3 million liability was reclassified from accrued compensation to additional paid-in capital on the consolidated balance sheets. As of December 31, 2021, $0.5 million of the second tranche of these liability-classified awards, net of $0.1 million of forfeitures due to employee terminations, remains.

Additionally, in conjunction with the ShoCard acquisition (Note 7), the Company issued liability-classified awards to certain individuals with a stated value of $3.1 million and $2.3 million that vest on the first and second anniversary of the acquisition, respectively, and are subject to continuous service and other conditions. The liability-classified awards will be settled with a variable number of shares of the Company's common stock at each anniversary date based on the satisfaction of such conditions. On March 2, 2021, the Company settled the first $3.1 million of these liability-classified awards, resulting in the grant and vest of 123,192 shares within the period. Upon issuance, the associated $3.1 million liability was reclassified from accrued compensation to common stock and additional paid-in capital on the consolidated balance sheets. As of December 31, 2021, $2.3 million of the second tranche of these liability-classified awards remains.

During the years ended December 31, 2021 and 2020, the Company recognized $2.7 million and $2.6 million of stock-based compensation expense, respectively, related to these awards.

Restricted Stock Units

The Company grants RSUs that generally vest over one to four years. Additionally, the Company granted time-based vesting RSUs converted from the previously outstanding cash-based LTIP grants and those issued in connection with the ShoCard and Symphonic acquisitions. The weighted-average grant-date fair value of RSUs granted during the years ended December 31, 2021, 2020 and 2019 was $23.65, $21.74 and $16.49, respectively. The total intrinsic value of RSUs vested during the years ended December 31, 2021, 2020 and 2019 was $30.4 million, $10.9 million and $0.7 million, respectively. As of December 31, 2021, there was $71.2 million of total unrecognized compensation, which will be recognized over the remaining weighted-average vesting period of 2.7 years using the straight-line method. A summary of the status of the Company's unvested RSUs and activity for the year ended December 31, 2021 is as follows:

	Shares		Weighted Average Grant Date Fair Value
Unvested as of December 31, 2020	2,504,148	$	19.84
Granted	2,652,923		23.04
Converted from LTIP grant	474,095		27.06
Forfeited/canceled	(367,646)		20.03
Vested	(1,313,398)		22.95
Unvested as of December 31, 2021	3,950,122	$	21.81

Performance Stock Units

Awards Subject to Performance and Market Conditions

As previously discussed, during the first quarter of 2021, the Company granted 948,250 restricted stock units in connection with the conversion of previously outstanding LTIP grants, with 474,155 of these restricted stock units subject to performance and market conditions. These market-based PSUs are expected to vest following both (i) registration of shares of common stock of Ping Identity Holdilng Corp. and (ii) Vista's realized cash return on its investment in the Company equaling or exceeding $1.491 billion. These awards were valued at the date of grant at $19.94 per share using a Monte Carlo simulation. In the second quarter of 2021, these market-based PSUs were determined to be probable of vesting. The Company recognized $8.4 million in stock-based compensation during the year ended December 31, 2021 related to these awards. As of December 31, 2021, there was $0.3 million of total unamortized compensation associated with these awards, which is expected to be recognized over the remaining estimated vesting period of 0.2 years.

Awards Subject to Performance Conditions

Additionally during the second quarter of 2021, the Company granted 208,806 PSUs under the 2019 Omnibus Incentive Plan, which will be earned only if the Company meets specific internal performance targets within a two-year period. The number of awards that ultimately vest could be 0% if the minimum hurdle is not achieved, or 50% or 100% of shares granted, depending on the Company's achievement of internal performance targets. The grant-date fair value of these PSUs was $21.93. As of December 31, 2021, there was $0.9 million of total unamortized compensation associated with these awards, which is expected to be recognized over the remaining estimated weighted-average vesting period of 0.5 years.

In the fourth quarter of 2021, the company granted 38,503 PSUs to employees who joined the Company upon the acquisition of SecuredTouch at a grant-date fair value of $28.33, which would be earned only if the Company met certain internal product specific performance targets by December 31, 2021. These awards did not vest and were forfeited as the performance target was not met during the quarter. Additionally, as previously discussed, certain of the liability-classified awards from the Symphonic acquisition met the criteria for vesting and are considered granted and vested within the period at a grant-date fair value of $22.88.

The total intrinsic value of the PSUs that vested during the year ended December 31, 2021 was $0.2 million. No PSUs vested during the years ended December 31, 2020 and 2019.

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

A summary of the status of the Company's unvested PSUs and activity for the year ended December 31, 2021 is as follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested as of December 31, 2020	—	$ —
Granted	728,805	20.98
Forfeited/canceled	(109,779)	23.44
Vested	(7,341)	22.88
Unvested as of December 31, 2021	611,685	$ 20.52

Stock Options

No options were granted during the years ended December 31, 2021, 2020 and 2019. All options have a 10-year contractual life. The total intrinsic value of options exercised during the years ended December 31, 2021, 2020 and 2019 was $8.1 million, $26.2 million and $2.0 million, respectively. A summary of the Company's stock option activity and related information for the year ended December 31, 2021 is as follows:

	Options	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding as of December 31, 2020	4,044,616	$ 9.49	6.5	$ 77,454
Granted	—	—		
Forfeited/canceled	(308,687)	9.39		
Exercised	(404,147)	8.93		8,087
Outstanding as of December 31, 2021	3,331,782	$ 9.57	5.5	$ 44,355
As of December 31, 2021:				
Vested and expected to vest	3,331,782	$ 9.57	5.5	$ 44,355
Vested and exercisable	1,656,849	$ 9.23	5.3	$ 22,610

Time-based options vest over four years with 25% vesting one year after grant and the remainder vesting ratably on a quarterly basis thereafter. In conjunction with the IPO, the Company modified the vesting conditions of these awards to provide for the options to vest and become exercisable following both (i) an IPO and registration of shares of common stock of Ping Identity Holding Corp. and (ii) Vista realizing a cash return on its investment in the Company equaling or exceeding $1.491 billion. In the second quarter of 2021, achievement of these conditions was determined to be probable. As of December 31, 2021, total unamortized compensation related to the time-based awards was $0.1 million. This expense will be recognized over the shorter of (i) the remaining explicit service term or (ii) the estimated period over which the performance condition is expected to be satisfied, with a remaining weighted-average vesting period of 0.2 years.

