
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

WASHINGTON, DC 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2020

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: 001-38098

APPIAN CORPORATION

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or other jurisdiction of incorporation or organization)

7950 Jones Branch Drive
McLean, VA

(Address of principal executive offices)

54-1956084

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

22102

(Zip Code)

Registrant's telephone number, including area code: (703) 442-8844

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

<u>Title of each class</u>	<u>Trading symbol</u>	<u>Name of each exchange on which registered</u>
Class A Common Stock	APPN	The Nasdaq Stock Market LLC

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
Non-accelerated filer

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

As of June 30, 2020, the aggregate market value of the registrant's voting Class A common stock and Class B common stock held by non-affiliates of the registrant was \$1,309,078,699 and \$123,649,286, respectively, based on a closing price of \$51.25 per share of the registrant's Class A common stock as reported on The Nasdaq Global Market on June 30, 2020. For purposes of this computation, all officers, directors, and 10% beneficial owners of the registrant are deemed to be affiliates. Such determination should not be deemed to be an admission that such officers, directors, or 10% beneficial owners are, in fact, affiliates of the registrant.

As of February 15, 2021, there were 38,988,594 shares of the registrant's Class A common stock and 31,707,466 shares of the registrant's Class B common stock, each with a par value of \$0.0001 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement for its 2021 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission pursuant to Regulation 14A not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K are incorporated by reference in Part III, Items 10-14 of this Annual Report on Form 10-K.

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PART I

Forward-Looking Statements

This Annual Report on Form 10-K, including the sections entitled "Business," "Risk Factors," and "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements that involve known and unknown risks, uncertainties, and other factors that may cause our actual results, levels of activity, performance, or achievements to be materially different from the information expressed or implied by these forward-looking statements. Statements that are not purely historical are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. In some cases, forward-looking statements can be identified by the words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "might," "objective," "ongoing," "plan," "predict," "project," "potential," "should," "will," or "would," or the negative of these terms, or other comparable terminology intended to identify statements about the future. These forward-looking statements include, but are not limited to, statements concerning the following:

- Our market opportunity and the expansion of our core software markets in general;
- The effects of increased competition as well as innovations by new and existing competitors in our market;
- Our ability to adapt to technological change and effectively enhance, innovate, and scale our platform and professional services;
- Our ability to effectively manage or sustain our growth and to achieve profitability;
- Potential acquisitions and integration of complementary businesses and technologies;
- Our ability to maintain, or strengthen awareness of, our brand;
- Perceived or actual problems with the integrity, reliability, quality, or compatibility of our platform, including unscheduled downtime or outages;
- Uncertain impacts COVID-19 may have on our business, financial condition, results of operations, and changes in the overall level of spending and volatility in the global economy;
- Future revenue, hiring plans, expenses, capital expenditures, capital requirements, and stock performance;
- Our ability to attract and retain qualified employees and key personnel and further expand our overall headcount;
- The expected benefits to our clients and potential clients of our product and service offerings;
- The timing of revenue recognition under license and cloud arrangements;
- Our expectation that subscriptions revenue as a percentage of total revenue will continue to increase;
- Our backlog of license, maintenance, cloud, and services agreements and the timing of future cash receipts from committed license and cloud arrangements;
- Our expectation that cost of revenue, sales and marketing expenses, and general and administrative expenses will continue to increase in absolute dollar values;
- Our expectations regarding the impact of recent accounting pronouncements on our consolidated financial statements;
- Our ability to stay abreast of new or modified laws and regulations that currently apply or become applicable to our business both in the United States and internationally;
- Our ability to maintain, protect, and enhance our intellectual property; and
- Costs associated with defending intellectual property infringement and other claims.

These statements represent the beliefs and assumptions of our management based on information currently available to us. Such forward-looking statements are subject to risks, uncertainties, and other important factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section titled "Risk Factors" included under Part I, Item 1A. Furthermore, such forward-looking statements speak only as of the

date of this report. Except as required by law, we undertake no obligation to update any forward-looking statements to reflect events or circumstances that occur after the date of this report.

Risk Factors Summary

The risk factors summarized below could materially harm our business, operating results, and/or financial condition, impair our future prospects, and/or cause the price of our common stock to decline. These risks are discussed more fully in the section titled "Risk Factors". Material risks that may affect our business, financial condition, results of operations, and trading price of our Class A common stock include, but are not necessarily limited to, the following:

- Our recent growth may not be indicative of our future growth and, if we continue to grow, we may not be able to manage our growth effectively.
- If we are unable to sustain our revenue growth rate, we may not achieve or maintain profitability in the future.
- We may not be able to scale our business quickly enough to meet our customers' growing needs, and if we are not able to grow efficiently, our operating results could be harmed.
- We are dependent on a single product, and the lack of continued market acceptance of our platform could cause our operating results to suffer.
- Market adoption of low-code platforms to drive digital transformation is new and unproven and may not grow as we expect, which may harm our business and prospects.
- We currently face significant competition.
- If our security measures are breached or unauthorized access to our platform or customer data is otherwise obtained, our platform may be perceived as not being secure, customers may reduce the use of or stop using our platform, and we may incur significant liabilities.
- We derive a material portion of our revenue from a limited number of customers, and the loss of one or more of these customers could adversely impact our business, results of operations, and financial condition.
- We rely on the performance of highly skilled personnel, including senior management and our engineering, professional services, sales, and technology professionals.
- If we do not continue to innovate and provide a platform that is useful to our customers, we may not remain competitive, and our revenue and operating results could suffer.
- We are substantially dependent upon customer renewals, the addition of new customers, and the continued growth of our subscriptions revenue.
- Because we generally recognize revenue from cloud subscriptions ratably over the term of the subscription agreement, near term changes in sales may not be reflected immediately in our operating results.
- We rely upon Amazon Web Services, or AWS, to operate our cloud offering; any disruption of or interference with our use of AWS would adversely affect our business, results of operations, and financial condition.
- We employ third-party licensed software for use in or with our software, and the inability to maintain these licenses or errors in the software we license could result in increased costs or reduced service levels, which would adversely affect our business.
- If we do not or cannot maintain the compatibility of our platform with third-party applications that our customers use in their businesses, our revenue will decline.
- Because our software could be used to collect and store personal information, domestic and international privacy concerns could result in additional costs and liabilities to us or inhibit sales of our software.
- If our platform fails to function in a manner that allows our customers to operate in compliance with regulations and/or industry standards, our revenue and operating results could be harmed.
- We are subject to anti-corruption laws with respect to our domestic and international operations.

- We are subject to governmental export and import controls and economic and trade sanctions that could impair our ability to conduct business in international markets and subject us to liability if we are not in compliance with applicable laws and regulations.
- Any failure to protect our proprietary technology and intellectual property rights could substantially harm our business and operating results.
- Portions of our platform utilize open source software, and any failure to comply with the terms of one or more of these open source licenses could negatively affect our business.
- If our estimates or judgments relating to our critical accounting policies prove to be incorrect, our results of operations could be adversely affected.
- Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.
- The dual class structure of our common stock and the existing ownership of capital stock by Matthew Calkins, our founder and Chief Executive Officer, has the effect of concentrating voting control with Mr. Calkins for the foreseeable future, which will limit your ability to influence corporate matters.
- Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us more difficult, limit attempts by our stockholders to replace or remove our current management, and limit the market price of our Class A common stock.
- The effects of national and global epidemics, including the recent COVID-19 pandemic, could have an adverse impact on our business, operations, and the markets and communities in which we operate.
- Our stock price may be volatile, and you may lose some or all of your investment.

Item 1. Business.

Overview

Appian Corporation (together with its subsidiaries, "Appian," the "Company," "we," "us," or "our") provides a low-code automation platform that accelerates the creation of high-impact business applications and workflows, enabling our customers to automate the most important aspects of their business. Global organizations use our applications to improve customer experience, achieve operational excellence, and simplify global risk management and compliance.

With our platform, organizations can rapidly and easily design, build, and implement powerful, enterprise-grade custom applications through our intuitive, visual interface with little or no coding required. Our customers have used applications built on our platform to launch new business lines, automate vital employee workflows, manage complex trading platforms, accelerate drug development, and build global procurement systems. With our platform, decision makers can reimagine their products, services, processes, and customer interactions by removing much of the complexity and many of the challenges associated with traditional approaches to software development.

Organizations across all industries are digitally transforming by leveraging software to automate and optimize mission critical operations, enhance customer experiences, and drive competitive differentiation. Historically, organizations have principally relied on packaged software and custom software solutions to operationalize and automate their businesses. Packaged software often fails to address unusual use cases or to enable differentiation and requires organizations to adapt their individual processes, needs, and systems of record to standardized frameworks. While traditional custom software solutions can be differentiated and tailored to meet strategic objectives, development requires a long, iterative, and cumbersome process, as well as costly integration, and relies on scarce developer talent.

We enable organizations to differentiate themselves from their competition through software-enabled digital transformation. Our low-code automation platform employs an intuitive, visual interface and pre-built development modules that reduce the time required to build powerful and unique applications. Our platform automates the creation of forms, workflows, data structures, reports, and other software elements that would otherwise need to be manually coded. This functionality greatly reduces the iterative development process, allowing for real-time optimization and ultimately shortening the time it takes to design, build, and deploy applications. Our customers take advantage of our complete automation capabilities, including our industry-leading workflow engine, rules engine, native Robotic Process Automation, or RPA, capabilities, leading case management capabilities, and integrated Google-based artificial intelligence, or AI. Our customers can leverage these technologies to apply the right automation approach for each specific use case.

Further, our patented Self-Assembling Interface Layer, or SAIL, technology ensures applications developed on our platform can be immediately and natively deployed across a full range of mobile and desktop devices with no additional customization, including desktop web browsers, tablets, and mobile phones. Updates to applications developed with SAIL disseminate automatically across device types to ensure all users benefit from the most up-to-date functionality. At the same time, we unify enterprise data in a single searchable environment, providing organizations with a comprehensive view of customer, product, organizational asset, and other critical information. Rich reporting dashboards capture detailed performance metrics, providing valuable business intelligence and analytics that enable business process optimization. Our platform can be deployed in the cloud or on-premises, with organizations able to access the same functionality and data sources in all cases.

Our go-to-market strategy consists of both direct sales and sales through strategic partners. We sell our software almost exclusively through subscriptions and intend to grow our revenue both by adding new customers and increasing the number of users at existing customers that use our applications or increase the number of applications developed on our platform. Strategic partners work with organizations undergoing digital transformations projects and, when these partners recognize an opportunity for our platform, they often introduce us to potential customers.

Many of our customers begin by building a single application and grow to build dozens of applications on our platform, which implicitly reduces the per-user cost of each application. Generally, the development of new applications results in the expansion of our user base within an organization and a corresponding increase in revenue to us because we charge subscription fees on a per-user basis and, to a lesser degree, non-user based single application licenses. Every additional application an organization creates on our platform increases the value of our platform for that organization because it further integrates people, processes, and data across the organization and facilitates knowledge sharing. At the same time, our industry-leading

Customer Success organization enables our customers to more easily build and deploy applications on our platform to achieve their digital transformation goals.

We have experienced strong revenue growth, with revenue of \$304.6 million, \$260.4 million, and \$226.7 million in 2020, 2019, and 2018, respectively. Our subscriptions revenue was \$198.7 million, \$151.3 million, and \$126.0 million in 2020, 2019, and 2018, respectively, and includes sales of our software-as-a-service, or SaaS, subscriptions, on-premises term license subscriptions, and maintenance and support. SaaS subscription revenue, which is also referred to as cloud subscription revenue, was \$129.2 million, \$95.0 million, and \$67.4 million in 2020, 2019, and 2018, respectively, representing year-over-year growth rates of 36% from 2019 to 2020 and 41% from 2018 to 2019. Our professional services revenue, generated by our Customer Success organization, was \$105.9 million, \$109.1 million, and \$100.7 million in 2020, 2019, and 2018, respectively. Over time, as the need for professional services associated with user deployments decreases and the number of end users increases, we expect subscriptions revenue as a percentage of total revenue will continue to increase. Further, as the usage of partners expands, we expect the proportion of our total revenue from subscriptions to increase over time.

We have invested in developing our platform, expanding our sales and marketing and research and development capabilities, and providing general and administrative resources to support our growth. We intend to continue to invest in our business to take advantage of our market opportunity. As a result, we incurred net losses of \$33.5 million, \$50.7 million, and \$49.5 million in 2020, 2019, and 2018, respectively. We also used cash in operations of \$7.6 million, \$8.9 million, and \$31.3 million in 2020, 2019, and 2018, respectively.

COVID-19

Beginning in late 2019 and continuing into 2021, the outbreak of the novel coronavirus disease, or COVID-19, has resulted in the declaration of a global pandemic and adversely affected economic activity across virtually all sectors and industries on a local, national, and global scale. The impact of the COVID-19 pandemic on the economy and our business continues to be a dynamic situation.

Operationally, we remain focused on supporting our customers, employees, and communities during this time. We have responded quickly to adopt a virtual corporate strategy consisting of enabling most of our employees to work productively from home while continuing to guard the health and safety of our teams, support our customers, and mitigate risk. We are focused on ensuring continuity for our customers. To the extent possible, we are conducting business as usual, with necessary or advisable modifications to employee travel, employee work locations, and marketing events. Refer to Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Annual Report on Form 10-K for further discussion regarding the impact of the COVID-19 pandemic on our fiscal year 2020 financial results.

Through December 31, 2020, we have not seen a meaningful adverse impact to our financial position, results of operations, and cash flows and liquidity as a result of COVID-19. While the verticals from which we have historically generated the majority of our revenue have been less impacted by COVID-19 to date, there may be impacts to our financial condition and results of operations in 2021 as a result of reduced demand for our products and services and longer sales cycles. The ultimate impact of COVID-19 on our business is not estimable at this time and will be largely dependent upon a number of factors outside of our control including the extent and duration of the outbreak as well as any mitigating actions which may be undertaken by global governments and the general public.

Industry and Market Data

Information contained in this Annual Report on Form 10-K concerning our industry and the market in which we operate, including our general expectations and market position, market opportunity, and market size is based on information from various sources, including independent industry publications by Forrester Research Inc., or Forrester, Gartner, Inc., or Gartner, Prescient & Strategic Intelligence, and International Data Corporation, or IDC. In presenting this information, we have also made assumptions based on such data and other similar sources, and based on our knowledge of, and our experience to date in, the markets for our services. This information involves a number of assumptions and limitations, and we caution readers not to give undue weight to such estimates. Although we have not independently verified the accuracy or completeness of any third-party information, we believe the market position, market opportunity, and market size information included in this Annual Report on Form 10-K is reliable. The industry in which we operate is subject to a high degree of uncertainty and risk due to a

variety of factors, including those described in the “Risk Factors” section. These and other factors could cause results to differ materially from those expressed in the estimates made by the independent parties and by us.

The Gartner content described herein, or the Gartner Content, represent(s) research opinion or viewpoints published, as part of a syndicated subscription service, by Gartner, and are not representations of fact. The Gartner Content speaks as of its original publication date and not as of the date of this Annual Report on Form 10-K, and the opinions expressed in the Gartner Content are subject to change without notice. Gartner does not endorse any vendor, product or service depicted in its research publications and does not advise technology users to select only those vendors with the highest ratings or other designation. Gartner research publications consist of the opinions of Gartner’s Research & Advisory organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

Benefits of Our Platform

We enable organizations to differentiate themselves from their competition through software-enabled digital transformation. With our platform, organizations can rapidly and easily design, build, and implement powerful, enterprise-grade custom applications and workflows through our intuitive, visual interface, with little or no coding required. Our patented SAIL technology ensures applications developed on our platform can be immediately and natively deployed across a full range of mobile and desktop devices with no additional customization, including desktop web browsers, tablets, and mobile phones. We also enable organizations to easily modify and enhance applications and automatically disseminate these updates across device types to ensure all users benefit from the most up-to-date functionality.

Key benefits of our platform include:

- **Powerful applications to solve critical and complex challenges.** At the core of our platform is an advanced engine that enables the modeling, modification, and management of complex processes and business rules. Our heritage as a business process management, or BPM, company provides us with this differentiated understanding of complex processes, and we have incorporated that expertise into our platform to enable the development of powerful applications. Organizations have used our platform to launch new business lines, build large procurement systems, manage retail store layouts, conduct predictive maintenance on field equipment, optimize supply chain logistics, and manage trading platforms, among a range of other use cases.
- **Rapid and simple innovation through our powerful platform.** Our platform employs a low-code, intuitive, visual interface and pre-built development modules that reduce the time required to build powerful and unique applications. Our platform automates the creation of forms, workflows, data structures, reports, and other software elements that would otherwise need to be manually coded or configured. This functionality greatly reduces the iterative development process, allowing for real-time optimization and ultimately shortening the time it takes to design, build, and deploy applications. In turn, organizations can better leverage scarce and costly developer talent to accomplish more digital transformation objectives.
- **Build once, deploy everywhere.** Our patented SAIL technology allows developers to build an application once and use it everywhere with the consistency of experience and optimal performance levels that users expect. Applications developed on our platform can be immediately and natively deployed across a full range of mobile and desktop devices with no additional customization, including desktop web browsers, tablets, and mobile phones.
- **Delivering measurable results using automation.** Our low-code automation allows companies to combine people, existing systems, data, process mining, RPA, and AI in a single workflow to quickly deliver a meaningful business impact. Our RPA automates the routine tasks across legacy and modern systems, increasing efficiency and providing even more value to the customer. AI boosts business outcomes by making the applications intelligent, and our platform allows companies to design, execute, manage, and optimize workflows.
- **Seamless integration with existing systems and data.** In contrast to typical enterprise software, our platform does not require data to reside within it in order to enable robust data analysis or cross-department and cross-application insight. Our platform seamlessly integrates with many of the most popular enterprise software applications and data repositories and can be used within many legacy environments. For example, organizations frequently use our platform to extend the life and enhance the functionality of legacy systems of record, such as those used for enterprise resource planning, human capital management, and customer relationship management, by building new applications that

enhance the functionality of those systems and by leveraging the data within those systems to further optimize and automate operations.

- **Deployment flexibility to serve customer needs.** Our platform can be installed in any cloud or on-premises, with organizations able to access the same functionality and data sources in all cases. Our flexible deployment model also preserves a seamless path to future cloud deployments for organizations initially choosing on-premises for their most sensitive workloads.
- **Industry-leading security.** Our platform is designed to meet the highest demands of our U.S. federal government and large enterprise customers. Therefore, it holds some of the highest security certifications available. Our platform was one of the first to achieve Federal Risk and Authorization Management Program (FedRAMP) compliance. Additionally, government agencies can deploy our platform into a fully managed environment at the Impact Level IV security levels with a comprehensive SLA. Our platform is also certified under the Payment Card Industry Data Security Standard (PCI DSS) and meets all requirements under the HITRUST Common Security Framework (CSF). To protect personal health information, our platform is Health Insurance Portability and Accountability Act (HIPAA) compliant and enables General Data Protection Regulation (GDPR) compliance. Our controls are documented in our SOC-2 Type 2 report, in which an independent audit firm provides a detailed review of Appian Cloud's security, availability, and confidentiality controls. Also, our platform is ISO 27001 certified and possesses both a SOC-1 Type 2 report and a SOC-3 report.

Our approach to digital transformation goes beyond simply enabling organizations to build custom applications fast. We empower decision makers to reimagine their products, services, processes, and customer interactions with software by removing much of the complexity and many of the challenges associated with traditional approaches to software development. Because we make application development easy, organizations can build specific and competitively differentiated functionality into applications to deliver enhanced user experiences and streamlined business operations.