As originally granted, market-based options subject to performance and market conditions would vest upon the sale of the business subject to certain conditions specified in the 2016 Plan. In conjunction with the IPO, the Company modified the vesting conditions of the market-based options to provide for the options to vest and become exercisable following both (i) an IPO and registration of shares of common stock of Ping Identity Holding Corp. and (ii) Vista's realized cash return on its investment in the Company equaling or exceeding $1.491 billion. In accordance with ASC 718, the Company calculated the fair value of these options on the date of modification, noting an increase in the fair value from $5.1 million to $9.0 million on the date of modification, with the incremental increase in fair value representing additional unrecognized stock-based compensation expense. The following assumptions were used in calculating the fair value of the market-based options on the date of modification:

Risk-free rate	1.7 %
Expected term	2.3 years
Dividend yield	—
Volatility	47.0 %
Grant date fair value of awards granted during the period	$4.41

In the second quarter of 2021, these awards were determined to be probable of vesting. The Company recognized $6.4 million in stock-based compensation expense during the year ended December 31, 2021 related to these options. The remaining $0.1 million of total unamortized compensation expense is expected to be recognized over the remaining estimated vesting period of approximately 0.2 years.

13. Related Party Transactions

Vista is a U.S.-based investment firm that controlled the funds which previously owned a majority of the Company. During 2020, Vista sold a portion of its investment in the Company such that its funds no longer owned a majority of the Company as of December 31, 2020. During 2021, Vista sold an additional portion of its investment in the company such that its funds owned less than 40% of the Company. As a result, Vista's affiliates were no longer considered to be under common control with the Company and are not deemed related parties under ASC 850 as of December 31, 2021. However, Vista was deemed a related party in accordance with ASC 850 as it continues to be a principal owner of the Company. Outside of those identified below, the Company had no material transactions with Vista or its affiliates during the years ended December 31, 2021, 2020, and 2019.

As discussed in Note 9, on November 23, 2021, the Company entered into the 2021 Term Loan Facility with a consortium of lenders for a principal amount of $300.0 million. As of December 31, 2021, Vista held $6.5 million of the Company's outstanding term loan debt.

Additionally, during the year ended December 31, 2019, affiliates of Vista were paid $34.8 million in principal, and $1.7 million in interest on the portion of the 2018 Term Loan Facility held by them at that time.

14. Operating Leases

The Company leases office spaces and a data center under noncancelable lease terms. These leases have a remaining lease term of up to nine years, with a small number of office spaces that are month-to-month and accounted for as short-term leases in accordance with ASC 842-20-25-2. The Company has not recognized renewal options as part of its right-of-use assets and lease liabilities, as renewal options have not been reasonably certain of exercise or occurrence at lease commencement. Additionally, these leasing arrangements do not contain residual value guarantees, and there are no other restrictions or covenants in the contracts.

PING IDENTITY HOLDING CORP.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following tables present components of lease cost recorded in the consolidated statement of operations and supplemental information as of and for the years ended December 31, 2021 and 2020.

	Year Ended December 31, 2021	Year Ended December 31, 2020
	(in thousands)	
Lease costs:		
Operating lease costs	$ 3,991	$ 3,716
Short-term lease costs	158	407
Variable lease costs	2,214	2,060
Total lease costs	$ 6,363	$ 6,183

	Year Ended December 31, 2021	Year Ended December 31, 2020
	(in thousands)	
Other information:		
Cash paid for the amounts included in the measurement of lease liabilities within operating cash flows	$ 4,161	$ 4,005

	December 31, 2021	December 31, 2020
Weighted-average:		
Remaining lease term	4.3 years	5.1 years
Discount rate	3.8 %	3.7 %

As of December 31, 2021, the maturities of remaining lease payments included in the measurement of operating leases are as follows:

Year Ending December 31,	December 31, 2021
	(in thousands)
2022	$ 4,945
2023	4,849
2024	4,458
2025	3,379
2026	1,914
Thereafter	481
Total lease payments	20,026
Less: imputed interest	(1,556)
Total operating lease liability	$ 18,470

Rent expense under noncancelable operating leases as reported under ASC 840 totaled $3.6 million for the year ended 2019.

15. Commitments and Contingencies

Letters of Credit

As of December 31, 2021 and 2020, the Company had outstanding letters of credit under office lease agreements that totaled $0.3 million and $0.8 million, respectively, which primarily guaranteed early termination fees in the event of default. The Company collateralizes the letters of credit with restricted cash balances which were classified in other noncurrent assets at December 31, 2021 and 2020.

Purchase Commitments

In the ordinary course of business, the Company enters into various purchase commitments primarily related to third-party hosting and data services, IT operations and marketing events. Total noncancelable purchase commitments as of December 31, 2021 were approximately $189.2 million for periods through 2026.

Employee Benefit Plans

The Company established a defined contribution savings plan under Section 401(k) of the Internal Revenue Code (the "401(k) Plan") in which full-time U.S. employees are eligible to participate on the first day of the subsequent month of their date of employment. The 401(k) Plan covers substantially all employees who meet minimum age and service requirements and allows participants to defer a percentage of their annual compensation as defined in the 401(k) Plan. Employees in the United Kingdom and Canada are covered by defined contribution savings arrangements that are administered based upon the legislative and tax requirements of the respective countries.

The Company made contributions to its employee benefit plans of $3.6 million, $3.0 million and $2.7 million during the years ended December 31, 2021, 2020 and 2019, respectively.

Litigation

From time to time, the Company may be subject to various claims, charges and litigation. The Company records a liability when it is both probable that a liability will be incurred and the amount of the loss can be reasonably estimated. The Company maintains insurance to cover certain actions and believes that resolution of such claims, charges, or litigation will not have a material impact on the Company's financial position, results of operations, or liquidity. The Company has evaluated all pending litigation and determined that the probability of loss is remote, therefore no liabilities have been accrued.

16. Net Loss Per Share

The following table provides a reconciliation of the numerator and denominator used in the Company's calculation of basic and diluted net loss per share:

	Year Ended December 31,		
	2021	2020	2019
	(in thousands, except per share amounts)		
Numerator:			
Net loss	$ (64,391)	$ (11,891)	$ (1,504)
Denominator:			
Weighted-average common stock outstanding - basic and diluted	82,302	80,430	68,906
Net loss per share:			
Basic and diluted	$ (0.78)	$ (0.15)	$ (0.02)

PING IDENTITY HOLDING CORP.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The following shares were excluded from the computation of diluted net loss per share for the periods presented, as their effect would have been antidilutive:

	Year Ended December 31,		
	2021	2020	2019
		(in thousands)	
RSUs	3,950	2,504	1,416
Stock options	1,869	2,322	3,958
Other awards	112	206	—
Total antidilutive shares	5,931	5,032	5,374

17. Condensed Financial Information of Registrant (Parent Company Only)

Ping Identity Holding Corp.
(Parent Company Only)
Condensed Balance Sheets
(In thousands, except share amounts)

	December 31,	
	2021	2020
Assets		
Current assets:		
Cash and cash equivalents	$ —	$ —
Total current assets	—	—
Noncurrent assets:		
Investment in subsidiaries	741,405	721,110
Total noncurrent assets	741,405	721,110
Total assets	$ 741,405	$ 721,110
Liabilities and stockholders' equity		
Current liabilities:		
Current liabilities	$ —	$ —
Total current liabilities	—	—
Noncurrent liabilities:		
Liabilities, noncurrent	—	—
Total noncurrent liabilities	—	—
Total liabilities	—	—
Commitments and contingencies		
Stockholders' equity:		
Preferred stock; $0.001 par value; 50,000,000 shares authorized at December 31, 2021 and December 31, 2020; no shares issued or outstanding at December 31, 2021 or December 31, 2020	—	—
Common stock; $0.001 par value; 500,000,000 shares authorized at December 31, 2021 and December 31, 2020; 83,754,449 and 81,163,896 shares issued and outstanding at December 31, 2021 and December 31, 2020, respectively	84	81
Additional paid-in capital	824,455	739,051
Accumulated other comprehensive income	652	1,373
Accumulated deficit	(83,786)	(19,395)
Total stockholders' equity	741,405	721,110
Total liabilities and stockholders' equity	$ 741,405	$ 721,110

PING IDENTITY HOLDING CORP.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Ping Identity Holding Corp.
(Parent Company Only)
Condensed Statements of Operations
(In thousands)

	Year Ended December 31,		
	2021	2020	2019
Revenue	$ —	$ —	$ —
Operating expenses	—	—	—
Income from operations	—	—	—
Other income (expense), net	—	—	—
Income before income taxes and equity in net income of subsidiaries	—	—	—
Benefit for income taxes	—	—	—
Equity in net loss of subsidiaries	(64,391)	(11,891)	(1,504)
Net loss	$ (64,391)	$ (11,891)	$ (1,504)

Ping Identity Holding Corp.
(Parent Company Only)
Condensed Statements of Comprehensive Loss
(In thousands)

	Year Ended December 31,		
	2021	2020	2019
Net loss	$ (64,391)	$ (11,891)	$ (1,504)
Other comprehensive income (loss), net of tax:			
Subsidiaries' other comprehensive income (loss)	(721)	1,772	388
Total other comprehensive income (loss)	(721)	1,772	388
Comprehensive loss	$ (65,112)	$ (10,119)	$ (1,116)

Basis of Presentation

Parent is a holding company with no material operations of its own that conducts substantially all of its activities through its subsidiaries. Parent has no direct outstanding debt obligations. However, Ping Identity Corporation, a wholly owned subsidiary, is limited in its ability to declare dividends or make any payment on account of its capital stock to, directly or indirectly, fund a dividend or other distribution to the Parent as borrower under its 2021 Credit Facilities. For a discussion of the 2021 Credit Facilities and their associated dividend restrictions, refer to Note 9.

These condensed financial statements have been presented on a “parent-only” basis. Under a parent-only presentation, the Parent’s investments in subsidiaries are presented under the equity method of accounting. A condensed statement of cash flows was not presented because the Parent had no material operating, investing, or financing cash flow activities for the years ended December 31, 2021, 2020 or 2019. Certain information and footnote disclosures normally included in financial statements prepared in accordance with GAAP have been condensed or omitted. As such, these parent-only statements should be read in conjunction with the accompanying notes to consolidated financial statements.