Our Growth Strategy

Key elements of our growth strategy include:

- **Expand our customer base.** We continue to grow our customer base in a variety of industries, including financial services, government, life sciences, telecommunications, media, energy, manufacturing, and transportation. We believe the market for our low-code automation platform is still in its early stages, and we have a significant opportunity to add additional large enterprise and government customers.
- **Grow through our differentiated land and expand model.** Many of our customers begin by building a single application and grow to build dozens of applications on our platform, which implicitly reduces the per-user cost of each application. Generally, the development of new applications results in the expansion of our user base within an organization and a corresponding increase in revenue to us because we usually charge subscription fees on a per-user basis and, to a lesser degree, non-user based single application licenses. Every additional application an organization creates on our platform increases the value of our platform for that organization because it further integrates people, process, and data across the organization and facilitates knowledge sharing. Applications built on our platform may be used only on our platform while customers have active subscriptions, creating a substantial incentive for customers to avoid the difficulties and costs associated with moving to a different software platform.
- **Grow revenue from key industry verticals.** While our platform is industry-agnostic, we have made, and plan to continue to make, investments to enhance the expertise of our sales and marketing organization within our key industry verticals of financial services, government, and life sciences. In 2020, we generated over 69% of our subscriptions revenue from customers in these verticals. We believe focusing on the digital transformation needs of organizations within these industry verticals can help drive adoption of our platform.
- **Continue to innovate and enhance our platform.** We have made, and will continue to make, investments in research and development to strengthen our platform and expand the number of features available to our customers. We offer multiple upgrades each year that allow our customers to benefit from ongoing innovation. As we continue to increase the functionality of our platform and further reduce the amount of developer skill required to build robust applications on our platform, we believe we have the potential to expand the use of our platform.

- **Offer industry solutions to accelerate customer usage.** Our platform enables our customers to build applications quickly. To give our customers an even faster start, we and our partners offer pre-built solutions. Every Appian solution is built on our platform so they are fully standardized, upgradeable, and compatible.
- **Expand our international footprint.** Our platform is designed to be natively multilingual to facilitate collaboration and address challenges in multinational organizations. In 2020, approximately 34% of our total revenue was generated from customers outside of the United States. As of December 31, 2020, we operated in 12 countries and believe we have a significant opportunity to continue to grow our international footprint. We are investing in new geographies, including through investment in direct and indirect sales channels, professional services and customer support, and implementation partners.
- **Grow our partner base.** We have several strategic partnerships including with KPMG, PwC, Accenture, and Deloitte. These partners work with organizations undergoing digital transformation projects and, when these partners recognize an opportunity for our platform, they often introduce us to potential customers in addition to building solutions on our platform. We intend to further grow our base of partners to provide broader customer coverage and solution delivery capabilities.

Our Opportunity

We believe we have a significant market opportunity in helping organizations accelerate their digital transformation by leveraging our low-code automation platform.

- **Current core software markets.** We believe our platform addresses several key core software markets, as follows:
 - **Low-code.** A low-code application development platform enables rapid application delivery with minimal hand-coding and quick setup and deployment. According to the Low-Code Development Platform Market Research Report published by Prescient & Strategic Intelligence in June 2020, the market for low-code development platforms was valued at \$10.3 billion in 2019 and is expected to grow at a 28% compound annual growth rate to \$57.3 billion by 2026. We were recognized as a "Leader" based on our completeness of vision and ability to execute in the 2020 Gartner Magic Quadrant for Enterprise Low-Code Application Platforms.¹
 - **Application PaaS.** Application platform as a service, or application PaaS, is a cloud service that provides the necessary infrastructure to enable the development, deployment, and hosting of software applications. We believe we are well positioned to capture a portion of the application PaaS market. According to Gartner, the global application PaaS market was valued at \$41.3 billion in 2019 and is expected to grow at a 23% compound annual growth rate to \$118.3 billion by 2024.²
 - **Robotic Process Automation.** RPA allows for the automation of high volume, rule-based, repetitive tasks performed by people and/or connecting to legacy systems that do not use modern application program interfaces, or APIs. According to Gartner, the market for RPA totaled \$2.2 billion in 2019 and is expected to grow at a 16% compound annual growth rate to \$3.4 billion by 2024.³
 - **Intelligent Process Automation.** Intelligent process automation, or IPA, combines task automation with process automation to orchestrate coordination across systems, humans, and digital workforce in a unified workflow. According to IDC, the market for worldwide IPA software totaled \$16.3 billion in 2019 and is expected to grow at a compound annual growth rate of 13% to \$30.5 billion by 2024.⁴ We were included as a "Leader" based on the strength of our current offering, our strategy, and our market presence in The Forrester Wave™: Software For Digital Process Automation for Deep Deployments, Q2 2019, in June 2019.

¹ Gartner Magic Quadrant for Enterprise Low-Code Application Platforms , Published 30 September 2020; Authored by: Paul Vincent, Yefim Natis, Jason Wong, Saikat Ray, et al.

² Gartner, Forecast: Public Cloud Services, Worldwide, 2018-2024, 4Q20 Update, Colleen Graham, Neha Gupta, et al., 21 December 2020.

³ Gartner Forecast Analysis: Robotic Process Automation, Worldwide; Published 2 September 2020; Authored by: Fabrizio Biscotti, Cathy Tornbohm, Arthur Villa, et. al).

⁴ IDC: Worldwide Intelligent Process Automation Software Forecast, 2020-2024; Published 15 July 2020; Authored by Maureen Fleming.

Taken together, these current core software markets are expected to represent a combined \$70.1 billion market opportunity currently and a combined \$209.5 billion market opportunity in the near term.

- **Traditional custom enterprise software market.** In addition to our current core software markets, we believe our platform better addresses certain needs of enterprise companies that have historically used manually-developed custom software. The global enterprise application software market is expected to reach \$231 billion in 2021, according to Gartner.⁵
- **Our internal estimate.** Based on approximately 166,000 global companies and government institutions in relevant industries and revenue-based size segments as well as our industry- and size-specific average annual recurring revenue for customers as of December 31, 2020, we internally estimate our market opportunity to have been approximately \$37 billion in 2020. We determined relevant global companies and government institutions by industry and size by referencing certain independent industry data from S&P Global Market Intelligence. We calculated industry- and size-specific average annual recurring revenue as of December 31, 2020 by adding the aggregate annual recurring revenue from all existing customers within each industry and size segment and dividing the total by the number of our existing customers in each industry and size segment.

⁵ Gartner, *Forecast: Enterprise Application Software, Worldwide, 2018-2024, 4Q20 Update*, Neha Gupta, Chris Pang, et al., 18 December 2020.

Our Platform

With our platform, organizations can rapidly and easily design, build, and implement powerful, enterprise-grade custom applications through our intuitive, visual interface, with little or no coding required. We also enable organizations to easily modify and enhance applications and automatically disseminate these updates across device types to ensure all users benefit from the most up-to-date functionality. Through the speed and power of our platform, organizations can make their digital transformations happen more effectively and efficiently than could be achieved through building an application with standard programming languages.

We believe the key elements of our technology infrastructure are as follows:

Low-code Automation Offering

Our heritage as a BPM company provides us with a differentiated understanding and ability to automate complex processes, and we have incorporated that expertise into our platform to enable the development of powerful business software. Appian applications can leverage our complete automation capabilities, applying the right automation approach for each specific use case:

- **Workflow.** At the core of our platform is an advanced engine that enables the modeling, modification, and management of complex processes. Appian combines people, technologies, and data into a single workflow to maximize resources and improve business results. Workflow can include any worker (people, RPA, AI) or any resource (data and system).
- **Decision Rules.** Appian includes a declarative environment for defining and executing business logic or rules. These rules can be highly complex and applied within the Appian platform to many use cases, ranging from automated decision making to user experience personalization.
- **Robotic Process Automation.** Appian includes native software robots which can be used to execute simple repetitive tasks, reducing the human burden of that work. These robots facilitate integration with legacy systems that do not offer modern APIs.
- **Artificial Intelligence.** Appian includes a range of AI features based on Google's AI services. These features include sentiment analysis, translation, and document and image analysis. Appian also allows customers to integrate with their preferred AI provider using our zero-code connectors.
- **Case Management.** Appian case management enables automation of many of the most common patterns of collaborative human work such as service management, incident management, and investigations.

Appian combines the power of workflow, decision rules, RPA, AI, and case management into a unified platform. Our platform has the complete automation capabilities to fuel enterprise-wide workflows and the ability to scale with an organization's growth through performance, governance, and security. Our complete automation offering is core to unlocking business results for organizations by bringing people, technologies, and data into a single workflow along with the development speed to keep organizations agile.

Web-Based Development Environment

The Appian design interface is a model-driven, web-based development environment for application creation, testing, deployment, and performance optimization. Appian design is a shared repository of all Appian components (interfaces, process models, APIs, new component builders, and user collaboration modules) and serves as an administration utility for managing people, processes, and data.

The Appian design repository incorporates best practices and years of lessons learned from digital transformation initiatives. Common development operations tasks require just a few clicks and can be automated for hands-off deployment. Dramatic improvements in developer productivity can be achieved through user-friendly capabilities such as fast impact analysis of all changes, auto-updating applications and components when data types change, and live views of interfaces under development.

Appian design guides developers through the necessary steps to create the foundation elements of reusable interfaces, records, and business processes, while providing all the power developers need to design, build, and implement enterprise systems at scale.

Our Patented SAIL Technology

SAIL is our patented technology that allows developers to create dynamic and responsive web and native-mobile user interfaces through a “build once, deploy everywhere” architecture. SAIL interfaces only need to be created once, and SAIL automatically assembles customer applications for optimal viewing on each device type, including desktop web browsers, tablets, and mobile phones, as well as each device operating system, including iOS and different permutations of Android. SAIL leverages native functionality inherent across a myriad of devices and operating systems to ensure the consistency of experience and optimal performance levels users expect. Updates to applications developed with SAIL are automatically disseminated across device types to ensure all users benefit from the most up-to-date functionality. This approach enables enterprise mobility without the extensive time and resources other development approaches require.

We believe SAIL provides a significant advantage over other platforms that both require extensive customization for various devices at the time of the creation of the new applications and on an on-going basis as mobile device manufacturers continue to update their software and capabilities.

Low-Code Data

Appian Records is an advanced data management technology that allows end users to discover and unite enterprise data into a single searchable environment, providing a comprehensive view of an organization’s data. In contrast to typical enterprise software, our platform does not require data to reside within it in order to enable robust data analysis and cross-department and cross-application insight. Using standard database software and service connection frameworks, including APIs, our platform seamlessly integrates with many of the most popular enterprise software applications and data repositories and can be used within many legacy environments. Users simply need to assign a name to a given topic and decide which existing data sources within the enterprise they want to capture. In addition to the benefits of having an immediate snapshot of all centralized data relating to the customer, product, employee, or service request, Appian Records also allows organizations to analyze the end-to-end journeys of any given person, entity, or asset. Once the connections are established, users may navigate, analyze, collaborate, and take action on data from our intuitive dashboards and interactive reports.

Unified End User Interfaces

Our end user interfaces enable users to discover data, collaborate with other end users, and participate in process actions. The end user experience begins with a news feed that allows end users to monitor key events from processes, systems, and other end users, providing a unified view of all applications and activity in one place. End users can collaborate with others, obtain status updates, send direct and secure messages, and create social tasks for other end users. Our activity stream is designed to be intuitive for end users familiar with popular consumer social interfaces, allowing them to instantly track important events and occurrences and collaborate with little to no training. We also enforce company security policies, so end users can confidently collaborate without fear of compromising regulatory compliance. Our end user interfaces solve the problem of information silos, allowing organizations to respond to constituent feedback in real time by uniting the right team with the right information.

At the same time, our platform provides transparency, visibility, and control across all of our applications through a dynamic and powerfully flexible tasking environment. We provide detailed tracking of all human process tasks on our platform, including when tasks have been assigned, addressed, and completed by any user. Business Activity Monitoring reports display real-time enterprise performance, bottleneck detection, and process optimization while scaling to millions of tasks.

Technology

We designed our platform to support large global enterprises and government organizations at scale, in the cloud or on-premises. We design, deploy, and manage our platform with the goal of it being a “joy to use” for both developers and users of applications.

Our customers build powerful and unique applications using our proprietary and patented SAIL technology, which we also use ourselves to develop features of our platform. We also employ cutting-edge React technology for building web and mobile user interfaces. We use third-party proprietary database and database language technology licensed from Kx Systems, Inc., or Kx, to power the high-performance in-memory database of our platform. Under our agreement with Kx, we are permitted to distribute Kx's software as a component part of our software platform as well as to host Kx's software on behalf of our customers through our cloud offering. Our agreement requires Kx to provide maintenance directly to us on the software we license as long as it provides maintenance to any other customers. We pay a variable license fee based on the number of applications built by our customers, subject to an overall cap on payment. We have paid Kx the overall license fee cap in each of the last five years. We may maintain the contract as long as we pay maintenance fees. Kx may terminate the agreement if we materially breach the agreement, become insolvent, make an assignment for the benefit of creditors, or if a bankruptcy proceeding is initiated against us. Unless we fail to pay amounts due under the contract or violate certain of Kx's intellectual property rights, Kx may not terminate the agreement until either it has successfully litigated a breach action or six months, whichever is earlier.

Our cloud offering is hosted by Amazon Web Services, or AWS, and is available in 77 availability zones in 24 geographic regions. Our software is also able to run in the Microsoft Azure cloud and the Google Cloud Platform. Our enablement of the Microsoft Azure cloud and the Google Cloud Platform is consistent with our principle of platform neutrality.

We have also implemented a wide set of technical, physical, and personnel-based security controls designed to protect against the compromise of confidential data belonging to both our customers and us.

Professional Services

Since inception, we have invested in our Customer Success organization to help ensure customers are able to deploy and adopt our platform. We believe our investment in professional services, as well as efforts by partners to build their practices around Appian, will drive increased adoption of our platform.

When we first acquire a new customer, our professional services experts or our partners' professional services experts start the implementation process. Delivery specialists facilitate deployment of our platform, and training personnel provide comprehensive support throughout the implementation process. Customers have access to our Appian Academy, which trains analysts and developers of different skill sets on our platform. We also provide instructor-led courses globally, delivered either virtually or in-person.

Once our customers have deployed and implemented our platform, our Appian Architects review our customers' programs and applications to find potential issues and provide recommendations on best practices. Our professional services team also assists customers by building applications on our platform for them.

Over time, we expect professional services revenue as a percentage of total revenue to continue to decline as we increasingly rely on strategic partners to help our customers deploy our software.

Customer Support

Our customer support personnel are trained engineers and designers who can work with customers on the front lines to address support issues. We provide e-mail and phone support via teams in the United States, the United Kingdom, and Australia. Developers can also find answers to their questions on the Appian Community, a community site that provides online customer support, real-time collaboration and networking, a growing knowledge base of answers for common questions, and live product webinars and training. The Appian Community also includes documentation, methodologies, and reusable components for our platform. We have consistently been able to achieve at least a 98% customer satisfaction rating for our customer support organization, based on our surveys.

Our Customers

Our customers operate in a variety of industries, including financial services, government, life sciences, education, technology, media and telecommunications, consumer, and industrials. As of December 31, 2020, we had 693 customers, of which 548 customers were commercial and 145 customers were government or non-commercial entities. Generally, our sales

force targets its efforts to organizations with over 2,000 employees and \$2 billion in annual revenue. Our number of customers paying us in excess of \$1 million of annual recurring revenue has grown from 48 at the end of 2019 to 55 at the end of 2020. As of December 31, 2020, 25% of our commercial customers were Global 2000 organizations, and 60 of our customers were Fortune 500 companies. No single end-customer accounted for more than 10% of our total revenue in 2020, 2019, or 2018.

Human Capital Resources and Management

Employees, Culture, and Labor Relations

Our distinct culture of innovation is an important contributor to our success as a company. We promote an inclusive environment where our employees can thrive every day and contribute their unique, diverse perspectives to help create transformative solutions for our customers. Our culture was purposefully cultivated by our four founders, who are still heavily involved in operating our business, including recruiting, interviewing, and educating new employees at Appian. Led by Matt Calkins, one of our founders and our Chief Executive Officer, we have grown our business organically by employing a unified team to maximize the cohesion and simplicity of our platform and our company.

As of December 31, 2020, we had a total global workforce of 1,460 full-time employees, 1,124 of which were based in the United States. During 2020, we had a voluntary attrition rate of only 9% among all employees, which we believe is a testament to the strength of our culture. None of our U.S. employees are covered by collective bargaining agreements. We believe our employee relations are good, and we have not experienced any work stoppages. Additionally, we are subject to, and comply with, local labor law requirements in all countries in which we operate.

Talent Acquisition and Development

We have a robust talent acquisition program to attract, recruit, and retain new talent. We utilize an extensive campus recruiting program, provide for an employee referral program, offer opportunities for internal transfers, and offer competitive compensation and benefits programs. We also provide a variety of resources to help our employees grow in their current roles and build new skills, including access to Appian University, a system that houses Appian's in-house learning and development solutions.

Inclusion and Diversity

We believe employee diversity and an inclusive environment are paramount to our continued success, as our individual styles of communication, management, and problem-solving enable us to learn from one another and discover creative solutions. We sponsor a number of affinity groups, initiated by employees, that aim to build stronger internal and external networks and partnerships, create a positive lasting impact through social and educational outreach and other activities, and create development opportunities for future leaders.

Our Competition

Our main competitors fall into three categories: (1) providers of custom software and customer software solutions that address, or are developed to address, some of the use cases that can be addressed by applications developed on our platform; (2) providers of low-code development platforms, such as Microsoft, Salesforce.com, ServiceNow, OutSystems, and Mendix; and (3) providers of business process management and case management software, such as Pegasystems, IBM, Bizagi, Oracle, and Nintex.

As our market grows, we expect it will attract more highly specialized vendors as well as larger vendors that may continue to acquire or bundle their products more effectively. The principal competitive factors in our market include:

- Platform features, reliability, performance, and effectiveness;
- Ease of use and speed;
- Platform extensibility and ability to integrate with other technology infrastructures;
- Deployment flexibility;

- Robustness of professional services and customer support;
- Price and total cost of ownership;
- Strength of platform security and adherence to industry standards and certifications;
- Strength of sales and marketing efforts; and
- Brand awareness and reputation.

We believe we generally compete favorably with our peer group with respect to the features, security, and performance of our platform, the ease of integration of our applications, and the relatively low total cost of ownership of our applications. However, many of our competitors have substantially greater financial, technical, and other resources, greater name recognition, larger sales and marketing budgets, broader distribution, more diversified product lines, and larger and more mature intellectual property portfolios.

Seasonality

We have historically experienced seasonality in terms of when we enter into agreements with customers. We typically enter into a significantly higher percentage of agreements with new customers, as well as renewal agreements with existing customers, in the fourth quarter. The increase in customer agreements for the fourth quarter is attributable to large enterprise account buying patterns typical in the software industry. Furthermore, we usually enter into a significant portion of agreements with customers during the last month, and often the last two weeks, of each quarter. However, we recognize the majority of our subscriptions revenue ratably over the terms of our subscriptions agreements, which are generally one to three years in length. As a result, a substantial portion of the subscriptions revenue we report in each period will be derived from the recognition of deferred revenue relating to agreements entered into during previous periods. Consequently, a decline in new sales or renewals in any one period may not be immediately reflected in our revenue results for that period. However, this decline will negatively affect our revenue in future periods. Accordingly, the effect of significant downturns in sales and market acceptance of our platform and potential changes in our rate of renewals may not be fully reflected in our results of operations until future periods.