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

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this Annual Report on Form 10-K. Based on such evaluation, our principal executive officer and principal financial officer have concluded that as of December 31, 2021, our disclosure controls and procedures were effective at the reasonable assurance level. Our disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to management, including the chief executive officer and chief financial officer, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with generally accepted accounting principles. Our management, including our principal executive officer and principal financial officer, conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2021 based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. Based on the results of this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2021.

The effectiveness of our internal control over financial reporting as of December 31, 2021 has been audited by our independent registered public accounting firm, as stated in their attestation report which appears in Part II, Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control

There have been no changes in internal control over financial reporting during the quarter ended December 31, 2021 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Item 9B. Other Information

Not applicable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable

PART III.

Item 10. Directors, Executive Officers and Corporate Governance

Executive Officers and Directors

The information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2021 annual meeting of stockholders (the "Proxy Statement"), which is expected to be filed no later than 120 days after the end of our fiscal year ended December 31, 2021, and is incorporated in this report by reference.

Code of Ethics

On September 23, 2019 we adopted, and on November 3, 2020 we most recently amended, our Code of Ethics, which applies to all employees, including our principal executive officer, our principal financial officer, our principal accounting officer and all other executive officers, and applies to all directors. The Code of Ethics is available on our website at investor.pingidentity.com under "Governance." The Audit Committee of our Board is responsible for enforcing compliance with the Code of Ethics and must approve any waivers of the Code of Ethics for executive officers and directors. Our Chief Legal Officer must approve waivers of the Code of Ethics for all other persons. We expect that any amendments to the Code of Ethics, or any waivers of its requirements, will be disclosed on our website or via other disclosure measures permitted under applicable law and/or the NYSE listing standards, as required by applicable law or the NYSE listing standards.

Item 11. Executive Compensation

The information required by this item will be set forth in the Proxy Statement, which is expected to be filed no later than 120 days after the end of our fiscal year ended December 31, 2021, and is incorporated in this report 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, which is expected to be filed no later than 120 days after the end of our fiscal year ended December 31, 2021, and is incorporated in this report 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, which is expected to be filed no later than 120 days after the end of our fiscal year ended December 31, 2021, and is incorporated in this report by reference.

Item 14. Principal Accounting Fees and Services

The information required by this item will be set forth in the Proxy Statement, which is expected to be filed no later than 120 days after the end of our fiscal year ended December 31, 2021, and is incorporated in this report by reference.

PART IV.

Item 15. Exhibits and Financial Statement Schedules

Documents filed as part of this Annual Report on Form 10-K are as follows:

1. Consolidated Financial Statements

   Our Consolidated Financial Statements are listed in the "Index to Consolidated Financial Statements" under Part II, Item 8 of this Annual Report on Form 10-K.

2. Financial Statement Schedules

   Financial statement schedules have been omitted because they are not required, not applicable, not present in amounts sufficient to require submission of the schedule, or the required information is shown in the Consolidated Financial Statements or notes thereto.

3. Exhibits

   The following documents are incorporated by reference or are filed with this Annual Report on Form 10-K, in each case as indicated therein.

Exhibit Index

Exhibit Number	Exhibit Description
3.1	Third Amended and Restated Certificate of Incorporation of Ping Identity Holding Corp., dated September 23, 2019 (incorporated by reference to Exhibit 3.1 to the Company's Current Report filed with the SEC on Form 8-K on September 24, 2019).
3.2	Amended and Restated Bylaws of Ping Identity Holding Corp., dated September 23, 2019 (incorporated by reference to Exhibit 3.2 to the Company's Current Report filed with the SEC on Form 8-K on September 24, 2019).
4.1	Registration Rights Agreement, dated September 23, 2019, by and among the Company and the other signatories party thereto (incorporated by reference to Exhibit 4.1 to the Company's Current Report filed with the SEC on Form 8-K on September 24, 2019).
4.2	Description of the Company's Common Stock (incorporated by reference to Exhibit 4.2 to the Company's Annual Report filed with the SEC on Form 10-K on March 4, 2020).
10.1	Director Nomination Agreement, dated as of September 23, 2019, by and among the Company and the other signatories party thereto (incorporated by reference to Exhibit 10.1 to the Company's Current Report filed with the SEC on Form 8-K on September 24, 2019).
10.2+	Ping Identity Holding Corp. Omnibus Incentive Plan, as amended May 5, 2020 (incorporated by reference to Exhibit 10.2 to the Company's Registration Statement filed with the SEC on Form S-1 on May 11, 2020).
10.3+	Form of Option Award Agreement under Omnibus Incentive Plan (incorporated by reference to Exhibit 10.4 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.4+	Form of Restricted Shares Award Agreement under Omnibus Incentive Plan (incorporated by reference to Exhibit 10.5 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.5+	Form of SAR Award Agreement under Omnibus Incentive Plan (incorporated by reference to Exhibit 10.6 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.6+	Form of RSU Award Agreement under Omnibus Incentive Plan (incorporated by reference to Exhibit 10.7 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.7	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.8 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.8	Lease Agreement, dated as of January 21, 2011, by and between FSP 1001 17th Street LLC (as successor in interest to MG-1005, LLC), as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.10 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).

10.9	First Amendment to Lease Agreement, dated as of November 12, 2015, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.11 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.10	Second Amendment to Lease Agreement, dated as of December 6, 2017, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.12 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.11	Third Amendment to Lease Agreement, dated as of August 21, 2018, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.13 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.12	Fourth Amendment to Lease Agreement, dated as of February 1, 2019, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant. (incorporated by reference to Exhibit 10.14 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.13	Fifth Amendment to Lease Agreement, dated as of March 18, 2019, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.15 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.14	Sixth Amendment to Lease Agreement, dated as of July 9, 2019, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.14 to the Company's Annual Report filed with the SEC on Form 10-K on March 4, 2020).
10.15	Seventh Amendment to Lease Agreement, dated as of December 31, 2019, by and between FSP 1001 17th Street LLC, as landlord and Ping Identity Corporation, as tenant (incorporated by reference to Exhibit 10.15 to the Company's Annual Report filed with the SEC on Form 10-K on March 4, 2020).
10.16+	Letter Agreement, dated as of June 20, 2016, by and between Andre Durand and Ping Identity Corporation (incorporated by reference to Exhibit 10.16 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.17+	Letter Agreement, dated as of November 2, 2018, by and between B. Kristian Nagel and Ping Identity Corporation (incorporated by reference to Exhibit 10.17 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.18+	Letter Agreement, dated as of October 22, 2018, by and between Bernard Harguindeguy and Ping Identity Corporation (incorporated by reference to Exhibit 10.18 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.19+	Letter Agreement, dated as of June 24, 2016, by and between Lauren Romer and Ping Identity Corporation (incorporated by reference to Exhibit 10.19 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).

10.20+	Letter Agreement, dated as of July 7, 2016, by and between Raj Dani and Ping Identity Corporation. (incorporated by reference to Exhibit 10.20 to the Company's Registration Statement filed with the SEC on Form S-1 on August 23, 2019).
10.21+	Ping Identity Holding Corp. 2016 Stock Option Plan, as amended (incorporated by reference to Exhibit 10.21 to the Company's Registration Statement filed with the SEC on Form S-1/A on September 9, 2019).
10.22+	Form of Stock Option Agreement under 2016 Stock Option Plan (incorporated by reference to Exhibit 10.22 to the Company's Registration Statement filed with the SEC on Form S-1/A on September 9, 2019).
10.23+	Form of Non-Employee Outside Director Restricted Stock Unit Agreement (incorporated by reference to Exhibit 10.23 to the Company's Registration Statement filed with the SEC on Form S-1/A on September 9, 2019).
10.24+	Form of Restricted Stock Unit Agreement (incorporated by reference to Exhibit 10.24 to the Company's Registration Statement filed with the SEC on Form S-1/A on September 9, 2019).
10.25	Credit Agreement, dated as of December 12, 2019, by and among Roaring Fork Intermediate, LLC, Ping Identity Corporation, the other loan parties party thereto from time to time, the lenders and issuing banks party thereto from time to time, Bank of America, N.A., as administrative agent, and BOFA Securities Inc. and RBC Capital Markets as joint lead arrangers (incorporated by reference to Exhibit 10.1 to the Company's Current Report filed with the SEC on Form 8-K on December 13, 2019).
10.26	First Amendment to the Credit Agreement, dated August 11, 2020, by and among Roaring Fork Intermediate, LLC, Ping Identity Corporation, the other loan parties party thereto, each of the lenders party thereto, and Bank of America, N.A., as administrative agent for the lenders, filed herewith (incorporated by reference to the Company's Quarterly Report filed with the SEC on Form 10-Q on August 12, 2020).
10.27	Second Amendment to Credit Agreement, dated as of April 20, 2021, by and among Roaring Fork Intermediate, LLC, Ping Identity Corporation, the other Loan Parties party hereto, each of the lenders, and Bank of America, N.A., as administrative agent for the lenders (incorporated by reference to the Company's Quarterly Report filed with the SEC on Form 10-Q on May 5, 2021).
10.28	Credit Agreement, dated as of November 23, 2021, among Ping Identity Corporation, a Delaware corporation, Roaring Fork Intermediate, LLC, Delaware limited liability company, as a guarantor, the other guarantors party thereto, the lenders party thereto, and Bank of America, N.A., as Administrative Agent and Collateral Agent. (incorporated by reference to Exhibit 10.1 to the Company's Current Report filed with the SEC on Form 8-K on November 30, 2021).
10.29	Nonqualified Deferred Compensation Plan for Non-Employee Directors, dated as of November 1, 2021, filed herewith.
21.1	List of subsidiaries of Ping Identity Holding Corp., filed herewith.
23.1	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm, filed herewith.

31.1	Certification of the Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
31.2	Certification of the Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.
32.1*	Certification of the Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, filed herewith.
32.2*	Certification of the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, filed herewith.
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104	Cover Page Interactive Data File (formatted as inline XBRL with applicable taxonomy extension information contained in Exhibits 101.INS, 101.SCH, 101.CAL, 101.DEF, 101.LAB, and 101.PRE).

+Indicates a management contract or compensatory plan or agreement.

*The certifications furnished in Exhibit 32.1 and Exhibit 32.2 hereto are deemed to accompany this Annual Report on Form 10-K and will not be deemed “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent that the registrant specifically incorporates it by reference.

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.

Signature	Title	Date
/s/Andre Durand Andre Durand	Chief Executive Officer and Director *(Principal Executive Officer)*	February 24, 2022

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

Signature	Title	Date
/s/Andre Durand Andre Durand	Chief Executive Officer and Director *(Principal Executive Officer)*	February 24, 2022
/s/Raj Dani Raj Dani	Chief Financial Officer *(Principal Financial and Accounting Officer)*	February 24, 2022
/s/Rod Aliabadi Rod Aliabadi	Director	February 24, 2022
/s/David A. Breach David A. Breach	Director	February 24, 2022
/s/Michael Fosnaugh Michael Fosnaugh	Director	February 24, 2022
/s/Diane Gherson Diane Gherson	Director	February 24, 2022
/s/Lisa Hook Lisa Hook	Director	February 24, 2022
/s/Paul E. Martin Paul E. Martin	Director	February 24, 2022
/s/John McCormack John McCormack	Director	February 24, 2022
/s/Yancey L. Spruill Yancey L. Spruill	Director	February 24, 2022
/s/Martin Taylor Martin Taylor	Director	February 24, 2022

Exhibit 10.29

PING IDENTITY HOLDING CORP.
NONQUALIFIED DEFERRED COMPENSATION PLAN FOR NON-EMPLOYEE DIRECTORS

1. Effective Date. The effective date of the Plan is November 1, 2021.

2. Definitions.

"Account" means a hypothetical bookkeeping account established in the name of each Participant and maintained by the Company to reflect the Participant's interests under the Plan.