While we will continue to recognize the majority of our subscriptions revenue ratably over the terms of our subscription agreements, we may experience greater variability and reduced comparability of our quarterly revenue and results due to the upfront revenue recognition associated with our term license subscription agreements.

Sales and Marketing

Sales

Our sales organization is responsible for account acquisition and overall market development, which includes managing relationships with our customers. We also sell our software through our strategic partners. While our platform is industry-agnostic, we have recently made, and plan to continue to make, investments to enhance the expertise of our sales organization within our core industry verticals of financial services, government, and life sciences. We expect to continue to grow our sales headcount in all of our principal markets and expand our presence into countries where we currently do not have a direct sales presence. We also intend to further grow our base of partners to provide broader customer coverage and solution delivery capabilities.

Marketing

Our marketing efforts focus on building our brand reputation and increasing market awareness of our platform. Marketing activities include sponsorship of, and attendance at, trade shows and conferences, our annual Appian World event, social media, advertising and other digital programs, management of our corporate website and partner portal, press outreach, and customer relations. In response to the COVID-19 pandemic, we have reduced the number of in-person marketing events, including shifting Appian World to virtual-only in 2020 and 2021.

Intellectual Property

Our success depends in part upon our ability to protect our core technology and intellectual property. We rely on patents, trademarks, copyrights, trade secret laws, confidentiality procedures, and employee disclosure and invention assignment agreements to protect our intellectual property rights.

As of December 31, 2020, we had five granted patents and six patents pending related to our platform and its technology. None of our issued patents expire before 2034. We cannot provide complete assurance that any of our patent applications will result in the issuance of a patent or that the examination process will not require us to narrow our claims. Any patents we may be issued may be contested, circumvented, found unenforceable, or invalidated, and we may not be able to prevent third parties from infringing them. We also license software from third parties for integration into our products, including open source software and other software available on commercially reasonable terms. We control access to and use of our proprietary software and other confidential information through the use of internal and external controls, including contractual protections with employees, contractors, end customers, and partners, and our software is protected by U.S. and international copyright and trade secret laws.

Facilities

As of December 31, 2020, we leased our headquarters office in McLean, Virginia and offices in three cities outside the United States. In addition to our leased offices, we occupied two flexible workspaces outside of the United States. In 2020, as part of our response to the COVID-19 pandemic, we reduced the number of offices we occupied as we shifted to largely remote work. Our use of flexible workspaces is dependent upon our current business needs. We believe our facilities are adequate to meet our ongoing needs, including substantial rights to expand within certain properties we lease. If we require additional space in the future, we believe we will be able to obtain additional facilities on commercially reasonable terms.

Corporate Information

Our Class A common stock is listed on the Nasdaq Global Market under the symbol "APPN".

Our current principal executive offices are located at 7950 Jones Branch Drive, McLean, Virginia 22102, and our telephone number is (703) 442-8844.

"Appian", the Appian logo, and other trademarks or service marks of Appian Corporation appearing in this Annual Report on Form 10-K are the property of Appian Corporation. This Annual Report on Form 10-K contains additional trade names, trademarks, and service marks of others, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this Annual Report on Form 10-K exclude the ® or TM symbols.

Available Information

Our website address is www.appian.com. Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Exchange Act are made available free of charge on or through our website at investors.appian.com as soon as reasonably practicable after such reports are filed with, or furnished to, the United States Securities and Exchange Commission, or SEC. The information contained on, or that can be accessed through, our website is not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our website are intended to be inactive textual references only.

Item 1A. Risk Factors.

Our operations and financial results are subject to various risks and uncertainties including those described below. You should consider carefully the risks and uncertainties described below, in addition to other information contained in this Annual Report on Form 10-K, including our consolidated financial statements and related notes. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business. If any of the following risks or others not specified below materialize, our business, financial condition, and results of operations could be materially and adversely affected, and the trading price of our Class A common stock could decline.

Risks Related to Our Business and Industry

Our recent growth may not be indicative of our future growth and, if we continue to grow, we may not be able to manage our growth effectively.

We continue to experience rapid growth in our headcount and operations. We have also significantly increased the size of our customer base over the last several years. We anticipate we will continue to significantly expand our operations and headcount in the near term. Our growth has placed, and any future growth will place, a significant strain on our management, administrative, operational, and financial infrastructure. Our success will depend in part on our ability to manage this growth effectively. To manage the expected growth of our operations and personnel, we will need to continue to improve our operational, financial, and management controls and our reporting systems and procedures. Failure to effectively manage our growth could result in difficulty or delays in deploying our platform to customers, declines in quality or customer satisfaction, increases in costs, difficulties in introducing new features, or other operational difficulties. Any of these difficulties could adversely impact our business performance and results of operations.

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

We have experienced revenue growth with revenue of \$304.6 million, \$260.4 million, and \$226.7 million in 2020, 2019, and 2018, respectively. Although we have experienced rapid revenue growth historically, we may not continue to grow as rapidly in the future, and our revenue growth rates may decline. Any success we may experience in the future will depend in large part on our ability to, among other things:

- Maintain and expand our customer base;
- Increase revenue from existing customers through increased or broader use of our platform within their organizations;
- Further penetrate the existing industry verticals we serve and expand into other industry verticals; and
- Continue to successfully expand our business domestically and internationally.

If we are unable to maintain consistent revenue or revenue growth, our stock price could be volatile, and it may be difficult to achieve and maintain profitability. You should not rely on our revenue for any prior quarterly or annual periods as any indication of our future revenue or revenue growth.

We may not be able to scale our business quickly enough to meet our customers' growing needs, and if we are not able to grow efficiently, our operating results could be harmed.

As usage of our platform grows and as customers use our platform for more advanced and more frequent projects, we may need to devote additional resources to improving our software architecture, integrating with third-party systems, and maintaining infrastructure performance. In addition, we will need to appropriately scale our internal business operations as well as grow our partner services systems, including our Customer Success organization and operations, to serve our growing customer base, particularly as our customer base expands over time. Any failure of or delay in these efforts could cause impaired system performance and reduced customer satisfaction. These issues could reduce the attractiveness of our platform to customers, resulting in decreased sales to new customers, lower renewal rates by existing customers, the issuance of service credits, or requested refunds, which could hurt our revenue growth and our reputation. Even if we are able to upgrade our systems and expand our staff, any such expansion will be expensive and complex, requiring management time and attention. We could also face inefficiencies or operational failures as a result of our efforts to scale our infrastructure. Moreover, there are

inherent risks associated with upgrading, improving, and expanding our information technology systems. We cannot be sure the expansion and improvements to our infrastructure and systems will be fully or effectively implemented on a timely basis, if at all. These efforts may reduce revenue and our margins and adversely impact our financial results.

We are dependent on a single product, and the lack of continued market acceptance of our platform could cause our operating results to suffer.

Sales of our software platform account for substantially all of our subscriptions revenue and are the source of substantially all of our professional services revenue. We expect we will be substantially dependent on our platform to generate revenue for the foreseeable future. As a result, our operating results or revenue growth rates could suffer due to:

- Any decline or lower than expected growth in demand for our platform;
- The failure of our platform to achieve continued market acceptance;
- The market for low-code solutions not continuing to grow or growing more slowly than we expect;
- The introduction of products and technologies that serve as a replacement or substitute for, or represent an improvement over, our platform;
- Technological innovations or new standards that our platform does not address;
- Sensitivity to current or future prices offered by us or competing solutions;
- The inability to further penetrate our existing industry verticals or expand our customer base; and
- Our inability to release enhanced versions of our platform on a timely basis.

Our sales cycle is long and unpredictable, particularly with respect to large customers, and our sales efforts require considerable time and expense, all of which may cause our operating results to fluctuate.

Our operating results may fluctuate, in part, because of the resource-intensive nature of our sales efforts, the length and variability of the sales cycle of our platform, and the difficulty we face in adjusting our short-term operating expenses. Our operating results depend in part on sales to large customers and promotion of increasing usage by those large customers. The length of our sales cycle, from initial evaluation to delivery of and payment for our software, varies substantially from customer to customer, and it is difficult to predict if or when we will make a sale to a potential customer. We may spend substantial time, effort, and money on our sales and marketing efforts without any assurance our efforts will result in revenue. As a result of these factors, we may face greater costs, longer sales cycles, and less predictability in the future. In the past, certain individual sales have occurred in periods later than we expected or have not occurred at all. The loss or delay of one or more large transactions in a quarter could impact our operating results for that quarter and any future quarters in which such revenue otherwise would have been recognized because a substantial portion of our expenses are relatively fixed in the short-term. As a result of these factors, it is difficult for us to forecast our revenue accurately in any quarter, and our quarterly results may fluctuate substantially.

Market adoption of low-code platforms to drive digital transformation is new and unproven and may not grow as we expect, which may harm our business and prospects.

We believe our future success will depend in large part on growth in the demand for low-code platforms to drive software-enabled digital transformation. It is difficult to predict customer demand for our platform, renewal rates, the rate at which existing customers expand their subscriptions, the size and growth rate of the market for our platform, the entry of competitive products, or the success of existing competitive products. The utilization of low-code software to drive digital transformation is still relatively new. Any expansion in our addressable market depends on a number of factors, including businesses continuing to desire to differentiate themselves through software-enabled digital transformation, increasing their reliance on low-code solutions, changes in the competitive landscape, technological changes, budgetary constraints of our customers, and changes in economic conditions. If our platform does not achieve widespread adoption or there is a reduction in demand for low-code solutions caused by these factors, it could result in reduced customer purchases, reduced renewal rates, and decreased revenue, any of which will adversely affect our business, operating results, and financial condition.

We currently face significant competition.

The markets for low-code automation platforms, business process management, case management software, and custom software are highly competitive, rapidly evolving, and have relatively low barriers to entry. The principal competitive factors in our market include the following: platform features, reliability, performance, and effectiveness; ease of use and speed; platform extensibility and ability to integrate with other technology infrastructures; deployment flexibility; robustness of professional services and customer support; price and total cost of ownership; strength of platform security and adherence to industry standards and certifications; strength of sales and marketing efforts; and brand awareness and reputation. If we fail to compete effectively with respect to any of these competitive factors, we may fail to attract new customers or lose or fail to renew existing customers, which would cause our operating results to suffer.

Our main competitors fall into three categories: (1) providers of custom software and customer software solutions that address, or are developed to address, some of the use cases that can be addressed by applications developed on our platform, (2) providers of low-code development platforms, such as Microsoft, Salesforce.com, ServiceNow, OutSystems, and Mendix, and (3) providers of business process management and case management software, such as Pegasystems, IBM, Bizagi, Oracle, and Nintex.

Some of our actual and potential competitors have advantages over us such as longer operating histories, more established relationships with current or potential customers and commercial partners, significantly greater financial, technical, marketing, or other resources, stronger brand recognition, larger intellectual property portfolios, and broader global distribution and presence. Such competitors may make their solutions available at a low cost or no cost basis in order to enhance their overall relationships with current or potential customers. Our competitors may also be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards, or customer requirements. With the introduction of new technologies and new market entrants, we expect competition to intensify in the future. In addition, some of our larger competitors have substantially broader offerings and can bundle competing products with other software offerings. As a result, customers may choose a bundled offering from our competitors, even if individual products have more limited functionality than our platform. These larger competitors are also often in a better position to withstand any significant reduction in capital spending and will therefore not be as susceptible to economic downturns.

If our security measures are breached or unauthorized access to our platform or customer data is otherwise obtained, our platform may be perceived as not being secure, customers may reduce the use of or stop using our platform, and we may incur significant liabilities.

Our platform, which can be deployed in the cloud or on-premises, allows for the storage and transmission of our customers' proprietary or confidential information, which may include trade secrets, personally identifiable information, personal health information, and payment card information. Any actual or perceived unauthorized access to, or security breaches affecting, our platform or the information stored on or transmitted by our platform, including through unauthorized and/or malicious activity by one of our employees, could result in the loss of information, litigation, regulatory investigations, penalties, indemnity obligations and other costs, expenses, and liability, which could exceed our existing insurance coverage and could result in a substantial financial loss. While we have security measures in place designed to protect customer information and prevent data loss and other security breaches, there can be no assurance these measures will be effective in protecting against unauthorized access to our platform or our customers' information. Similarly, if cyber incidents such as phishing attacks, viruses, denial of service attacks, malware installation, server malfunction, software or hardware failures, loss of data or other computer assets, adware, or other similar issues impair the integrity or availability of our systems by affecting our data or reducing access to or shutting down one or more of our computing systems or our IT network, we may be subject to negative treatment by our customers, our business partners, the press, and the public at large. Further, because the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures. Additionally, we may be subject to attacks on our networks or systems or attempts to gain unauthorized access to our proprietary or confidential information or other data we or our vendors maintain such as data about our employees. Such attacks and other breaches of security may occur as a result of malicious attacks, human error, social engineering, or other causes. Any actual or perceived breach of our security measures or failure to adequately protect our customers' or our confidential or proprietary information could negatively affect our ability to attract new customers, cause existing customers to elect to not renew their subscriptions to our software, or result in reputational damage, any of which could adversely affect our operating results.

Further, security compromises experienced by our customers with respect to data hosted on our platform, even if caused by the customer's own misuse or negligence, may lead to public disclosures, which could harm our reputation, erode customer confidence in the effectiveness of our security measures, negatively impact our ability to attract new customers, or cause existing customers to elect not to renew their subscriptions with us. We may be subjected to indemnity demands, regulatory proceedings, audits, penalties, or litigation based on our customers' misuse of our platform with respect to such sensitive information and defending against such litigation and otherwise addressing such matters may be expensive, cause distraction, and may result in us incurring liability, all of which may affect our operating results.

While we maintain general liability insurance coverage and coverage for errors or omissions, we cannot assure you such coverage will be adequate or otherwise protect us from liabilities or damages with respect to claims alleging compromises of personal data or that such coverage will continue to be available on acceptable terms or at all.

We derive a material portion of our revenue from a limited number of customers, and the loss of one or more of these customers could adversely impact our business, results of operations, and financial condition.

Our customer base is concentrated. For example, during the years ended December 31, 2020, 2019, and 2018, revenue from U.S. federal government agencies represented 18.1%, 17.1%, and 15.7% of our total revenue, respectively, and the top three U.S. federal government customers generated 6.6%, 7.4%, and 7.8% of our total revenue for the years ended December 31, 2020, 2019, and 2018, respectively. Further, nearly 8% of our subscription customers spent more than \$1 million on our software in 2020. If we were to lose one or more of our significant customers, our revenue may significantly decline. In addition, revenue from significant customers may vary from period to period depending on the timing of renewing existing agreements or entering into new agreements. The loss of one or more of our significant customers could adversely affect our business, results of operations, and financial condition.

A portion of our revenue is generated from subscriptions sold to governmental entities and heavily regulated organizations, which are subject to a number of challenges and risks.

A significant portion of our revenue is generated from subscriptions sold to governmental entities, both in the United States and internationally. Additionally, many of our current and prospective customers such as those in the financial services, pharmaceuticals, insurance, and life sciences industries are highly regulated and may be required to comply with more stringent regulations in connection with subscribing to and implementing our platform. Selling subscriptions to these entities can be highly competitive, expensive, and time-consuming, often requiring significant upfront time and expense without any assurance we will successfully complete a sale. In addition, if our software does not meet the standards of new or existing regulations, we may be in breach of our contracts with our customers, allowing them to terminate their agreements.

Governmental demand and payment for our platform may also be impacted by public sector budgetary cycles and funding authorizations, with funding reductions or delays adversely affecting public sector demand for our platform. Governmental and highly regulated entities, including the General Services Administration, whose schedule accounts for many of our U.S. federal government contracts, impose compliance requirements that are complicated, require preferential pricing or "most favored nation" terms and conditions, or are otherwise time-consuming and expensive to satisfy. In the United States, applicable federal contracting regulations change frequently, and the President may issue executive orders requiring federal contractors to adhere to new compliance requirements after a contract is signed. If we undertake to meet special standards or requirements and do not meet them, we could be subject to significant liability from our customers or regulators. Even if we do meet these special standards or requirements, the additional costs associated with providing our platform to government and highly regulated customers could harm our operating results. Moreover, changes in the underlying statutory and regulatory conditions that affect these types of customers could harm our ability to efficiently provide them access to our platform and to grow or maintain our customer base. In addition, engaging in sales activities to foreign governments introduces additional compliance risks specific to the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act, and other similar statutory requirements prohibiting bribery and corruption in the jurisdictions in which we operate.

We have experienced losses in the past, and we may not achieve or sustain profitability in the future.

We generated net losses of \$33.5 million, \$50.7 million, and \$49.5 million in 2020, 2019, and 2018, respectively. As of December 31, 2020, we had an accumulated deficit of \$168.9 million. We will need to generate and sustain increased revenue levels in future periods in order to achieve or sustain profitability in the future. We also expect our costs to increase in future

periods, which could negatively affect our future operating results if our revenue does not increase commensurately. For example, we intend to continue to expend significant funds to expand our sales and marketing operations, develop and enhance our platform, meet the increased compliance requirements associated with our operation as a public company, and expand into new markets. Our efforts to grow our business may be more costly than we expect, and we may not be able to increase our revenue enough to offset our higher operating expenses. We may incur significant losses in the future for a number of reasons, including the other risks described in this Annual Report on Form 10-K, and unforeseen expenses, difficulties, complications and delays, and other unknown events. If we are unable to achieve and sustain profitability, our stock price may significantly decrease.

Our future quarterly results of operations may fluctuate significantly due to a wide range of factors, which makes our future results difficult to predict.

Our revenue and results of operations have historically varied from period to period, and we expect they will continue to do so as a result of a number of factors, many of which are outside of our control, including:

- The level of demand for our platform and our professional services;
- The rate of renewal of subscriptions with, and extent of sales of additional subscriptions to, existing customers;
- Large customers failing to renew their subscriptions;
- The size, timing, and terms of our subscription agreements with existing and new customers, including revenue recognition issues raised by multiple element arrangements;
- Variations in the revenue mix of our professional services and growth rates of our cloud subscription and professional services offerings, including the timing of subscriptions and sales offerings that include an on-premises software element for which the revenue allocated to that deliverable is recognized upfront;
- The timing and growth of our business, in particular through our hiring of new employees and international expansion;
- The timing of our adoption of new or revised accounting pronouncements applicable to public companies and the impact on our results of operations;
- The introduction of new products and product enhancements by existing competitors or new entrants into our market, and changes in pricing for solutions offered by us or our competitors;
- Network outages, security breaches, technical difficulties, or interruptions with our platform;
- Changes in the growth rate of the markets in which we compete;
- The mix of subscriptions to our platform and professional services sold during a period;
- Customers delaying purchasing decisions in anticipation of new developments or enhancements by us or our competitors or otherwise;
- Changes in customers' budgets;
- Seasonal variations related to sales and marketing and other activities such as expenses related to our customers;
- Our ability to increase, retain, and incentivize the strategic partners that market and sell our platform;
- Our ability to control costs, including our operating expenses;
- Our ability to hire, train, and maintain our direct sales force;
- Unforeseen litigation and intellectual property infringement;
- Any changes in accounting principles generally accepted in the United States, or GAAP;
- Fluctuations in our effective tax rate; and
- General economic and political conditions, both domestically and internationally, as well as economic conditions specifically affecting industries in which our customers operate.

Any one of these or other factors discussed elsewhere in this Annual Report on Form 10-K or the cumulative effect of some of these factors may result in fluctuations in our revenue and operating results, meaning quarter-to-quarter comparisons of our revenue, results of operations, and cash flows may not necessarily be indicative of our future performance, may cause us to miss our guidance or analyst expectations, and may cause our stock price to decline.

In addition, we have historically experienced seasonality in terms of when we enter into agreements with customers. We typically enter into a significantly higher percentage of agreements with new customers, as well as renewal agreements with existing customers, in the fourth quarter and, to a lesser extent, the second quarter. The increase in customer agreements for the fourth quarter is attributable to large enterprise account buying patterns typical in the software industry. Furthermore, we usually enter into a significant portion of agreements with customers during the last month, and often the last two weeks, of each quarter. This seasonality is reflected to a much lesser extent, and sometimes is not immediately apparent, in revenue, due to the fact we recognize cloud subscription revenue over the term of the subscription agreement, which is generally one to three years. We expect seasonality will continue to affect our operating results in the future and may reduce our ability to predict cash flow and optimize the timing of our operating expenses.

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

We have provided and may continue to provide guidance about our business, future operating results, and other business metrics. In developing this guidance, our management must make certain assumptions and judgments about our future performance. Some of those key assumptions relate to the impact of the COVID-19 pandemic and the associated economic uncertainty on our business and the timing and scope of economic recovery globally, which are inherently difficult to predict. Furthermore, analysts and investors may develop and publish their own projections of our business, which may form a consensus about our future performance. Our business results may vary significantly from such guidance or that consensus due to a number of factors, many of which are outside of our control, including due to the global economic uncertainty and financial market conditions caused by the COVID-19 pandemic, which could adversely affect our operations and operating results. Furthermore, if our publicly announced guidance of future operating results fails to meet our previously announced guidance or the expectations of securities analysts, investors, or other interested parties, the price of our common stock would decline.

If we are unable to successfully transition to new leadership in key departments, our results could suffer.

Appian has undergone change in departments directly responsible for substantially all of Appian's revenue. While Appian believes its new leaders in these departments are highly qualified and will perform well in their roles, there can be no assurances the transition to new leadership will be executed without any disruption or effect on performance. New leadership requires time to become familiar with Appian's product offerings and its customer base, and such transition could lead to delayed implementation of strategies, revision of key practices and policies, re-training of personnel, and other disruptions.

While we will make efforts to mitigate such risk through extensive collaboration at the executive level, the effects of this transition could have an impact on our ability to sustain our growth in revenues or our ability to retain existing talent within the organization.

We rely on the performance of highly skilled personnel, including senior management and our engineering, professional services, sales, and technology professionals; if we are unable to retain or motivate key personnel or hire, retain, and motivate qualified personnel, our business would be harmed.

We believe our success has depended, and continues to depend, on the efforts and talents of our senior management team, particularly Matthew Calkins, our founder and Chief Executive Officer, and our highly skilled team members, including our sales personnel, professional services personnel, cloud engineering and support personnel, and software engineers. We do not maintain key man insurance on any of our executive officers or key employees. From time to time, there may be changes in our senior management team resulting from the termination or departure of our executive officers and key employees. Our senior management and key employees are employed on an at-will basis, which means they could terminate their employment with us at any time. Many of our executive officers and key employees receive equity compensation as a significant portion of their overall compensation package. A substantial decrease in the market price of our Class A common stock would effectively reduce the compensation of such persons and could increase the risk they depart from our company. The loss of any of our senior management or key employees, particularly Mr. Calkins, could adversely affect our ability to build on the efforts they

have undertaken and to execute our business plan, and we may not be able to find adequate replacements. We cannot ensure we will be able to retain the services of any members of our senior management or other key employees.

Our ability to successfully pursue our growth strategy also depends on our ability to attract, motivate, and retain our personnel. Competition for well-qualified employees in all aspects of our business, including sales personnel, professional services personnel, cloud engineering and support personnel, and software engineers, is intense. Our recruiting efforts focus on elite universities, and our primary recruiting competition are well-known, high-paying firms. Our continued ability to compete effectively depends on our ability to attract new employees and to retain and motivate existing employees. Further, a small portion of our employees are immigrants to the United States or foreign nationals holding visas. If immigration to the United States is further restricted by the federal government, we might lose existing employees who are unable to remain in the United States and our pool of qualified applicants might also be diminished, thereby hampering our recruiting efforts. If we do not succeed in attracting well-qualified employees or retaining and motivating existing employees, our business would be adversely affected.

If we do not continue to innovate and provide a platform that is useful to our customers, we may not remain competitive, and our revenue and operating results could suffer.

Our success depends on continued innovation to provide features that make our platform useful for our customers, our ability to persuade existing customers to expand their use of our platform to additional use cases and additional applications, and to purchase additional software licenses to our platform. We must continue to invest significant resources in research and development in order to continually improve the simplicity and power of our platform. We may introduce significant changes to our platform or develop and introduce new and unproven products, including using technologies with which we have little or no prior development or operating experience. If we are unable to continue offering innovative solutions or if new or enhanced solutions fail to engage our customers, we may be unable to attract additional customers or retain our current customers, which may adversely affect our business, operating results, and financial condition.

We may need to reduce or change our pricing model to remain competitive.

We generally sell our software on a per-user basis and, to a lesser degree, non-user based single application licenses. We have changed and expect we will continue to need to change our pricing model from time to time. As competitors introduce new products that compete with ours or reduce their prices, we may be unable to attract new customers or retain existing customers based on our historical pricing. We also must determine the appropriate price to enable us to compete effectively internationally. Moreover, mid- to large-size enterprises may demand substantial price discounts as part of the negotiation of sales contracts. As a result, we may be required or choose to reduce our prices or change our pricing model, which could adversely affect our business, operating results, and financial condition.

Our business could be adversely affected if our customers are not satisfied with the deployment services provided by us or our partners.

The success of our business depends on our customers' satisfaction with our platform, the support we provide for our platform, and the professional services we provide to help our customers deploy our platform. Professional services may be performed by our own staff, by a third party, or by a combination of the two. Our strategy is to work with third parties to increase the breadth, capability, and depth of capacity for delivery of these services to our customers, and third parties provide a significant portion of our deployment services. If a customer is not satisfied with the quality of work performed by us or a third party or with the type of applications delivered, we could incur additional costs to address the deficiency, which would diminish the profitability of the customer relationship. Further, a customer's dissatisfaction with our services could impair our ability to expand the number of licenses to our software purchased by that customer or adversely affect the customer's renewal of existing licenses. In addition, negative publicity related to our customer relationships, regardless of accuracy, may further damage our business by affecting our ability to compete for new business with actual and prospective customers.

We are substantially dependent upon customer renewals, the addition of new customers, and the continued growth of our subscriptions revenue.

We derive, and expect to increasingly derive in the future, a substantial portion of our revenue from the sale of software subscriptions. For 2020, 2019, and 2018, approximately 65.2%, 58.1%, and 55.6%, respectively, of our total revenue was subscriptions revenue. The market for our platform is still evolving, and competitive dynamics may cause pricing levels to change as the market matures and as existing and new market participants introduce new types of solutions and different approaches to enable customers to address their needs. As a result, we may be forced to reduce the prices we charge for software and may be required to offer terms less favorable to us for new and renewing agreements.

In order for us to improve our operating results, it is important our customers renew their subscriptions with us when their initial term expires, as well as purchase additional subscriptions from us. In general, our customers have no renewal obligation after their initial term expires, and we cannot assure you we will be able to renew subscriptions with any of our customers at the same or higher contract value.

Further, while we offer access to our platform primarily through multi-year subscription agreements, some agreements may have shorter durations. Additionally, some of our contracts limit the amount we can increase prices from period to period or include pricing guarantees. If our customers do not renew their agreements, terminate their agreements, renew their agreements on terms less favorable to us, or fail to purchase additional software subscriptions, our revenue may decline and our operating results would likely be harmed as a result.

Because we generally recognize revenue from cloud subscriptions ratably over the term of the subscription agreement, near term changes in sales may not be reflected immediately in our operating results.

We offer our solution primarily through multi-year cloud subscription agreements and generally recognize revenue ratably over the related subscription period. As a result, much of the revenue we report in each quarter is derived from the recognition of previously unbilled or deferred contract value relating to agreements entered into during prior periods. Accordingly, a decline in new or renewal subscription agreements in any quarter is not likely to be reflected immediately in our revenue results for that quarter. Such declines, however, would negatively affect our revenue, and to a lesser extent, deferred revenue balance in future periods, and the effect of significant downturns in sales and market acceptance of our platform and potential changes in our rate of renewals may not be fully reflected in our results of operations until future periods.

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

We believe developing and maintaining widespread awareness of our brand in a cost-effective manner is critical to achieving widespread acceptance of our platform and attracting new customers. Brand promotion activities may not generate customer awareness or increase revenue and, even if they do, any increase in revenue may not offset the expenses we incur in building our brand. If we fail to successfully promote and maintain our brand or incur substantial expenses, we may fail to attract or retain customers necessary to realize a sufficient return on our brand-building efforts or to achieve the widespread brand awareness critical for broad customer adoption of our platform.

If our platform fails to perform properly or there are defects or disruptions in the rollout of our platform updates or enhancements, our reputation could be adversely affected, our market share could decline, and we could be subject to liability claims.

Our platform is inherently complex and may contain material defects or errors. Any defects in functionality or that cause interruptions in the availability of our platform could result in:

- Loss or delayed market acceptance and sales;
- Breach of warranty claims;
- Sales credits or refunds for prepaid amounts related to unused subscription services;
- Loss of customers;
- Diversion of development and support resources; and/or
- Injury to our reputation.

The costs incurred in correcting any material defects or errors might be substantial and could adversely affect our operating results.

Our customer agreements often provide service level commitments on a monthly basis. If we are unable to meet the stated service level commitments or suffer extended periods of unavailability for our platform, we may be contractually obligated to provide these customers with service credits or refunds for prepaid amounts, or we could face contract terminations. Our revenue could be significantly affected if we suffer unscheduled downtime that exceeds the allowed downtimes under our agreements with our customers.

Because of the large amount of data we collect and manage, it is possible hardware failures or errors in our systems could result in data loss or corruption, or cause the information we collect to be incomplete or contain inaccuracies our customers regard as significant. Furthermore, the availability or performance of our platform could be adversely affected by a number of factors, including customers' inability to access the internet, our customers' increased usage of our cloud offering, the failure of our network or software systems, security breaches, or variability in user traffic for our services. For example, our cloud offering customers access our platform through their internet service providers. If a customer's 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 platform, adversely affect their perception of our platform's reliability, and reduce our revenue. In addition to potential liability, if we experience interruptions in the availability of our cloud offering, our reputation could be adversely affected, and we could lose customers.

We also provide frequent incremental releases of software updates and functional enhancements to our platform. Despite extensive pre-release testing, such new versions occasionally contain undetected errors when first introduced or released. We have, from time to time, found errors in our software, and new errors in our existing software may be detected in the future. Since our customers use our software for important aspects of their business, any errors, defects, disruptions in our platform, or other performance problems with our solution could hurt our reputation and may damage our customers' businesses. If that occurs, our customers may delay or withhold payment to us, elect not to renew, make service credit claims, warranty claims, or other claims against us, and we could lose future sales. The occurrence of any of these events could result in an increase in our bad debt expense, an increase in collection cycles for accounts receivable, decreased future revenue and earnings, require us to increase our warranty provisions, or incur the risk or expense of litigation.

We rely upon AWS to operate our cloud offering; any disruption of or interference with our use of AWS would adversely affect our business, results of operations, and financial condition.

We outsource substantially all of the infrastructure relating to our cloud offering to AWS, which hosts our platform on our customers' behalf. Customers of our cloud offering need to be able to access our platform at any time, without interruption or degradation of performance, and we provide them with service level commitments with respect to uptime. AWS runs its own platform we access, and we are, therefore, vulnerable to service interruptions at AWS. We may experience interruptions, delays, and outages in service and availability from time to time as a result of problems with our AWS provided infrastructure, which could render our cloud offering inaccessible to customers. Additionally, AWS has suffered outages at specific customer locations in the past, rendering the customer unable to access our offering for periods of time. Lack of availability of our AWS infrastructure could be due to a number of potential causes including technical failures, natural disasters, fraud, or security attacks we cannot predict or prevent. Such outages could lead to the triggering of our service level agreements and the issuance of credits to our cloud offering customers, which may impact our operating results.

In addition, if the security of the AWS infrastructure is compromised or believed to have been compromised, our business, results of operations, and financial condition could be adversely affected. It is possible our customers and potential customers would hold us accountable for any breach of security affecting the AWS infrastructure, and we may incur significant liability from those customers and from third parties with respect to any breach affecting AWS systems. Because our agreement with AWS limits AWS's liability for damages, we may not be able to recover a material portion of our liabilities to our customers and third parties from AWS. Customers and potential customers may refuse to do business with us because of the perceived or actual failure of our cloud offering as hosted by AWS, and our operating results could be harmed.

Our agreement with AWS allows AWS to terminate the agreement by providing two years' prior written notice and may allow AWS to terminate in case of a breach of contract if such breach is uncured for 30 days or to terminate upon thirty days' advance written notice if AWS's further provision of services to us becomes impractical for legal or regulatory reasons.

Although we expect we could receive similar services from other third parties if any of our arrangements with AWS are terminated, we could experience interruptions on our platform and in our ability to make our platform available to customers, as well as delays and additional expenses in arranging alternative cloud infrastructure services.

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

In order to grow our business, we anticipate we will continue to depend on relationships with strategic partners to provide broader customer coverage and solution delivery capabilities. Identifying partners, and negotiating and documenting relationships with them, requires significant time and resources. Our agreements with our strategic partners are non-exclusive and do not prohibit them from working with our competitors or offering competing solutions. Our competitors may be effective in providing incentives to third parties to favor their products or services or to prevent or reduce subscriptions to our services. If our partners choose to place greater emphasis on products of their own or those offered by our competitors or do not effectively market and sell our platform, our ability to grow our business and sell software and professional services may be adversely affected. In addition, acquisitions of our partners by our competitors could result in a decrease in the number of our current and potential customers, as our partners may no longer facilitate the adoption of our platform by potential customers.

If we are unsuccessful in establishing or maintaining our relationships with third parties, our ability to compete in the marketplace or to grow our revenue could be impaired and our operating results may suffer. Even if we are successful, we cannot assure you these relationships will result in increased customer usage of our platform or increased revenue.

Because our long-term growth strategy involves further expansion of our sales to customers outside the United States, our business will be susceptible to risks associated with international operations.

A component of our growth strategy involves the further expansion of our operations and customer base internationally. In 2020, 2019, and 2018, revenue generated from customers outside the United States was 33.8%, 32.3%, and 28.7%, respectively, of our total revenue. We currently have international offices in the United Kingdom, Italy, and Australia, which focus primarily on selling and implementing our platform in those regions. In the future, we may expand to other international locations. Our current international operations and future initiatives will involve a variety of risks, including:

- Changes in a specific country's or region's political or economic conditions;
- Unexpected changes in regulatory requirements, taxes, or trade laws;
- More stringent regulations relating to data security and the unauthorized use of, or access to, commercial and personal information, particularly in the European Union;
- Differing labor regulations, especially in the European Union, where labor laws are generally more advantageous to employees as compared to the United States, including deemed hourly wage and overtime regulations in these locations;
- Challenges inherent in efficiently managing an increased number of employees over large geographic distances, including the need to implement appropriate systems, policies, benefits, and compliance programs;
- Difficulties in managing a business in new markets with diverse cultures, languages, customs, legal systems, alternative dispute systems, and regulatory systems;
- Increased travel, real estate, infrastructure, and legal compliance costs associated with international operations;
- Currency exchange rate fluctuations and the resulting effect on our revenue and expenses, and the cost and risk of entering into hedging transactions if we choose to do so in the future;
- Limitations on our ability to reinvest earnings from operations in one country to fund the capital needs of our operations in other countries;
- Laws and business practices favoring local competitors or general preferences for local vendors;
- Limited or insufficient levels of protection of our corporate proprietary information and assets, including intellectual property and customer information and records;
- Political instability or terrorist activities;

- Exposure to liabilities under anti-corruption and anti-money laundering laws, including the U.S. Foreign Corrupt Practices Act and similar laws and regulations in other jurisdictions; and
- Adverse tax burdens and foreign exchange controls that could make it difficult to repatriate earnings and cash.

Our limited experience in operating our business internationally increases the risk any potential future expansion efforts we may undertake will not be successful. If we invest substantial time and resources to expand our international operations and are unable to do so successfully and in a timely manner, our business and operating results will suffer.

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

We intend to continue to make investments to support our business growth and may require additional funds to respond to business challenges, including the need to develop new features or enhance our platform, improve our operating infrastructure, or acquire complementary businesses and technologies. Accordingly, we may need to engage in equity or debt financings to secure additional funds. If we raise additional funds through future issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, and any new equity securities we issue could have rights, preferences, and privileges superior to those of holders of our Class A common stock. Our loan and security agreement with Silicon Valley Bank for our current revolving line of credit includes restrictive covenants relating to our capital raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions, and any debt financing we secure in the future could include similar restrictive covenants. We may not be able to obtain additional financing on terms favorable to us, if at all. If we are unable to obtain adequate financing or financing on terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly impaired, and our business may be adversely affected.

We may not achieve market acceptance of our pre-built solutions, which may adversely impact our financial results.

We have begun the process of developing and releasing pre-built solutions on our software platform in order to maximize the value of our platform to our customers and to reduce the sales cycles associated with software sales to new and existing customers. Each solution requires an investment in development, marketing, sales, support, finance, and legal resources to bring the solution to market. Although we make efforts to identify the solutions that will receive favorable market acceptance, there can be no guarantee any solution will become the source of material revenue, and the investment in the solution may not produce a positive return. If unsuccessful, such solutions may adversely impact our financial results to the extent our expenses increase without any increase in sales, or to the extent that attempted sales of such solutions reduce sales of our existing platform.

If currency exchange rates fluctuate substantially in the future, our financial results, which are reported in U.S. dollars, could be adversely affected.

Generally, contracts executed by our foreign operations are denominated in the currency of that country or region and a portion of our revenue is therefore subject to foreign currency risks. As we continue to expand our international operations, we become more exposed to the effects of fluctuations in currency exchange rates. A strengthening of the U.S. dollar could reduce the dollar value of revenues generated by our customers outside of the United States, adversely affecting our business operations and financial results. We incur expenses for employee compensation and other operating expenses at our non-U.S. locations in the local currency, and fluctuations in the exchange rates between the U.S. dollar and other currencies could result in the dollar equivalent of such expenses being higher. This could have a negative impact on our reported operating results. To date, we have not engaged in any hedging strategies, and any such strategies such as forward contracts, options, and foreign exchange swaps related to transaction exposures we may implement to mitigate this risk may not eliminate our exposure to foreign exchange fluctuations.

We employ third-party licensed software for use in or with our software, and the inability to maintain these licenses or errors in the software we license could result in increased costs, or reduced service levels, which would adversely affect our business.