"Beneficiary" means any person or entity, designated in accordance with Section 10.7, entitled to receive benefits that are payable upon or after the Participant's death pursuant to the terms of the Plan.

"Board" means the Board of Directors of the Company.

"Change in Control" means the occurrence of any of the following events: (i) a change in the ownership of the Company, (ii) a change in the effective control of the Company, or (iii) a change in the ownership of a substantial portion of the assets of the Company, in each case, as such term is defined in Treas. Reg. Section 1.409A-3(i)(5).

"Code" means the U.S. Internal Revenue Code of 1986.

"Company" means Ping Identity Holding Corp., or any successor thereto.

"Common Stock" means the shares of common stock, $0.001 par value per share, of the Company.

"Deferral Election" means an election by an Eligible Director to defer Fees and/or Restricted Stock Units.

"Deferred Stock Unit" means a bookkeeping entry under the Plan that tracks, on a one-for-one basis, the value of a Restricted Stock Unit. A Deferred Stock Unit will be credited to the Participant's Account as a result of the deferral of a Restricted Stock Unit in accordance with the terms of the Incentive Plan and the Plan. Deferred Stock Units will be payable in shares of Common Stock (or, if determined by the Board, in cash) and such payment will constitute full payment and settlement of the corresponding Restricted Stock Units.

"Election Notice" means the notice established by the Board for making Deferral Elections under the Plan.

"Election Period" means the period established by the Board and set forth in the Election Notice with respect to each Plan Year during which Deferral Elections must be made in accordance with the requirements of Section 409A; provided that the Election Period will end no later than the last day of the Plan Year immediately preceding the Plan Year to which the Deferral Election relates; provided, however, that the Election Period for newly Eligible Directors will end no later than 30 days after the Eligible Director first becomes eligible to participate in the Plan and will apply only with respect to Fees and Restricted Stock Units earned after the date of the Deferral Election.

"Eligible Director" means a member of the Board who is not an active employee of the Company or an affiliate and who is designated by the Board as eligible to participate in the Plan.

"ERISA" means the Employee Retirement Income Security Act of 1974.

"Fees" means the cash compensation that would be paid to the Participant as an Eligible Director for the Plan Year before reductions for deferrals under the Plan.

"Incentive Plan" means the Company's Omnibus Incentive Plan.

"Participant" means an Eligible Director who elects to participate in the Plan by filing an Election Notice in accordance with Section 4, as well as any former Eligible Director who remains entitled to a benefit under the Plan.

"Payment Event" means a date or event specified by the Participant in his or her Election Notice for the payment (or, in the case of installments, commencement of payment) of all or a portion of the Participant's Account; provided that if no such date or event is specified, then the Payment Event will be the Participant's Separation from Service.

"Plan" means this Ping Identity Holding Corp. Nonqualified Deferred Compensation Plan for Non-Employee Directors.

"Plan Year" means the calendar year.

"Restricted Stock Unit" means a restricted stock unit under the Incentive Plan.

"Section 409A" means Section 409A of the Code.

"Separation from Service" has the meaning set forth in Section 409A and Treas. Reg. Section 1.409A-1(h), including the default presumptions thereunder.

3. Eligibility; Participation.

3.1 Election to Participate. An Eligible Director may become a Participant in the Plan by making a Deferral Election in accordance with Section 4.

3.2 Cessation of Participation. If the Participant ceases to be an Eligible Director for a Plan Year, then the Participant's Deferral Elections will no longer be effective. Each Participant (or the Participant's Beneficiaries, as applicable) will remain a Participant in the Plan until the Participant's Account has been paid in full pursuant to the terms of the Plan and the Participant's Election Notice(s).

4. Election Procedures. An Eligible Director may elect to defer receipt of the Participant's Fees and/or Restricted Stock Units for any Plan Year by completing an Election Notice and filing it with the Board during the Election Period. Subject to the terms of the Plan, the Election Notice must specify (i) (A) the amount of Fees to be deferred and/or (B) the amount of Restricted Stock Units to be deferred (rounded to the nearest whole number), (ii) the Payment Event, and (iii) the form of payment (lump sum or annual installments).

5. Accounts.

5.1 Establishment. The Company will establish and maintain an Account for each Participant.

5.2 Earnings and Losses. Each Account will be adjusted for earnings or losses, as applicable, as set forth in Section 5.3 and Section 5.4. The amount paid to the Participant on the payment date will be determined as of the applicable payment date.

5.3 Deferred Stock Units. The value of each Deferred Stock Unit in the Participant's Account will be equal to the value of the corresponding Restricted Stock Unit. For the avoidance of doubt, payment of Deferred Stock Units under the Plan will constitute full payment and settlement of the corresponding Restricted Stock Units.

5.4 Deferred Fees. Fees deferred under the Plan will be credited with a notional rate of return determined by the Board and set forth in the applicable Election Notice. The Board may change such notional rate of return on a prospective basis at any time.

5.5 Nature of Accounts. Accounts are not actually invested in any investment vehicle and Participants do not have any real or beneficial ownership in any investment vehicle in connection with their Accounts. The Participant's Account is solely a device for the measurement and determination of the amounts to be paid to the Participant pursuant to the Plan and will not constitute or be treated as a trust fund of any kind.

5.6 Timing of Credits.

(a) Deferred Fees. The Board will credit to the Participant's Account any deferred Fees at the time such amounts would otherwise have been paid to the Participant but for the Deferral Election.

(b) Deferred Stock Units. The Board will credit Deferred Stock Units to the Participant's Account as of the grant date of the corresponding Restricted Stock Units.

5.7 Statement of Accounts. Upon the Participant's request, the Board will provide or make available to the Participant a statement setting forth the balance of the Participant's Account.

6. Payment of Participant Accounts.

6.1 In General. The Participant's Account will be paid (or commence, in the case of installments) upon the Payment Event.

6.2 Timing of Payments. Except as otherwise provided in this Section 6, payments will be made or commence within 90 days following the Payment Event, subject to any applicable restrictions under Section 409A.

6.3 Form of Payment. Each Participant must specify in the Participant's Election Notice the form of payment (lump sum or installments) for amounts in the Participant's Account that are covered by the election; provided that, if the Participant elects to have amounts paid in installments, the Participant must select from among the permissible installment schedules selected by the Board and set forth in the Election Notice. In the absence of a valid election with respect to form of payment, amounts will be paid in a single lump sum.

6.4 Medium of Payment. Any payment from the Participant's Account will be made in cash or Shares of Common Stock, as applicable.

7. Acceleration Events. Notwithstanding anything in the Plan to the contrary, the Board may accelerate payment of all or a portion of the Participant's Account upon the occurrence of any of the permissible acceleration events under Section 409A, in all events in accordance with Section 409A.

8. Plan Administration.

8.1 Administration by Board. The Board will administer the Plan, with the authority to:

(a) construe and interpret the Plan and apply its provisions;

(b) promulgate, amend, and rescind rules relating to the administration of the Plan;

(c) authorize any person to execute, on behalf of the Company, any instrument required to carry out the purposes of the Plan;

(d) determine minimum or maximum amounts that Participants may elect to defer;

(e) designate, subject to the terms of the Plan, who will be Eligible Directors;

(f) calculate deemed investment earnings and losses;

(g) interpret, administer, reconcile any inconsistency in, correct any defect in, and/or supply any omission in the Plan and any instrument, Election Notice, or agreement relating to the Plan;

(h) exercise discretion to make any and all other determinations that it determines to be necessary or advisable for the administration of the Plan;

(i) delegate its duties hereunder to the extent allowable under applicable law; and

(j) take any other action that the Board determines necessary or advisable for the proper administration of the Plan.

8.2 Non-Uniform Treatment. The Board's determinations under the Plan need not be uniform and any such determinations may be made selectively among Participants.

8.3 Board Decisions Final. Subject to Section 11, all decisions made by the Board pursuant to the provisions of the Plan will be in the Board's sole discretion, and will be final and binding on the Company and the Participants unless such decisions are determined by a court having jurisdiction to be arbitrary and capricious.

8.4 Indemnification. No member of the Board or any designee will be liable for any action, failure to act, determination, or interpretation made in good faith with respect to the Plan.

9. Amendment and Termination. The Board may, at any time, alter, amend, modify, suspend, or terminate the Plan or any portion hereof; provided, however, that no such alteration, amendment, modification, suspension, or termination may, without the consent of the affected Participant, adversely affect such Participant's rights with respect to amounts credited to or accrued in the Participant's Account.

10. Miscellaneous.

10.1 No Service Rights. Nothing in the Plan will confer upon any Participant any right to continue to serve the Company or any affiliate or interfere in any way with the right of the Company or any affiliate to terminate the Participant's service at any time with or without notice and with or without cause.

10.2 Tax Withholding. The Company and its affiliates will have the right to deduct from any amounts otherwise payable under the Plan any taxes required to be withheld.

10.3 Governing Law. The Plan will be administered, construed, and governed in all respects under and by the laws of the State of Delaware, without reference to the principles of conflicts of law (except and to the extent preempted by applicable Federal law).

10.4 Section 409A. The Company intends that the Plan comply with the requirements of Section 409A, and the Plan will be operated and interpreted consistent with that intent. If the Company determines that the Participant is a "specified employee," as such term is defined under Section 409A, then, solely to the extent necessary to avoid the incurrence of adverse tax consequences under Section 409A, the timing of the applicable payments will be delayed until the first payroll date after the six-month anniversary of the Participant's Separation from Service, and the Company will (a) pay to the Participant a lump sum amount equal to the sum of the payments that the Participant would otherwise have received during such six-month period had no such delay been imposed and (b) commence paying the balance of the payments in accordance with the applicable payment schedule set forth in the Plan. For purposes of Section 409A, each installment payment provided under the Plan will be treated as a separate payment. The Company makes no representations that the payments and benefits provided under the Plan comply with Section 409A and in no event will the Company be liable for all or any portion of any taxes, penalties, interest, or other expenses that may be incurred by the Participant on account of noncompliance with Section 409A.

10.5 General Assets/Trust. All amounts provided under the Plan will be paid from the general assets of the Company and no separate fund will be established to secure payment.

10.6 No Warranties. Neither the Company nor the Board warrants or represents that the value of any Participant's Account will increase. Each Participant assumes the risk in connection with the deemed investment of the Participant's Account.