Our software incorporates certain third-party software obtained under licenses from other companies, including database software from Kx. We anticipate we will continue to rely on such third-party software and development tools from third parties

in the future. Although we believe there are commercially reasonable alternatives to the third-party software we currently license, including open source software, this may not always be the case, or it may be difficult or costly to migrate to other third-party software. Our use of additional or alternative third-party software would require us to enter into license agreements with third parties. In addition, integration of the third-party software used in our software with new third-party software may require significant work and require substantial investment of our time and resources. Also, any undetected errors or defects in third-party software could prevent the deployment or impair the functionality of our software, delay new updates or enhancements to our platform, result in a failure of our platform, and injure our reputation.

If we do not or cannot maintain the compatibility of our platform with third-party applications that our customers use in their businesses, our revenue will decline.

The functionality and attractiveness of our platform depends, in part, on our ability to integrate our platform with third-party applications and platforms, including customer relationship management, human resources information, accounting, and enterprise resource planning systems our customers use and from which they obtain data. Third-party providers of applications and APIs may change the features of their applications and platforms, restrict our access to their applications and platforms, or alter the terms governing use of their applications and APIs and access to those applications and platforms in an adverse manner. Such changes could functionally limit or terminate our ability to use these third-party applications and platforms in conjunction with our platform, which could negatively impact our offerings and harm our business. If we fail to integrate our software with new third-party applications and platforms our customers use, we may not be able to offer the functionality our customers need, which would negatively impact our ability to generate revenue and adversely impact our business.

Catastrophic events may disrupt our business.

Our corporate headquarters are located in northern Virginia. The area around Washington, D.C. could be subjected to domestic or foreign terrorist attacks. Additionally, we rely on our network and third-party infrastructure and enterprise applications, internal technology systems, and our website for our development, marketing, operational support, hosted services, and sales activities. In the event of a major hurricane, earthquake, or catastrophic event such as fire, power loss, telecommunications failure, cyberattack, outbreak of regional or global pandemic diseases, war, or terrorist attack, we may be unable to continue our operations and may endure system interruptions, reputational harm, delays in our software development, lengthy interruptions in our services, breaches of data security, and loss of critical data, all of which could have an adverse effect on our future operating results. For example, the ongoing coronavirus outbreak at the beginning of 2020 has resulted in increased travel restrictions and extended shutdown of certain businesses in the region. At this point, the extent to which the coronavirus may impact our operating results is uncertain.

Adverse economic conditions may negatively impact our business.

Our business depends on the overall demand for enterprise software and on the economic health of our current and prospective customers. The economies of countries in Europe have been experiencing weakness associated with high sovereign debt levels, weakness in the banking sector, and uncertainties surrounding the future of the Euro zone and the United Kingdom's relationship with the European Union. We have operations in the United Kingdom and in Europe and current and potential new customers in Europe. If economic conditions in Europe and other key markets for our platform continue to remain uncertain or deteriorate further, many customers may delay or reduce their information technology spending. This could result in reductions in sales of our platform, a decrease in our renewal rate, longer sales cycles, reductions in subscription duration and value, slower adoption of new technologies, and increased price competition. Any of these events would likely have an adverse effect on our business, operating results, and financial position.

Future acquisitions could disrupt our business and adversely affect our business operations and financial results.

We may choose to expand by acquiring businesses or technologies. For instance, in January 2020, we acquired Novayre Solutions S.L., or Novayre, developer of the Jidoka RPA platform, which we are continuing to integrate along with their personnel. Our ability as an organization to successfully acquire and integrate technologies or businesses is unproven. Acquisitions involve many risks, including the following:

- An acquisition may negatively affect our financial results because it may require us to incur charges or assume substantial debt or other liabilities, may cause adverse tax consequences or unfavorable accounting treatment, may expose us to

claims and disputes by third parties, including intellectual property claims and disputes, or may not generate sufficient financial return to offset additional costs and expenses related to the acquisition;

- We may encounter difficulties or unforeseen expenditures in integrating the business, technologies, products, personnel, or operations of any company we acquire, particularly if key personnel of the acquired company decide not to work for us;
- An acquisition may disrupt our ongoing business, divert resources, increase our expenses, and distract our management;
- An acquisition may result in a delay or reduction of customer purchases for both us and the company acquired due to customer uncertainty about continuity and effectiveness of service from either company;
- We may encounter difficulties in successfully selling, or may be unable to successfully sell, any acquired solutions;
- An acquisition may involve the entry into geographic or business markets in which we have little or no prior experience or where competitors have stronger market positions;
- Our use of cash to pay for an acquisition would limit other potential uses for our cash; and
- If we incur debt to fund such acquisition, such debt may subject us to material restrictions on our ability to conduct our business as well as financial maintenance covenants.

The occurrence of any of these risks could have a material adverse effect on our business operations and financial results. In addition, we may only be able to conduct limited due diligence on an acquired company's operations. Following an acquisition, we may be subject to unforeseen liabilities arising from an acquired company's past or present operations, and these liabilities may be greater than the warranty and indemnity limitations we negotiate. Any unforeseen liability greater than these warranty and indemnity limitations could have a negative impact on our financial condition.

Risks Related to Regulatory Compliance and Governmental Matters

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

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

Because our software could be used to collect and store personal information, domestic and international privacy concerns could result in additional costs and liabilities to us or inhibit sales of our software and subject us to complex and evolving federal, state, and foreign laws and regulations regarding privacy, data protection, and other related matters.

Personal privacy has become a significant issue in the United States and in many other countries where we offer our software for sale. The regulatory framework for privacy issues worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. Many federal, state, and foreign government bodies and agencies have adopted or are considering adopting laws and regulations regarding the collection, use, storage, and disclosure of personal information and breach notification procedures. Interpretation of these laws, rules, and regulations and their application to our software and professional services in the United States and foreign jurisdictions is ongoing and cannot be fully determined at this time.

In the United States, these include rules and regulations promulgated under the authority of the Federal Trade Commission, the Electronic Communications Privacy Act, Computer Fraud and Abuse Act, the Health Insurance Portability and Accountability Act of 1996, the Gramm Leach Bliley Act, the California Consumer Privacy Act, or the CCPA, and other state laws relating to privacy and data security. The CCPA, which became effective on January 1, 2020, drastically changes the ability for individuals to control the use of their personal data. It contains detailed requirements regarding collecting and processing personal information, imposes certain limitations on how such information may be used, and provides rights to

consumers that have never before been available in the past, all of which may be imposed on us by our customers. This could increase our costs of doing business. Further, California voters approved a new privacy law, the California Privacy Rights Act, or CPRA, in the November 3, 2020 election. Effective starting on January 1, 2023, the CPRA will significantly modify 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. New legislation proposed or enacted in various other states will continue to shape the data privacy environment nationally. Certain state laws may be more stringent or broader in scope, or offer greater individual rights, with respect to confidential, sensitive, and personal information than federal, international, or other state laws, and such laws may differ from each other, which may complicate compliance efforts.

Internationally, the European Union adopted a comprehensive general data protection regulation, or the GDPR, which took effect in May 2018 and contains numerous requirements and changes related to rights of data subjects in their personal data, including more robust obligations on data processors and heavier documentation requirements for data protection compliance programs by companies. In addition, recent rulings in the European Union related to the EU-U.S. Privacy Shield and Standard Contractual Clauses have called into question how to legally transfer data from the European Economic Area to the United States.

Virtually every jurisdiction in which we operate has established its own data security and privacy legal framework with which we or our customers must comply. Since we are agnostic as to the data uploaded into our cloud offering by our cloud offering customers or processed by our platform in on-premises deployments, we may be hosting or otherwise processing substantial amounts of individually identifiable health information and other types of personally identifiable information. The effects of any of this legislation could be potentially far-reaching and may require us to modify our data management practices and to incur substantial expense in an effort to comply.

In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards that may apply to us. Because the interpretation and application of privacy and data protection laws are still uncertain, it is possible these laws and other actual or alleged legal obligations such as contractual or self-regulatory obligations may be interpreted and applied in a manner inconsistent with our existing data management practices or the features of our platform. If so, in addition to the possibility of fines, lawsuits, and other claims, we could be required to fundamentally change our business activities and practices or modify our software, which could have an adverse effect on our business. Any inability to adequately address privacy concerns, even if unfounded, or comply with applicable privacy or data protection laws, regulations, and policies, could result in additional cost and liability to us, damage our reputation, inhibit sales, and adversely affect our business.

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

If our platform fails to function in a manner that allows our customers to operate in compliance with regulations and/or industry standards, our revenue and operating results could be harmed.

Certain of our customers use our platform to create applications that ensure secure communications given the nature of the content being distributed and associated applicable regulatory requirements. Governmental and other customers may also require our platform to comply with certain privacy, security, and other certifications and standards. Our cloud platform holds various security certifications from government agencies and industry organizations, including the Federal Risk and Authorization Management Program (FedRAMP) compliance, HITRUST certification, and meets the ISO 27001, Payment Card Industry Data Security Standard (PCI DSS), and the various United States Health Insurance Portability and Accountability Act (HIPAA) standards. Governments and industry organizations may also adopt new laws, regulations, or requirements or make changes to existing laws or regulations that could impact the demand for, or value of, our applications such as the European Banking Authority's regulations updated in September 2019 and the CCPA that took effect January 1, 2020. If we fail to maintain our current security certifications and/or to continue to meet security standards, or if we are unable to adapt our platform to changing legal and regulatory standards or other requirements in a timely manner, our customers may lose confidence in our platform, and our business could be negatively impacted.

Changes in laws and regulations related to the internet or changes in the internet infrastructure itself may diminish the demand for our platform and could have a negative impact on our business.

The future success of our business, and particularly our cloud offering, depends upon the continued use of the internet as a primary medium for commerce, communication, and business applications. Federal, state, or foreign government bodies or agencies have in the past adopted, and may in the future adopt, laws or regulations affecting the use of the internet as a commercial medium. Changes in these laws or regulations could require us to modify our platform in order to comply with these changes. In addition, government agencies or private organizations may begin to impose taxes, fees, or other charges for accessing the internet or commerce conducted via the internet. These laws or charges could limit the growth of internet-related commerce or communications generally, resulting in reductions in the demand for internet-based solutions such as ours.

In addition, the use of the internet as a business tool could be adversely affected due to delays in the development or adoption of new standards and protocols to handle increased demands of internet activity, security, reliability, cost, ease of use, accessibility, and quality of service. The performance of the internet and its acceptance as a business tool have been adversely affected by viruses, worms, and similar malicious programs, along with distributed denial of service (DDoS) and similar attacks. As a result, the internet has experienced a variety of outages and other delays as a result of such damage to or attacks on portions of its infrastructure. If the use of the internet is adversely affected by these issues, demand for our platform could suffer.

We are subject to anti-corruption laws with respect to our domestic and international operations, and non-compliance with such laws can subject us to criminal and/or civil liability and materially harm our business.

We are subject to the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the United Kingdom Bribery Act 2010, and other anti-corruption laws in countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit our company from authorizing, offering, or providing, directly or indirectly, improper payments or benefits to recipients in the public or private sector. We use third-party law firms, accountants, and other representatives for regulatory compliance, sales, and other purposes in several countries. We can be held liable for the corrupt or other illegal activities of these third-party representatives, our employees, contractors, and other agents, even if we do not explicitly authorize such activities. In addition, although we have implemented policies and procedures to ensure compliance with anti-corruption laws, there can be no assurance all of our employees, representatives, contractors, or agents will comply with these laws at all times.

Noncompliance with these laws could subject us to whistleblower complaints, investigations, sanctions, settlements, prosecution, other enforcement actions, disgorgement of profits, significant fines, damages, other civil and criminal penalties or injunctions, suspension and/or debarment from contracting with certain persons, the loss of export privileges, reputational harm, adverse media coverage, and other collateral consequences. If any subpoenas or investigations are launched, or governmental or other sanctions are imposed, or if we do not prevail in any possible civil or criminal litigation, our business, results of operations, and financial condition could be materially harmed. In addition, responding to any action will likely result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees. Enforcement actions and sanctions could further harm our business, results of operations, and financial condition. Moreover, as an issuer of securities, we also are subject to the accounting and internal controls provisions of the FCPA. These provisions require us to maintain accurate books and records and a system of internal controls sufficient to detect and prevent corrupt conduct. Failure to abide by these provisions may have an adverse effect on our business, operations, or financial condition.

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

The United States and other countries maintain and administer export and import laws and regulations, including various economic and trade sanctions including those administered by the Office of Foreign Assets Control, or OFAC, which apply to our business. We are required to comply with these laws and regulations. If we fail to comply with such laws and regulations, we and certain of our employees could be subject to substantial civil or criminal penalties, including the possible loss of export or import privileges, fines which may be imposed on us and responsible employees or managers, and, in extreme cases, the incarceration of responsible employees or managers.

Changes in our platform, or changes in applicable export or import laws and regulations, may create delays in the introduction and sale of our platform in international markets or, in some cases, prevent the export or import of our platform to certain countries, governments or persons altogether. Any change in export or import laws and regulations or economic or trade sanctions, shift in the enforcement or scope of existing laws and regulations, or change in the countries, governments, persons, or technologies targeted by such laws and regulations could also result in decreased use of our platform, or in our decreased ability to export or sell our platform to existing or potential customers. Any decreased use of our services or limitation on our ability to export or sell our services would likely adversely affect our business, financial condition, and results of operations.

We incorporate encryption technology into certain of our products. Encryption products may be exported outside of the United States only with the required export authorization, including by license, license exception, or other appropriate government authorization. Obtaining the necessary export license or other authorization for a particular sale may be time-consuming and may result in the delay or loss of sales opportunities. In addition, various countries regulate the import of certain encryption technology, including import permitting and licensing requirements, and have enacted laws that could limit our ability to distribute our products or could limit our customers' ability to implement our products in those countries. Although we take precautions to prevent our products from being provided in violation of such laws, our products may have been in the past, and could in the future, be provided inadvertently in violation of such laws, despite the precautions we take. Governmental regulation of encryption technology and regulation of imports or exports, or our failure to obtain required import or export approval for our products, could harm our international sales and adversely affect our revenue.

Moreover, U.S. export control laws and economic sanctions programs prohibit the provision of services to countries, governments, and persons subject to U.S. economic embargoes and trade sanctions. Even though we take precautions to prevent our platform from being used by U.S. sanctions targets, our platform could be used by a sanctioned person or in an embargoed country despite such precautions. Any such shipment could have negative consequences, including government investigations, penalties, and reputational harm.

Risks Related to Our Intellectual Property

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

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

As of December 31, 2020, we had five granted patents and six pending patent applications related to our platform and its technology. We have registered the "Appian" name and logo in the United States and certain other countries. We have registrations and/or pending applications for additional marks in the United States. We cannot assure you any current or future applications for registrations for patent or trademark applications will result in the grant of any valid, enforceable intellectual property rights. Further, we cannot assure you any granted patent or trademark will provide the protection we seek, will be valid if challenged, or will be sufficiently broad in actions against alleged infringers. Moreover, any of our granted intellectual property rights may be rendered invalid by future changes in the law, defects in our prosecution processes, or preexisting technology, rights, or marks.

In order to protect our unpatented proprietary technologies and processes, we rely on trade secret laws and confidentiality and invention assignment agreements with our employees, consultants, strategic partners, vendors, and others. Despite our efforts to protect our proprietary technology and trade secrets, unauthorized parties may attempt to misappropriate, copy, reverse engineer, or otherwise obtain and use them. In addition, others may independently discover our trade secrets, in which case we would not be able to assert trade secret rights or develop similar technologies and processes. Further, the contractual provisions we enter into may not prevent unauthorized use or disclosure of our proprietary technology or intellectual property rights and may not provide an adequate remedy in the event of any such unauthorized use or disclosure.

Policing unauthorized use of our technologies, trade secrets, and intellectual property is difficult, expensive, and time-consuming, particularly in foreign countries where the laws may not be as protective of intellectual property rights as those in

the United States and where mechanisms for enforcement of intellectual property rights may be weak. To the extent we expand our activities outside of the United States, our exposure to unauthorized copying and use of our platform and proprietary information may increase. We may be unable to determine the extent of any unauthorized use or infringement of our platform, technologies, or intellectual property rights.

There can be no assurance the steps we take will be adequate to protect our proprietary technology and intellectual property, that others will not develop or patent similar or superior technologies, products or services, or that our trademarks, patents, and other intellectual property will not be challenged, invalidated, or circumvented by others. Furthermore, effective trademark, patent, copyright, and trade secret protection may not be available in every country in which our software is available or where we have employees or independent contractors.

In order to protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. Litigation brought to protect and enforce our intellectual property rights 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 failure to secure, protect, and enforce our intellectual property rights could seriously adversely affect our brand and adversely impact our business.

We may be subject to intellectual property rights claims by third parties, which are extremely costly to defend, could require us to pay significant damages and could limit our ability to use certain technologies.

Companies in the software and technology industries, including some of our current and potential competitors, own significant numbers of patents, copyrights, trademarks, and trade secrets and frequently enter into litigation based on allegations of infringement or other violations of intellectual property rights. In addition, many of these companies have the capability to dedicate substantially greater resources to enforce their intellectual property rights and to defend claims that may be brought against them. The litigation may involve patent holding companies or other adverse patent owners that have no relevant product revenue and against which our patents may therefore provide little or no deterrence. In the past, we have been subject to allegations of patent infringement that were unsuccessful, and we may in the future be subject to claims we have misappropriated, misused, or infringed other parties' intellectual property rights, and, to the extent we gain greater market visibility or face increasing competition, we face a higher risk of being the subject of intellectual property infringement claims, which is not uncommon with respect to enterprise software companies. We also generally grant our customers ownership of any custom applications we develop for them, subject to our continued ownership of our pre-existing intellectual property rights and, in the past, a customer for whom we have developed custom applications has incorrectly alleged applications we have independently developed infringed the customer's intellectual property rights. In addition, we have in the past and may in the future be subject to claims employees or contractors, or we, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of our competitors or other parties. To the extent intellectual property claims are made against our customers based on their usage of our technology, we have certain obligations to indemnify and defend such customers from those claims. The term of our contractual indemnity provisions often survives termination or expiration of the applicable agreement. Large indemnity payments, defense costs, or damage claims from contractual breach could harm our business, results of operations, and financial condition.

There may be third-party intellectual property rights, including issued or pending patents that cover significant aspects of our technologies or business methods. Any intellectual property claims, with or without merit, could be very time-consuming, could be expensive to settle or litigate, could divert our management's attention and other resources, and could result in adverse publicity. These claims could also subject us to making substantial payments for legal fees, settlement payments, and other costs or damages, potentially including treble damages if we are found to have willfully infringed patents or copyrights. These claims could also result in our having to stop making, selling, offering for sale, or using technology found to be in violation of a third party's rights. We might be required to seek a license for the third-party intellectual property rights, which may not be available on reasonable terms or at all. Moreover, to the extent we only have a license to any intellectual property used in our platform, there may be no guarantee of continued access to such intellectual property, including on reasonable terms. As a result, we may be required to develop alternative non-infringing technology, which could require significant effort and expense. If a third party is able to obtain an injunction preventing us from accessing such third-party intellectual property rights, or if we cannot license or develop technology for any infringing aspect of our business, we would be forced to limit or stop sales of our software or cease business activities covered by such intellectual property and may be unable to compete effectively. Any of these results would adversely affect our business, results of operations, financial condition, and cash flows.

Portions of our platform utilize open source software, and any failure to comply with the terms of one or more of these open source licenses could negatively affect our business.