10.7 Beneficiary Designation. Each Participant under the Plan may from time to time name any Beneficiary or Beneficiaries to receive the Participant's interest in the Plan in the event of the Participant's death. Each designation will revoke all prior designations by the same Participant, will be in a form prescribed by the Board, and will be effective only when filed by the Participant in writing with the Company during the Participant's lifetime. If the Participant fails to designate a Beneficiary, the Participant's designated Beneficiary will be deemed to be the Participant's estate.

10.8 No Assignment. Neither the Participant nor any other person will have any right to sell, assign, transfer, pledge, anticipate or otherwise encumber, transfer, hypothecate, or convey any amounts payable under the Plan prior to the date that such amounts are paid (except for the designation of Beneficiaries under Section 10.7).

10.9 Expenses. The costs of administering the Plan will be borne by the Company.

10.10 Severability. If any provision of the Plan is held to be invalid, illegal, or unenforceable, whether in whole or in part, such provision will be deemed modified to the extent of such invalidity, illegality, or unenforceability, and the remaining provisions will not be affected.

11. Claims and Appeals Procedures. The Board may establish claims and appeals procedures for the Plan, in all events in accordance with all applicable laws, including ERISA, which procedures (as from time to time amended and in effect) will be deemed a part of the Plan and incorporated herein.

12. Certain Definitional Provisions. Unless otherwise expressly provided, for purposes of the Plan, the following rules of interpretation apply: (i) the term "dollars" and character "$" mean United States dollars; (ii) the terms defined in the singular have a comparable meaning when used in the plural, and vice versa;

(iii) the words "hereof," "herein," "hereto," "hereunder," "hereinafter," and words of similar import, when used in the Plan, refer to the Plan as a whole and not to any particular provision of the Plan, unless the context otherwise requires; (iv) the term "including" means "including, without limitation," and the words "include" and "includes" have corresponding meanings and such words will not be construed to limit any general statement that they follow to the specific or similar items or matters immediately following them; and (v) the term "or" is not exclusive, unless the context otherwise requires.

13. Interpretive Matters. Unless the context otherwise requires, references herein (i) to sections mean the sections of the Plan; (ii) to an agreement, instrument, or other document include such agreement, instrument, or other document as amended, supplemented, or otherwise modified from time to time to the extent permitted by the provisions thereof; (iii) to a statute, rule, or regulation include such statute, rule, or regulation as amended from time to time and include any predecessor or successor statute, rule, or regulation thereto and any statute, rule, or regulation promulgated thereunder; (iv) to a particular person or entity include such person's or entity's successors and assigns to the extent not prohibited by the Plan; (v) to a number of days refer to calendar days unless business days are specified, except, unless otherwise specified, whenever any action must be taken on or by a day that is not a business day, then such action may be validly taken on or by the next day that is a business day; and (vi) to gender include all genders and the neuter. The division of the Plan into sections and other subdivisions and the insertion of headings is for convenience of reading only and will not affect or be utilized in construing or interpreting the Plan.

Exhibit 21.1

Subsidiaries of Ping Identity Holding Corp.

Company Name	Jurisdiction of Formation
Roaring Fork Intermediate Holding, Inc.	Delaware
Roaring Fork Intermediate, LLC	Delaware
Ping Identity Corporation	Delaware
Elastic Beam, LLC	Delaware
UnboundID, LLC	Delaware
Ping Identity International, Inc.	Delaware
ShoCard, LLC	Delaware
Singular Key, Inc.	Delaware
SecuredTouch. Inc.	Delaware
Elastic Beam India Private Limited	India
Ping Identity UK Limited	United Kingdom
Symphonic Software Limited	United Kingdom
Ping Identity Canada Inc.	Canada
Ping Identity France, SAS	France
Ping Identity Australia Pty Limited	Australia
Ping Identity Australia Pty Limited – New Zealand Branch	New Zealand
Ping Identity Israel, Ltd.	Israel
SecuredTouch, Ltd.	Israel
Ping Identity Singapore Pte. Ltd.	Singapore
Ping Identity UK Ltd. Branch - Netherlands	Netherlands

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-257076) and Form S-8 (No. 333-233906) of Ping Identity Holding Corp. of our report dated February 24, 2022 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Denver, Colorado
February 24, 2022

Exhibit 31.1

Certification Pursuant to Section 302 of Sarbanes-Oxley Act of 2002

I, Andre Durand, certify that:

1. I have reviewed this Annual Report on Form 10-K of Ping Identity Holding Corp.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 24, 2022

/s/ Andre Durand

Andre Durand

Director and Chief Executive Officer

Exhibit 31.2

Certification Pursuant to Section 302 of Sarbanes-Oxley Act of 2002

I, Raj Dani, certify that:

1. I have reviewed this Annual Report on Form 10-K of Ping Identity Holding Corp.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 24, 2022

/s/ Raj Dani

Raj Dani

Chief Financial Officer

Exhibit 32.1

Certification of the Chief Executive Officer

Pursuant to Rule 18 U.S.C. Section 1350

In connection with the Annual Report on Form 10-K of Ping Identity Holding Corp. (the “Company”) for the year ended December 31, 2021, as filed with the U.S. Securities and Exchange Commission (the “Report”), I, Andre Durand, Chief Executive Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

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

Date: February 24, 2022

/s/ Andre Durand
Andre Durand
Director and Chief Executive Officer

Exhibit 32.2

Certification of the Chief Financial Officer

Pursuant to Rule 18 U.S.C. Section 1350

In connection with the Annual Report on Form 10-K of Ping Identity Holding Corp. (the “Company”) for the year ended December 31, 2021, as filed with the U.S. Securities and Exchange Commission (the “Report”), I, Raj Dani, Chief Financial Officer of the Company, hereby certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

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

Date: February 24, 2022

/s/ Raj Dani

Raj Dani

Chief Financial Officer