Our software contains software licensed to us by third parties under so-called “open source” licenses, including the GNU Lesser General Public License, the BSD License, and others. From time to time, there have been claims against companies that distribute or use open source software in their products and services, asserting such open source software infringes the claimants’ intellectual property rights. We could be subject to suits by parties claiming what we believe to be licensed open source software infringes their intellectual property rights. Use and distribution of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code. In addition, certain open source licenses require source code for software programs subject to the license be made available to the public and that any modifications or derivative works to such open source software continue to be licensed under the same terms.

Although we monitor our use of open source software in an effort both to comply with the terms of the applicable open source licenses and to avoid subjecting our software to conditions we do not intend, the terms of many open source licenses have not been interpreted by U.S. courts, and there is a risk these licenses could be construed in a way that could impose unanticipated conditions or restrictions on our ability to commercialize our platform. By the terms of certain open source licenses, we could be required to release the source code of our software and to make our software available under open source licenses, if we combine or distribute our software with open source software in a certain manner. In the event portions of our software are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all, or a portion of, that software or otherwise be limited in the licensing of our software, each of which could reduce or eliminate the value of our platform. Many of the risks associated with usage of open source software cannot be eliminated and could negatively affect our business, results of operations, and financial condition.

Risks Related to Tax and Accounting Matters

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

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience and on various other assumptions we believe to be reasonable under the circumstances, as provided in Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of this Annual Report on Form 10-K. The results of these estimates form the basis for making judgments about the carrying values of assets, liabilities, and equity, and the amount of revenue and expenses. Significant assumptions and estimates used in preparing our consolidated financial statements include those related to revenue recognition, income taxes and the related valuation allowance, and stock-based compensation. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our Class A common stock.

Our operating results may be negatively affected by additional tax liabilities.

We currently collect and remit sales and use, value added, and other transaction taxes in certain of the jurisdictions where we do business based on our assessment of whether tax is owed by us in such jurisdictions. However, in some jurisdictions in which we do business, we do not believe we owe such taxes, and therefore we currently do not collect and remit such taxes or record contingent tax liabilities in those jurisdictions. Further, due to uncertainty in the application and interpretation of applicable tax laws in various jurisdictions, we may be exposed to sales and use, value added, or other transaction tax liability. A successful assertion that we are required to pay additional taxes in connection with sales of our platform, or the imposition of new laws or regulations requiring the payment of additional taxes, would create increased costs and administrative burdens for us. If we are subject to additional taxes and determine to offset such increased costs by collecting and remitting sales taxes from our customers, or otherwise passing those costs through to our customers, companies may be discouraged from using our platform. Any increased tax burden may decrease our ability or willingness to compete in relatively burdensome tax jurisdictions, result in substantial tax liabilities related to past sales, or otherwise harm our business and operating results.

In addition, as a multinational organization, we may be subject to taxation in several jurisdictions around the world with increasingly complex tax laws and the amount of taxes we pay in these jurisdictions could increase substantially as a result of changes in the applicable tax principles, including increased tax rates, new tax laws, or revised interpretations of existing tax laws and precedents. Furthermore, the authorities in these jurisdictions could review our tax returns and impose additional tax, interest, and penalties, and the authorities could claim various withholding requirements apply to us or our subsidiaries or assert benefits of tax treaties are not available to us or our subsidiaries, any of which could have a material impact on us and the results of our operations.

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

As of December 31, 2020, we had gross U.S. federal and state net operating loss carryforwards, or NOLs, of \$183.9 million and \$177.2 million, respectively, available to offset future taxable income. NOLs generated in tax years ended on or prior to December 31, 2017 will substantially expire by 2037 if unused. As a result of certain provisions in the Tax Cuts and Jobs Act of 2017, or the TCJA, as modified by the Coronavirus Aid, Relief, and Economic Security Act, or CARES Act, federal NOLs generated in tax years beginning after December 31, 2017 may be carried forward indefinitely but, in the case of tax years beginning after 2020, may only be used to offset 80% of our taxable income annually. Under the TCJA, as modified by the CARES Act, federal NOLs generated in taxable years beginning in 2018, 2019, and 2020 will similarly carry forward indefinitely but will not be subject to such 80% of annual taxable income limitation. Under the provisions of the Internal Revenue Code of 1986, as amended, or the Internal Revenue Code, substantial changes in our ownership may limit the amount of pre-change NOLs that can be utilized annually in the future to offset taxable income. Section 382 of the Internal Revenue Code imposes limitations on a company's ability to use NOLs if a company experiences a more-than-50-percent ownership change over a three-year testing period. Based upon our analysis as of December 31, 2020, we have determined we do not expect these limitations to impair our ability to use our NOLs prior to expiration. However, if changes in our ownership occur in the future, our ability to use our NOLs may be further limited. For these reasons, we may not be able to utilize a material portion of the NOLs, even if we achieve profitability.

As of December 31, 2020, we also had gross foreign NOLs of \$78.6 million, primarily at our Swiss subsidiary, Appian Software International. These NOLs will begin to expire in 2021 to 2027, if unused. If we are limited in our ability to use our NOLs in future years in which we have taxable income, we will pay more taxes than if we were able to fully utilize our NOLs. This could adversely affect our operating results and the market price of our Class A common stock.

Forecasting our estimated annual effective tax rate for financial accounting purposes is complex and subject to uncertainty, and there may be material differences between our forecasted and actual tax rates.

Forecasts of our income tax position and effective tax rate for financial accounting purposes are complex and subject to uncertainty because our income tax position for each year combines the effects of a mix of profits earned and losses incurred by us in various tax jurisdictions with a broad range of income tax rates, as well as changes in the valuation of deferred tax assets and liabilities, the impact of various accounting rules and changes to these rules and tax laws, the results of examinations by various tax authorities, and the impact of any acquisition, business combination, or other reorganization or financing transaction. To forecast our global tax rate, we estimate our pre-tax profits and losses by jurisdiction and forecast our tax expense by jurisdiction. If the mix of profits and losses, our ability to use tax credits, or effective tax rates by jurisdiction is different than those estimated, our actual tax rate could be materially different than forecasted, which could have a material impact on our results of business, financial condition, and results of operations.

We are obligated to develop and maintain proper and effective internal controls over financial reporting, and any failure to maintain the adequacy of these internal controls may adversely affect investor confidence in our company and, as a result, the value of our Class A common stock.

We are required, pursuant to Section 404 of the Sarbanes-Oxley Act, or Section 404, to furnish a report by management on, among other things, the effectiveness of our internal control over financial reporting on an annual basis. This assessment includes disclosure of any material weaknesses identified by our management in our internal control over financial reporting.

During the evaluation and testing process of our internal controls, if we identify one or more material weaknesses in our internal control over financial reporting, we will be unable to assert our internal control over financial reporting is effective. While we have established certain procedures and controls over our financial reporting processes, we cannot assure you these

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

Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition or results of operations. If we are unable to conclude our internal control over financial reporting is effective, or if our independent registered public accounting firm determines we have a material weakness or significant deficiency in our internal control over financial reporting, we could lose investor confidence in the accuracy and completeness of our financial reports, the market price of our Class A common stock could decline, and we could be subject to sanctions or investigations by the Nasdaq Stock Market, the SEC, or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

Risks Related to Our Class A Common Stock

The dual class structure of our common stock and the existing ownership of capital stock by Matthew Calkins, our founder and Chief Executive Officer, has the effect of concentrating voting control with Mr. Calkins for the foreseeable future, which will limit your ability to influence corporate matters.

Our Class B common stock has ten votes per share, and our Class A common stock has one vote per share. Given the greater number of votes per share attributed to our Class B common stock, our Class B stockholders collectively beneficially owned shares representing approximately 89% of the voting power of our outstanding capital stock as of December 31, 2020. Further, Mr. Calkins, our founder and Chief Executive Officer, together with his affiliates, collectively beneficially owned shares representing approximately 77% of the voting power of our outstanding capital stock as of December 31, 2020. Consequently, Mr. Calkins, together with his affiliates, is able to control a majority of the voting power even if their stock holdings represent as few as approximately 25% of the outstanding number of shares of our common stock. This concentrated control will limit your ability to influence corporate matters for the foreseeable future. For example, Mr. Calkins will be able to control elections of directors, amendments of our certificate of incorporation or bylaws, increases to the number of shares available for issuance under our equity incentive plans or adoption of new equity incentive plans, and approval of any merger or sale of assets for the foreseeable future. This concentrated control could also discourage a potential investor from acquiring our Class A common stock due to the limited voting power of such stock relative to the Class B common stock and might harm the market price of our Class A common stock. In addition, Mr. Calkins has the ability to control the management and major strategic investments of our company as a result of his position as our Chief Executive Officer and his ability to control the election or replacement of our directors. As a board member and officer, Mr. Calkins owes a fiduciary duty to our stockholders and must act in good faith in a manner he reasonably believes to be in the best interests of our stockholders. However, as a stockholder, even a controlling stockholder, Mr. Calkins is entitled to vote his shares, and shares over which he has voting control, in his own interests, which may not always be in the interests of our stockholders generally.

Future transfers by Mr. Calkins and other holders of Class B common stock will generally result in those shares converting on a 1:1 basis to Class A common stock, which will have the effect, over time, of increasing the relative voting power of those holders of Class B common stock who retain their shares in the long-term.

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

We have never declared or paid any cash dividends on our common stock, and we do not intend to pay any cash dividends in the foreseeable future. Although we paid a cash dividend in connection with the conversion of our Series A preferred stock to Class B common stock immediately prior to the closing of the IPO, which was agreed to at the time of the original issuance of the Series A preferred stock, we anticipate we will retain all of our future earnings for use in the development of our business and for general corporate purposes. Additionally, our ability to pay dividends on our common stock is limited by restrictions under the terms of our loan and security agreement with Silicon Valley Bank. Any determination to pay dividends in the future will be at the discretion of our Board of Directors. Accordingly, investors must rely on sales of their Class A common stock after price appreciation, which may never occur, as the only way to realize any future gains on their investments.

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

In addition to the effects of our dual class structure, provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change in control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our Board of Directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which generally prohibit a Delaware corporation from engaging in any of a broad range of business combinations with any “interested” stockholder for a period of three years following the date on which the stockholder became an “interested” stockholder. Any of the foregoing provisions could limit the price investors might be willing to pay in the future for shares of our Class A common stock, and they could deter potential acquirers of our company, thereby reducing the likelihood you would receive a premium for your shares of our Class A common stock in an acquisition.

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

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

GENERAL RISK FACTORS

The effects of national and global epidemics, including the recent COVID-19 pandemic, could have an adverse impact on our business, operations, and the markets and communities in which we operate.

In March 2020, the World Health Organization declared the outbreak of COVID-19 a pandemic. Our business and operations could be adversely affected by national and global epidemics, including the recent COVID-19 pandemic, impacting the markets and communities in which we operate.

In response to the COVID-19 pandemic, many state, local, and foreign governments have put in place, and others in the future may put in place, quarantines, executive orders, shelter-in-place orders, and similar government orders and restrictions in order to control the spread of the disease. Such orders or restrictions, or the perception that such orders or restrictions could occur, have resulted in business closures, work stoppages, slowdowns and delays, work-from-home policies, and travel restrictions, among other effects that could negatively impact productivity and disrupt our operations. For example, we have implemented a work-from-home policy for employees, and we may take further actions that alter our operations as may be required by federal, state, or local authorities or which we determine are in the best interests of our employees and stockholders.

In addition, while the potential impact and duration of the COVID-19 pandemic on the global economy and our business in particular may be difficult to assess or predict, the pandemic has resulted in, and may continue to result in, significant disruption of global financial markets, reducing our ability to access capital, which could in the future negatively affect our liquidity. The COVID-19 pandemic also could reduce the demand for our customers' products and services, which could negatively impact our customers' willingness to renew or enter into contracts with us or our ability to collect accounts receivable on a timely basis, which, if significant, could materially and adversely affect our business, results of operations, and financial condition.

The global pandemic of COVID-19 continues to rapidly evolve, and we will continue to monitor the COVID-19 situation closely. The ultimate impact of the COVID-19 pandemic or a similar health epidemic is highly uncertain and subject to change. We do not yet know the full extent of potential delays or impacts on our business, operations, or the global economy as a whole, which makes our future results difficult to predict. In addition, to the extent the ongoing COVID-19 pandemic adversely affects our business and results of operations, it may also have the effect of heightening many of the other risks and uncertainties described herein.

Unfavorable conditions in the global economy or the vertical markets we serve could limit our ability to grow our business and negatively affect our operating results.

General worldwide economic conditions have experienced significant instability due to the global economic uncertainty and financial market conditions caused by the COVID-19 pandemic. These conditions make it extremely difficult for customers and us to accurately forecast and plan future business activities and could cause customers to reduce or delay their software spending. For example, we believe there could be some short-term impact from the COVID-19 pandemic on spending by our customers. At this time, the potential impact on customer spend from the COVID-19 pandemic is difficult to predict and, therefore, it is not possible to fully determine the impact on our future results. Historically, economic downturns have resulted in overall reductions in software spending. If macroeconomic conditions deteriorate or are characterized by uncertainty or volatility, customers may curtail or freeze spending on software in general and for software such as ours specifically, which could have an adverse impact on our business, financial condition, and operating results.

We have historically generated a majority of our revenue from customers in the financial services, government, and life sciences verticals. While these verticals have not been affected as severely by weak economic conditions caused by COVID-19 as the retail, hospitality, and entertainment industries, we cannot assure these verticals will not suffer more severe losses in the future. Furthermore, we cannot predict the timing, strength, or duration of any economic slowdown or recovery. In addition, even if the overall economy is robust, we cannot assure the market for services such as ours will experience growth or that we will experience growth.

Our stock price may be volatile, and you may lose some or all of your investment.

The market price of our Class A common stock may be highly volatile and may fluctuate substantially as a result of a variety of factors. Since shares of our Class A common stock were sold in our initial public offering, or IPO, in May 2017 at a price of \$12.00 per share, our stock price has ranged from an intraday low of \$14.60 to an intraday high of \$260.00 through February 15, 2021. Factors that may affect the market price of our Class A common stock and our ability to raise capital through the sale of additional equity securities include:

- Actual or anticipated fluctuations in our financial condition and operating results;
- Variance in our financial performance from expectations of securities analysts;
- Changes in the prices of subscriptions to our platform;

- Changes in our projected operating and financial results;
- Changes in laws or regulations applicable to our platform;
- Announcements by us or our competitors of significant business developments, acquisitions, or new offerings;
- Our involvement in any litigation;
- Our sale of our Class A common stock or other securities in the future;
- Changes in senior management or key personnel;
- The trading volume of our Class A common stock;
- Trading activity by one or both large stockholders who together owned approximately 32% of our publicly traded Class A common stock as of December 31, 2020;
- Changes in the anticipated future size and growth rate of our market; and
- General economic, regulatory, and market conditions.

The stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations have often been unrelated or disproportionate to the operating performance of those companies. Broad market and industry fluctuations, as well as general economic, political, regulatory, and market conditions, may negatively impact the market price of our Class A common stock. In the past, companies that have experienced volatility in the market price of their securities have been subject to securities class action litigation. We may be the target of this type of litigation in the future, which could result in substantial costs and divert our management's attention.

If securities or industry analysts do not publish research or reports about our business, or publish negative reports about our business, our stock price and trading volume could decline.

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

Item 1B. Unresolved Staff Comments.

Not applicable.

Item 2. Properties.

Our corporate headquarters occupies approximately 240,000 square feet in McLean, Virginia under an operating lease that expires in October 2031. As of December 31, 2020, we also lease space in the United Kingdom, Italy, and Australia under operating lease agreements with various expiration dates through 2026. In addition, we utilize flexible work spaces depending on the occupancy needs in each of the countries we operate in. We believe our facilities are suitable and adequate to meet our needs.

Item 3. Legal Proceedings.

From time to time, we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business. We are not presently a party to any legal proceedings that, if determined adversely to us, would individually or taken together have a material adverse effect on our business, operating results, financial condition, or cash flows. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management time and resources, and other factors.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

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

Market Information

Our Class A common stock is listed on the Nasdaq Global Market under the symbol "APPN". Our Class B common stock is not listed or traded on any stock exchange.

As of February 15, 2021, there were 16 holders of record of our Class A common stock and 39 holders of record of our Class B common stock. Because many of our shares of Class A common stock are held by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of stockholders represented by these record holders.

Dividends

We have never declared or paid, and do not anticipate declaring or paying in the foreseeable future, any cash dividends on our common stock. Any future determination as to the declaration and payment of dividends, if any, will be at the discretion of our Board of Directors, subject to applicable laws, and will depend on then existing conditions, including our financial condition, operating results, contractual restrictions, capital requirements, business prospects, and other factors our Board of Directors may deem relevant.

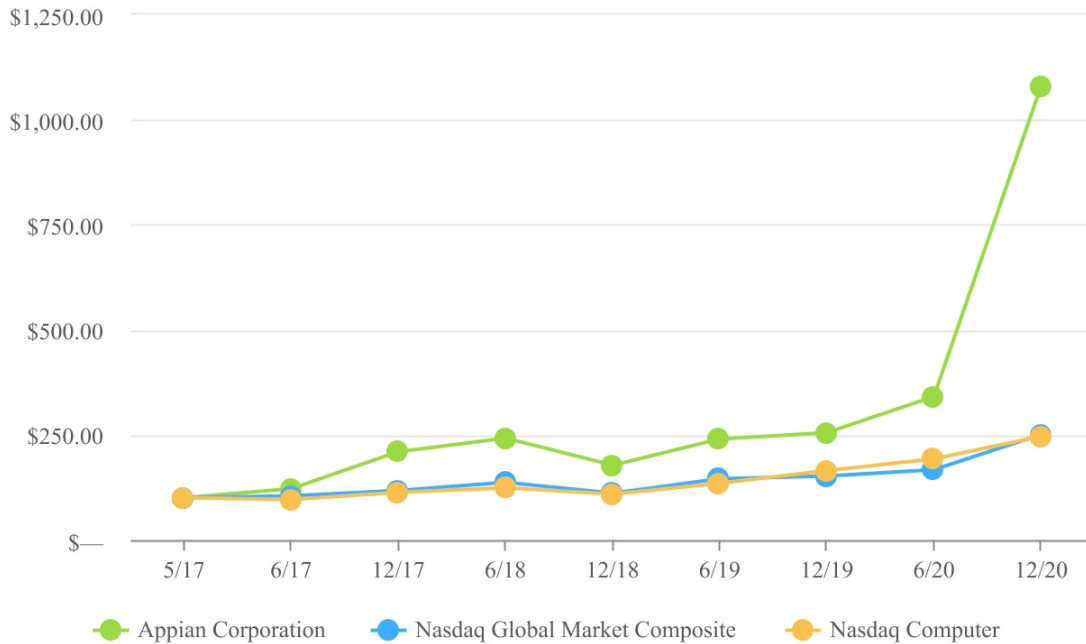
Stock Performance Graph

This section is not deemed "filed" with the SEC and shall not be deemed incorporated by reference into any of our other filings under the Exchange Act or the Securities Act, irrespective of any general incorporation language in any such filing.

The following graph shows a comparison from May 25, 2017 (the date our Class A common stock commenced trading on the Nasdaq Global Market) through December 31, 2020, of the cumulative total return for an investment of \$100 in our Class A common stock, the Nasdaq Global Market Composite Index, and the Nasdaq Computer Index. Data for the Nasdaq Global Market Composite Index and the Nasdaq Computer Index assume reinvestment of any dividends. The comparisons in the graph below are based upon historical data and are not indicative of, nor intended to forecast, future performance of our common stock.

COMPARISON OF CUMULATIVE TOTAL RETURN

Among Appian Corporation, the Nasdaq Global Market Composite Index, and the Nasdaq Computer Index



	May 25, 2017	June 30, 2017	December 31, 2017	June 30, 2018	December 31, 2018	June 30, 2019	December 31, 2019	June 30, 2020	December 31, 2020
Appian Corporation	\$ 100.00	\$ 120.92	\$ 209.73	\$ 240.91	\$ 177.95	\$ 240.31	\$ 254.56	\$ 341.44	\$ 1,079.88
Nasdaq Global Market Composite	\$ 100.00	\$ 105.12	\$ 117.68	\$ 137.10	\$ 110.09	\$ 145.34	\$ 151.77	\$ 167.07	\$ 250.25
Nasdaq Computer	\$ 100.00	\$ 96.18	\$ 113.49	\$ 124.53	\$ 109.31	\$ 134.76	\$ 164.33	\$ 193.05	\$ 246.46

Recent Sales of Unregistered Securities

Not applicable.

Use of Proceeds from Public Offering of Common Stock

Not applicable.

Purchase of Equity Securities by the Issuer and Affiliated Purchases

None.

Item 6. Selected Financial Data

Reserved.

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

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

Overview

We provide a low-code automation platform that accelerates the creation of high-impact business applications, enabling our customers to automate the most important aspects of their business. Global organizations use our applications to improve customer experience, achieve operational excellence, and simplify global risk management and compliance.

With our platform, organizations can rapidly and easily design, build, and implement powerful, enterprise-grade custom applications through our intuitive, visual interface with little or no coding required. Our customers have used applications built on our platform to launch new business lines, automate vital employee workflows, manage complex trading platforms, accelerate drug development, and build global procurement systems. With our platform, decision makers can reimagine their products, services, processes, and customer interactions by removing much of the complexity and many of the challenges associated with traditional approaches to software development.

We have generated the majority of our revenue from sales of subscriptions, which include (1) SaaS subscriptions bundled with maintenance and support and hosting services and (2) term license subscriptions bundled with maintenance and support. Our subscription fees are based primarily on the number of users who access and utilize the applications built on our platform or, alternatively, non-user based single application licenses. Our customer contract terms generally vary from one to three years with most providing for payment in advance on an annual, quarterly, or monthly basis. Due to the variability of our billing terms and the episodic nature of our customers purchasing additional subscriptions, we do not believe changes in our deferred revenue in a given period are directly correlated with our revenue growth.

Since inception, we have invested in our Customer Success organization to help ensure customers are able to build and deploy applications on our platform. We have several strategic partnerships, including with KPMG, PwC, Accenture, and Deloitte, for them to refer customers to us in order to purchase subscriptions and then to provide professional services directly to the customers using our platform. We intend to further grow our base of strategic partners to provide broader customer coverage and solution delivery capabilities. In addition, over time we expect professional services revenue as a percentage of total revenue to decline as we increasingly rely on strategic partners to help our customers deploy our software. We believe our investment in professional services, including strategic partners building their practices around Appian, will drive increased adoption of our platform.

As of December 31, 2020, we had 693 customers in a variety of industries, of which 548 customers were commercial and 145 customers were government or non-commercial entities. Our customers include financial services, government, life sciences, telecommunications, media, energy, manufacturing, and transportation organizations. Generally, our sales force targets its efforts to organizations with over 2,000 employees and \$2 billion in annual revenue. As of December 31, 2020, 25% of our commercial customers were Global 2000 organizations, and 60 of our customers were Fortune 500 companies. Revenue from government agencies represented 18.1%, 17.1%, and 15.7% of our total revenue in 2020, 2019, and 2018, respectively. No single end-customer accounted for more than 10% of our total revenue in 2020, 2019, and 2018.

Our platform supports multiple languages to facilitate collaboration and address challenges in multinational organizations. We offer our platform globally. In 2020, 2019, and 2018, 33.8%, 32.3%, and 28.7%, respectively, of our total revenue was generated from customers outside of the United States. As of December 31, 2020, we operated in 12 countries. We believe we have a significant opportunity to grow our international footprint. We are investing in new geographies, including through investment in direct and indirect sales channels, professional services, and customer support and implementation partners.

We have experienced strong revenue growth, with revenue of \$304.6 million, \$260.4 million, and \$226.7 million in 2020, 2019, and 2018, respectively. Our subscriptions revenue was \$198.7 million, \$151.3 million, and \$126.0 million in 2020, 2019,

and 2018, respectively, and includes sales of our SaaS subscriptions, on-premises term license subscriptions, and maintenance support. Our cloud subscription revenue was \$129.2 million, \$95.0 million, and \$67.4 million in 2020, 2019, and 2018, respectively.

We have invested in developing our platform, expanding our sales and marketing and research and development capabilities, and providing general and administrative resources to support our growth. We intend to continue to invest in our business to take advantage of our market opportunity. As a result, we incurred net losses of \$33.5 million, \$50.7 million, and \$49.5 million in 2020, 2019, and 2018, respectively. We also used cash in operations of \$7.6 million, \$8.9 million, and \$31.3 million in 2020, 2019, and 2018, respectively.

COVID-19

Beginning in late 2019 and continuing into 2021, the outbreak of the novel coronavirus disease, or COVID-19, has resulted in the declaration of a global pandemic and adversely affected economic activity across virtually all sectors and industries on a local, national, and global scale. The impact of COVID-19 on the economy and our business continues to be a fluid situation.

Operationally, we remain focused on supporting our customers, employees, and communities during this time. We have responded quickly to adopt a virtual corporate strategy consisting of enabling most of our employees to work productively from home while continuing to guard the health and safety of our teams, support our customers, and mitigate risk. We are focused on ensuring continuity for our customers. To the extent possible, we are conducting business as usual, with necessary or advisable modifications to employee travel, employee work locations, and marketing events.

Through December 31, 2020, we have not seen a meaningful adverse impact to our financial position, results of operations, and cash flows and liquidity as a result of COVID-19. While the verticals from which we have historically generated the majority of our revenue have been less impacted by COVID-19 to date, there may be impacts to our financial condition and results of operations in 2021 as a result of reduced demand for our products and services and longer sales cycles. The ultimate impact of COVID-19 on our business is not estimable at this time and will be largely dependent upon a number of factors outside of our control including the extent and duration of the outbreak as well as any mitigating actions which may be undertaken by global governments and the general public.

Our Business Model

Our business model focuses on maximizing the lifetime value of customer relationships, which is a function of the duration of a customer's deployment of Appian as well as the price and number of subscriptions of Appian a customer purchases. We incur significant customer acquisition costs, including expenses associated with hiring new sales representatives, who generally take more than one year to become productive given the length of our sales cycle, and marketing costs, all of which, with the exception of sales commissions, are expensed as incurred.

At the same time, we believe the costs we incur to retain customers and drive additional purchases of software are lower than our customer acquisition costs on a relative basis. Over time, we expect a large portion of our customers to renew their subscriptions and purchase additional subscriptions as they continue to build more applications and add more users to our platform. Over the last three completed fiscal years, we had an average cloud subscription renewal rate of 98%. We calculate our cloud subscription renewal rate by dividing (i) the cloud subscription revenue from renewing cloud customers in the current 12-month period that were cloud customers during the entirety of the prior 12-month period, giving effect to price increases but excluding additional cloud subscriptions for additional users, or upsells, by (ii) our cloud subscription revenue from all cloud customers in the corresponding prior 12-month period that were cloud customers during the entirety of such prior 12-month period. For example, to obtain our cloud subscription renewal rate for the 12-month period ended December 31, 2020, we identified the amount of cloud subscription revenue in 2020 from cloud customers that were our cloud customers for all of 2019 and subtracted the amount of upsells to such cloud customers and new users from those cloud customers in 2020. We then divided the balance of 2020 cloud subscription revenue from such cloud customers by all cloud subscription revenue generated in 2019 from cloud customers that were cloud customers for the entirety of 2019. With respect to the average for our last three completed fiscal years, we calculated the average of the three applicable 12-month periods. We also expect the proportion of annual revenue from existing customers to grow relative to annual revenue from new customers. We believe this mix shift over time will have a positive impact on our operating margins, as we expect the percentage of revenue spent on sales and marketing to decline.

We measure the effectiveness of our business model by comparing the lifetime value of our customer relationships to our customer acquisition costs. For fiscal years 2018 and prior, revenue was recognized under Accounting Standards Codification Topic 605, *Revenue Recognition*, or ASC 605. Under ASC 605, we calculated lifetime customer value as (1) average gross margin multiplied by average subscription and maintenance and support revenue from customers for a given month divided by (2) the average percentage of monthly recurring revenue that did not renew in each month for the previous 12 months. We then divided this calculated lifetime customer value by our customer acquisition cost, which is the total sales and marketing expense incurred during the corresponding month.

In response to our adoption of Accounting Standards Update 2014-09, *Revenue from Contracts with Customers (Topic 606)*, or ASC 606, in the year ended December 31, 2019, we revised the calculation of the lifetime value of our customer relationships by replacing subscription revenue with cloud subscription revenue in the calculation. Because we primarily recognize revenue from our on-premises term license subscriptions upfront under ASC 606, we believe cloud subscription revenue better reflects the performance of our business. The calculation of lifetime customer value as compared to customer acquisition costs for the prior years were unchanged.

On a rolling 12 month basis, we estimate that for each of the past five fiscal years, the average lifetime value of a customer has exceeded 7x the associated average cost of acquiring them, including the year ended December 31, 2020.

Key Factors Affecting Our Performance

The following are several key factors that affect our performance:

- **Market Adoption of Our Platform.** Our ability to grow our customer base and drive market adoption of our platform is affected by the pace at which organizations digitally transform. We expect our revenue growth will be primarily driven by the pace of adoption and penetration of our platform. We offer a leading custom software automation platform and intend to continue to invest to expand our customer base. The degree to which prospective customers recognize the need for low-code software that enables organizations to digitally transform, and subsequently allocate budget dollars to purchase our software, will drive our ability to acquire new customers and increase sales to existing customers, which, in turn, will affect our future financial performance.
- **Growth of Our Customer Base.** We believe we have a substantial opportunity to grow our customer base. We define a customer as an entity with an active subscription or maintenance and support contract related to a perpetual software license as of the specified measurement date. To the extent we contract with one or more entities under common control, we count those entities as separate customers. We have aggressively invested, and intend to continue to invest, in our sales force in order to drive sales to new customers. We continue to make investments to enhance the expertise of our sales and marketing organization within our key industry verticals of financial services, government, and life sciences. In addition, we have established relationships with strategic partners who work with organizations undergoing digital transformations. We had a total customer count of 693, 533, and 436 as of December 31, 2020, 2019, and 2018, respectively. Our number of customers with active software subscription agreements was 654, 487, and 378 as of December 31, 2020, 2019, and 2018, respectively. As of December 31, 2020, 25% of our commercial customers were Global 2000 organizations, and 60 of our customers were Fortune 500 companies. Our ability to continue to grow our customer base is dependent, in part, upon our ability to differentiate ourselves within the increasingly competitive markets in which we participate.
- **Further Penetration of Existing Customers.** Our sales force seeks to generate additional revenue from existing customers by adding new users to our platform. Many of our customers begin by building a single application and then grow to build dozens of applications on our platform. Generally, the development of new applications on our platform results in the expansion of our user base within an organization and a corresponding increase in revenue to us because we charge subscription fees on a per-user basis and, to a lesser degree, non-user based single application licenses. As a result of this “land and expand” strategy, we have generated significant additional revenue from our customer base. Our ability to increase sales to existing customers will depend on a number of factors, including the size of our sales force and professional services teams, customers’ level of satisfaction with our platform and professional services, pricing, economic conditions, and our customers’ overall spending levels. We have also re-focused some of our

professional services personnel to become customer success managers. Their role is to ensure the customer realizes value from our platform and support the "land and expand" strategy versus delivering billable hours.

- Mix of Subscriptions and Professional Services Revenue.** We believe our professional services have driven customer success and facilitated the adoption of our platform by customers. During the initial period of deployment by a customer, we generally provide a greater amount of support in building applications and training than later in the deployment, with a typical engagement extending from two to six months. At the same time, many of our customers have historically purchased subscriptions only for a limited set of their total potential end users. As a result of these factors, the proportion of total revenue for a customer associated with professional services is relatively high during the initial deployment period. Over time, as the need for professional services associated with user deployments decreases and the number of end users increases, we expect subscriptions revenue as a percentage of total revenue to increase. In addition, we intend to further grow our base of strategic partners to provide broader customer coverage and solution delivery capabilities. These partners perform professional services with respect to any new service contracts they sign. As the usage of partners expands, we expect the proportion of our total revenue from subscriptions to increase over time relative to professional services. In 2020, 2019, and 2018, 65.2%, 58.1%, and 55.6% of our revenue, respectively, was derived from sales of subscriptions, while the remaining 34.8%, 41.9%, and 44.4%, respectively, was derived from the sale of professional services.
- Investments in Growth.** We have made, and plan to continue to make, investments for long-term growth, including investment in our platform and infrastructure to continuously maximize the power and simplicity of the platform to meet the evolving needs of our customers and to take advantage of our market opportunity. In addition, we continue to pursue strategic acquisitions that enhance our product offerings. We also intend to continue to invest in sales and marketing as we further expand our sales teams, increase our marketing activities, and grow our international operations.

Key Metrics

We monitor the following metrics to help us measure and evaluate the effectiveness of our operations. All dollar amounts are presented in thousands.

Cloud Subscription Revenue

	Year Ended December 31,		
	2020	2019	2018
Cloud Subscription Revenue	\$ 129,219	\$ 95,028	\$ 67,447

Pursuant to adoption of ASC 606 in 2019, we primarily recognize revenue from our on-premises term license subscriptions upfront. As a result, we believe our previous key business metric, subscription revenue, no longer best reflects the performance of our business and overemphasizes the volatility in our results. Therefore, we are no longer presenting subscription revenue and have transitioned to a new key metric, cloud subscription revenue.

Cloud subscription revenue includes SaaS subscriptions bundled with maintenance and support and hosting services. In 2020, 2019, and 2018, 65.0%, 62.8%, and 53.5%, respectively, of subscriptions revenue was cloud subscription revenue. As we generally sell our SaaS subscriptions on a per-user basis, our cloud subscription revenue for any customer is primarily determined by the number of users who access and utilize the applications built on our platform as well as the price paid. We believe increasing cloud subscription revenue is an indicator of the demand for our platform, the pace at which the market for our solutions is growing, the productivity of our sales force and strategic relationships in growing our customer base, and our ability to further penetrate our existing customer base. The adoption of ASC 606 did not have a material impact on our cloud subscription revenue.

Cloud Subscription Revenue Retention Rate

	As of December 31,		
	2020	2019	2018
Cloud Subscription Revenue Retention Rate	119 %	115 %	131 %

A key factor to our success is the renewal and expansion of subscription agreements with our existing customers. We calculate this metric over a set of customers who have been with us for at least one full year. To calculate our cloud subscription revenue retention rate for a particular trailing 12-month period, we first establish the recurring cloud subscription revenue for the previous trailing 12-month period. This effectively represents recurring dollars we should expect in the current trailing 12-month period from the cohort of customers from the previous trailing 12-month period without any expansion or contraction. We subsequently measure the recurring cloud subscription revenue in the current trailing 12-month period from the cohort of customers from the previous trailing 12-month period. Cloud subscription revenue retention rate is then calculated by dividing the aggregate recurring cloud subscription revenue in the current trailing 12-month period by the previous trailing 12-month period. This calculation includes the impact on our revenue from customer non-renewals, pricing changes, and growth in the number of users on our platform. Our cloud subscription revenue retention rate can fluctuate from period to period due to large customer contracts in any given period. The cloud subscription revenue retention rate as of December 31, 2018 was elevated as we focused on converting customers with on-premises term license subscriptions to cloud subscriptions. The adoption of ASC 606 did not have a material impact on our cloud subscription revenue retention rate.

Non-GAAP Financial Measures

To supplement our consolidated financial statements, which are prepared and presented in accordance with GAAP, we provide investors with certain non-GAAP financial measures, including non-GAAP operating loss, non-GAAP net loss, non-GAAP net loss per share, non-GAAP weighted average shares outstanding, and adjusted EBITDA, which we collectively refer to as non-GAAP financial measures. As reflected in the following reconciliation tables, these non-GAAP financial measures exclude either or both stock-based compensation expense and gain or loss on disposal of asset. We define non-GAAP operating loss as operating loss before stock-based compensation expense. We define non-GAAP net loss as net loss before stock-based compensation expense and gain or loss on disposal of assets. In periods we report non-GAAP net income, we calculate non-GAAP weighted average shares outstanding as GAAP weighted average shares outstanding adjusted for the effect of potentially dilutive securities that would otherwise be antidilutive under GAAP. We define adjusted EBITDA as net loss before (1) other (income) expense, net, (2) interest expense, (3) income tax expense, (4) depreciation and amortization expense, and (5) stock-based compensation expense.

We exclude stock-based compensation expense because of varying available valuation methodologies, subjective assumptions, and the variety of equity instruments that can impact our non-cash expense. We believe providing non-GAAP financial measures excluding stock-based compensation expense allow for more meaningful comparisons between our operating results from period to period. We exclude gains or losses on disposals of assets as these transactions are unrelated to current operations nor predictive of future results, which we believe allows for a more meaningful comparison between our operating results from period to period. Accordingly, we believe excluding these expenses and income provides investors and management with greater visibility into the underlying performance of our business operations, facilitates comparison of our results with other periods, and may also provide comparison with the results of other companies in our industry.

The presentation of non-GAAP financial measures is not intended to be considered in isolation from, as a substitute for, or superior to the financial information prepared and presented in accordance with GAAP. We use non-GAAP financial measures for financial and operational decision-making purposes and as a means to evaluate period-to-period comparisons. We believe our non-GAAP financial measures provide useful information about our operating results, enhance the overall understanding of past financial performance and future prospects, and allow for greater transparency with respect to metrics used by our management in its financial and operational decision making. A reconciliation of our non-GAAP financial measures to the comparable GAAP financial measures is included below for review. Reliance should not be placed on any single financial measure to evaluate our business.

Our non-GAAP financial measures may not provide information that is directly comparable to that provided by other companies in our industry as other companies in our industry may calculate non-GAAP financial results differently, particularly

with respect to non-recurring, unusual items. Non-GAAP financial measures do not have uniform definitions, and our definitions will likely differ from the definitions used by other companies, including peer companies. In addition, non-GAAP financial measures exclude expenses that may have a material impact upon our reported financial results. Further, stock-based compensation expense will continue to be a significant recurring expense in our business and an important part of the compensation provided to our employees for the foreseeable future.

Note for the years ended December 31, 2020 and 2019, revenue was recognized under ASC 606 while for the year ended December 31, 2018, revenue was recognized under ASC 605. Consequently, our non-GAAP financial measures across those years are not directly comparable to one another. For a reconciliation of the impact of the adoption of ASC 606 on our non-GAAP financial measures for the year ended December 31, 2019, refer to our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on February 20, 2020.

The table below reconciles GAAP operating loss to non-GAAP operating loss for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,		
	2020	2019	2018
GAAP operating loss	\$ (37,902)	\$ (50,468)	\$ (46,719)
Add back:			
Stock-based compensation expense	15,279	16,443	16,054
Non-GAAP operating loss	<u>\$ (22,623)</u>	<u>\$ (34,025)</u>	<u>\$ (30,665)</u>

The following table reconciles GAAP net loss to non-GAAP net loss for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,		
	2020	2019	2018
GAAP net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)
Add back:			
Stock-based compensation expense	15,279	16,443	16,054
Loss (gain) on disposal of asset	22	146	(4)
Non-GAAP net loss	<u>\$ (18,176)</u>	<u>\$ (34,125)</u>	<u>\$ (33,401)</u>

The following table sets forth non-GAAP net loss per share for the years ended December 31, 2020, 2019, and 2018 (in thousands except share and per share data):

	Year Ended December 31,		
	2020	2019	2018
Non-GAAP net loss	\$ (18,176)	\$ (34,125)	\$ (33,401)
Non-GAAP weighted average shares used to compute net loss per share, basic and diluted	69,050,565	65,479,327	62,140,684
Non-GAAP net loss per share, basic and diluted	<u>\$ (0.26)</u>	<u>\$ (0.52)</u>	<u>\$ (0.54)</u>

GAAP basic and diluted weighted average shares outstanding were equal to non-GAAP basic and diluted weighted average shares outstanding for each of the years ended December 31, 2020, 2019, and 2018.

The following table reconciles GAAP net loss per share to non-GAAP net loss per share for the years ended December 31, 2020, 2019, and 2018:

	Year Ended December 31,		
	2020	2019	2018
GAAP net loss per share, basic and diluted	\$ (0.48)	\$ (0.77)	\$ (0.80)
Add back:			
Non-GAAP adjustments to net loss per share	0.22	0.25	0.26
Non-GAAP net loss per share, basic and diluted	<u>\$ (0.26)</u>	<u>\$ (0.52)</u>	<u>\$ (0.54)</u>

The following table reconciles GAAP net loss to adjusted EBITDA for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,		
	2020	2019	2018
GAAP net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)
Other (income) expense, net	(5,786)	(941)	2,295
Interest expense	478	367	198
Income tax expense	883	820	239
Depreciation and amortization expense	5,851	4,742	2,020
Stock-based compensation expense	15,279	16,443	16,054
Adjusted EBITDA	<u>\$ (16,772)</u>	<u>\$ (29,283)</u>	<u>\$ (28,645)</u>

Key Components of Results of Operations

Revenue

We generate revenue primarily through sales of subscriptions to our platform as well as professional services. We generally sell our software on a per-user basis and, to a lesser degree, non-user based single application licenses. We generally bill customers and collect payment for subscriptions to our platform in advance on an annual, quarterly, or monthly basis. In certain instances, we have had customers pay their entire contract value up front.

Our revenue is comprised of the following:

Subscriptions

Subscriptions revenue is primarily derived from:

- SaaS subscriptions bundled with maintenance and support and hosting services; and
- On-premises term license subscriptions bundled with maintenance and support.

Our maintenance and support agreements provide customers with the right to unspecified software upgrades, maintenance releases and patches released during the term of the maintenance and support agreement on a when-and-if-available basis, and rights to technical support. On-premises term license subscriptions are offered when the customer prefers to self-manage the deployment of our platform within their own infrastructure. When our platform is delivered as a SaaS subscription, we manage their operational needs in third-party hosted data centers.

Professional Services

Our professional services revenue is comprised of fees for consulting services, including application development, deployment assistance, and training related to our platform. Over time, as the need for professional services associated with user deployments decreases and the number of end users increases, we expect professional services revenue as a percentage of total revenue to decrease. Additionally, if there is a decline in our procurement of new customers as a result of the COVID-19 pandemic, we may also see a similar decline in professional services revenue.

We have several strategic partnerships, including with KPMG, PwC, Accenture, and Deloitte. Our agreements with our strategic partners have indefinite terms and may be terminated for convenience by either party. We intend to further grow our base of strategic partners to provide broader customer coverage and solution delivery capabilities. These partners refer software subscription customers to us and generally perform professional services with respect to any new service contracts they originate, increasing our subscriptions revenue without any change to our professional services revenue. As we expand the network of strategic partners, we expect professional services revenue to decline as a percentage of total revenue over time since our strategic partners may perform professional services associated with software subscriptions we sell.

Cost of Revenue

Subscriptions

Cost of subscriptions revenue consists primarily of fees paid to our third-party managed hosting providers and other third-party service providers, personnel costs, including payroll and benefits for our technology operations and customer support teams, and allocated facility costs and overhead. We expect cost of revenue to continue to increase in absolute dollars for the foreseeable future as our customer base grows.

Professional Services

Cost of professional services revenue includes all direct and indirect costs to deliver our professional services and training, including employee compensation for our global professional services and training personnel, third-party contractor costs, allocated facility costs and overhead, and the costs of billable expenses such as travel and lodging. The unpredictability of the timing of entering into significant professional services agreements sold on a standalone basis may cause significant fluctuations in our quarterly financial results and allocated facility costs and overhead.

Gross Margin

Gross profit and gross margin, or gross profit as a percentage of total revenue, have been, and will continue to be, affected by various factors, including the mix of SaaS subscriptions and on-premises term license subscriptions, the mix of total subscriptions revenue and professional services revenue, subscription pricing, the costs associated with third-party hosting facilities, and the extent to which we expand our professional services to support future growth. Our gross margin may fluctuate from period to period based on the above factors.

Subscriptions Gross Margin

Subscriptions gross margin is primarily affected by the growth in our subscriptions revenue as compared to the growth in, and timing of, costs to support such revenue. We expect to continue to invest in customer support and SaaS operations to support growth in our business, and the timing of those investments is expected to cause gross margins to fluctuate in the short term but improve over time.

Professional Services Gross Margin

Professional services gross margin is affected by the growth in our professional services revenue as compared to the growth in, and timing of, the cost of our Customer Success organization as we continue to invest in the growth of our business. Professional services gross margin is also impacted by the amount of services performed by subcontractors and partners as opposed to internal resources. More recently, we have reduced our usage of subcontractors, and the COVID-19 pandemic has resulted in fewer in-person professional services engagements and deployments, both of which have reduced certain classes of expenses and improved professional services margins. However, our improved margins may not be indicative of future trends

and are subject to fluctuation based on factors discussed above and uncertainties related to the COVID-19 pandemic outside of our control.

Operating Expenses

Operating expenses consist of sales and marketing, research and development, and general and administrative expenses. Salaries, bonuses, and other personnel-related costs are the most significant components of each of these expense categories. In general, our operating expenses are expected to continue to increase as we invest resources in growing our various teams. We grew from 1,275 employees at December 31, 2019 to 1,460 employees at December 31, 2020, and we expect to continue to hire new employees in order to support our anticipated revenue growth.

Sales and Marketing Expense

Sales and marketing expense primarily includes personnel costs, including salaries, bonuses, commissions, stock-based compensation, and other personnel costs related to sales teams. Additional expenses in this category include travel and entertainment, marketing activities and promotional events, subcontracting fees, and allocated facility costs and overhead.

The number of employees in sales and marketing functions grew from 403 at December 31, 2019 to 445 at December 31, 2020. In order to continue to grow our business, geographical footprint, and brand awareness, we expect to continue investing resources in sales and marketing by increasing the number of sales and account management teams. As a result, we expect sales and marketing expense to increase in absolute dollars as we continue to invest to acquire new customers and further expand usage of our platform within our existing customer base.

Research and Development Expense

Research and development expense consists primarily of personnel costs for our employees who develop and enhance our platform, including salaries, bonuses, stock-based compensation, and other personnel costs. Also included are non-personnel costs such as subcontracting, consulting, and professional fees to third party development resources, allocated facility costs, and overhead.

Our research and development efforts are focused on enhancing the speed and power of our software platform. The number of employees in research and development functions grew from 332 at December 31, 2019 to 381 at December 31, 2020. We expect research and development expense to continue to increase as they are critical to maintain and improve the quality of applications and our competitive position.

General and Administrative Expense

General and administrative expense consists primarily of personnel costs, including salaries, bonuses, stock-based compensation, and other personnel costs for our administrative, legal, information technology, human resources, finance and accounting employees, and executives. Additional expenses included in this category are non-personnel costs such as travel-related expenses, contracting and professional fees, audit fees, tax services and legal fees, insurance and other corporate expenses, allocated facility costs and overhead, bad debt expenses, and depreciation and amortization costs.

The number of employees in general and administrative functions grew from 156 at December 31, 2019 to 206 at December 31, 2020. We expect our general and administrative expense to increase in absolute dollars as we continue to support our growth.

Other (Income) Expense

Other (Income) Expense, Net

Other (income) expense, net consists primarily of unrealized and realized gains and losses related to changes in foreign currency exchange rates, interest income on our cash and cash equivalents, gains or losses on the disposal of property and equipment, and other sources of income or expense not related to our core business.

Interest Expense

Interest expense consists primarily of interest on our finance leases and debt, unused credit facility fees, and commitment fees on our letters of credit.

Results of Operations

The following table sets forth our consolidated statement of operations data (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Consolidated Statement of Operations Data:			
Revenue:			
Subscriptions	\$ 198,710	\$ 151,299	\$ 126,012
Professional services	105,863	109,053	100,731
Total revenue	304,573	260,352	226,743
Cost of revenue ⁽¹⁾ :			
Subscriptions	20,826	17,098	11,997
Professional services	67,940	76,743	72,928
Total cost of revenue	88,766	93,841	84,925
Gross profit	215,807	166,511	141,818
Operating expenses ⁽¹⁾ :			
Sales and marketing	130,316	117,440	105,992
Research and development	70,241	58,043	44,724
General and administrative	53,152	41,496	37,821
Total operating expenses	253,709	216,979	188,537
Operating loss	(37,902)	(50,468)	(46,719)
Other (income) expense:			
Other (income) expense, net	(5,786)	(941)	2,295
Interest expense	478	367	198
Total other (income) expense	(5,308)	(574)	2,493
Loss before income taxes	(32,594)	(49,894)	(49,212)
Income tax expense	883	820	239
Net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)

⁽¹⁾ Stock-based compensation as a component of these line items is as follows:

	Year Ended December 31,		
	2020	2019	2018
(in thousands)			
Cost of revenue			
Subscriptions	\$ 943	\$ 647	\$ 514
Professional services	1,477	2,748	1,717
Operating expenses			
Sales and marketing	2,821	4,742	3,473
Research and development	2,718	3,480	2,416
General and administrative	7,320	4,826	7,934
Total stock-based compensation expense	\$ 15,279	\$ 16,443	\$ 16,054

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

	Year Ended December 31,		
	2020	2019	2018
Consolidated Statement of Operations Data:			
Revenue:			
Subscriptions	65.2 %	58.1 %	55.6 %
Professional services	34.8	41.9	44.4
Total revenue	100.0	100.0	100.0
Cost of revenue:			
Subscriptions	6.8	6.6	5.3
Professional services	22.3	29.5	32.2
Total cost of revenue	29.1	36.1	37.5
Gross margin	70.9	63.9	62.5
Operating expenses:			
Sales and marketing	42.8	45.1	46.7
Research and development	23.1	22.3	19.7
General and administrative	17.5	15.9	16.7
Total operating expenses	83.4	83.3	83.1
Operating loss	(12.5)	(19.4)	(20.6)
Other (income) expense:			
Other (income) expense, net	(1.9)	(0.4)	1.0
Interest expense	0.2	0.1	0.1
Total other (income) expense	(1.7)	(0.3)	1.1
Loss before income taxes	(10.8)	(19.1)	(21.7)
Income tax expense	0.3	0.3	0.1
Net loss	(11.1)%	(19.4)%	(21.8)%

Year Ended December 31, 2020 Compared to the Year Ended December 31, 2019

Revenue

	Year Ended December 31,		% Change
	2020	2019	
(dollars in thousands)			
Revenue:			
Subscriptions	\$ 198,710	\$ 151,299	31.3%
Professional services	105,863	109,053	(2.9)%
Total revenue	\$ 304,573	\$ 260,352	17.0%

Total revenue increased \$44.2 million, or 17.0%, in 2020 compared to 2019 due to an increase in our subscriptions revenue of \$47.4 million, which was partially offset by a decrease in our professional services revenue of \$3.2 million. Of the increase in subscriptions revenue, \$34.2 million was attributable to cloud subscription revenue, \$11.0 million was attributable to on-premises software revenue, and \$2.2 million was attributable to maintenance and support revenue. With respect to new versus existing customers, \$36.5 million of the increase in subscriptions revenue stemmed from expanded deployments and corresponding sales of additional subscriptions to existing customers while the remaining increase of \$10.9 million was the result of sales of subscriptions to new customers, \$2.8 million of which related to a three-year on-premises contract which closed in the first quarter of 2020. The decrease in professional services revenue was due primarily to a \$16.9 million decrease

in revenue from existing customers which was substantially offset by \$13.7 million in sales to new customers. Further contributing to the decrease in professional services revenue was our increased usage of partners to perform professional services in 2020 as compared to 2019, which has resulted in increases to our subscriptions revenue without any change to our professional services revenue.

Cost of Revenue

	Year Ended December 31,		% Change
	2020	2019	
(dollars in thousands)			
Cost of revenue:			
Subscriptions	\$ 20,826	\$ 17,098	21.8%
Professional services	67,940	76,743	(11.5)%
Total cost of revenue	\$ 88,766	\$ 93,841	(5.4)%
Subscriptions gross margin	89.5 %	88.7 %	
Professional services gross margin	35.8 %	29.6 %	
Total gross margin	70.9 %	64.0 %	

Cost of revenue decreased \$5.1 million, or 5.4%, in 2020 compared to 2019, primarily due to a \$10.4 million decrease in contractor costs, a \$4.1 million decrease in billable expenses, and a \$0.4 million decrease in facility and overhead costs. These decreases were partially offset by a \$6.8 million increase in professional services and product support personnel costs and a \$3.0 million increase in other cost of revenue. Contractor costs decreased in 2020 compared to 2019 because of a decrease in the usage of subcontractors for professional service engagements. Billable expenses decreased primarily due to lower travel and entertainment related expenses as a result of our shift to largely remote work in 2020 while the decrease in facility and overhead costs was largely due to a reduction in rent expense. Personnel costs increased due to an increase in professional services and product support staff personnel headcount of 11.5% from December 31, 2019 to December 31, 2020. The increase in other cost of revenue was due to increased hosting costs as sales of our cloud offering increased in 2020.

Subscriptions gross margin was 89.5% in 2020 compared to 88.7% in 2019 due to an increase in subscriptions revenue in 2020, partially offset by increased hosting costs as sales of our cloud offering increased and became a larger proportion of our overall subscriptions revenue. Professional services gross margin was 35.8% in 2020 compared to 29.6% in 2019 due to a decrease in the usage of subcontractors for professional services engagements, a decrease in travel and entertainment related expenses, a decrease in rent expenses, and a \$1.3 million decrease in stock-based compensation expense. Due to the higher percentage of subscriptions revenue for the comparable periods as well as the aforementioned declines in professional services expenses, gross margin was 70.9% in 2020 as compared to 64.0% in 2019.

Sales and Marketing Expense

	Year Ended December 31,		% Change
	2020	2019	
(dollars in thousands)			
Sales and marketing	\$ 130,316	\$ 117,440	11.0%
% of revenue	42.8 %	45.1 %	

Sales and marketing expense increased \$12.9 million, or 11.0%, in 2020 compared to 2019, primarily due to a \$17.6 million increase in sales and marketing personnel costs and a \$2.3 million increase in professional fees, which were partially offset by a \$6.7 million decrease in facility and overhead costs and a \$0.4 million decrease in marketing costs. Personnel costs increased due to an increase in sales and marketing personnel headcount of 10.4% from December 31, 2019 to December 31, 2020 and increased sales commissions driven by our subscriptions revenue growth, partially offset by a \$1.9 million decrease in stock-based compensation expense. Professional fees increased due to an increase in consulting fees and contract labor to support our growth. Facility and overhead costs decreased due to lower travel and entertainment related expenses as a result of our shift to largely remote work in 2020. Marketing costs decreased due to reduced costs incurred as a result of moving our

annual user conference, Appian World, to virtual-only as well as a reduction in the number of in-person marketing events held in 2020, partially offset by an increase in advertising expenses.

Research and Development Expense

	Year Ended December 31,		% Change
	2020	2019	
	(dollars in thousands)		
Research and development	\$ 70,241	\$ 58,043	21.0%
% of revenue	23.1 %	22.3 %	

Research and development expense increased \$12.2 million, or 21.0%, in 2020 compared to 2019, primarily due to a \$13.1 million increase in research and development personnel costs, partially offset by a \$0.5 million decrease in facility and overhead costs and a \$0.3 million decrease in professional fees. Personnel costs increased due to an increase in research and development personnel headcount of 14.8% from December 31, 2019 to December 31, 2020, partially offset by a \$0.8 million decrease in stock-based compensation expense. Facilities and overhead costs decreased due to non-recurring charges incurred in 2019 to support our personnel growth coupled with lower travel and entertainment related expenses as a result of our shift to largely remote work in 2020. Professional fees decreased due to a decrease in consulting fees.

General and Administrative Expense

	Year Ended December 31,		% Change
	2020	2019	
	(dollars in thousands)		
General and administrative expense	\$ 53,152	\$ 41,496	28.1%
% of revenue	17.5 %	15.9 %	

General and administrative expense increased \$11.7 million, or 28.1%, in 2020 compared to 2019, primarily due to a \$7.2 million increase in general and administrative personnel costs, a \$3.0 million increase in professional fees, and a \$1.5 million increase in facility and overhead costs. Personnel costs increased due to an increase in general and administrative personnel headcount of 32.1% from December 31, 2019 to December 31, 2020 coupled with a \$2.5 million increase in stock-based compensation expense in 2020, which was primarily attributable to a stock option to purchase 700,000 shares of our Class A common stock granted to our Chief Executive Officer in May 2019. Professional fees increased due to increased legal fees. Facility and overhead costs increased due to costs incurred to support our personnel growth, an increase in bad debt expense, and an increase in amortization expense stemming from our intangible assets which were acquired in 2020.

Other Income, Net

	Year Ended December 31,		% Change
	2020	2019	
	(dollars in thousands)		
Other income, net	\$ (5,786)	\$ (941)	***
% of revenue	(1.9)%	(0.4)%	

*** - Indicates a percentage that is not meaningful

Other income, net increased by \$4.8 million in 2020 compared to 2019, primarily due to \$4.3 million in foreign exchange gains in 2020 compared to \$0.2 million in foreign exchange losses in 2019. The increase in foreign exchange gains was primarily due to currency fluctuations of the Euro, Swedish krona, British pound sterling, and Swiss franc versus the U.S. dollar in 2020 compared to the same period in 2019. Additionally, we recognized \$1.0 million of other income in 2020 due to a payment received from a state government as a result of our achievement of certain job creation and capital investment goals.

Interest Expense

	Year Ended December 31,		% Change
	2020	2019	
	(dollars in thousands)		
Interest expense	\$ 478	\$ 367	30.2%
% of revenue	0.2 %	0.1 %	

Interest expense increased by \$0.1 million, or 30.2%, in 2020 compared to the same period in 2019, primarily due to commitment fees on the letter of credit outstanding.

Year Ended December 31, 2019 Compared to the Year Ended December 31, 2018

For a discussion and analysis of changes in financial condition and results of operations for the year ended December 31, 2019 as compared to the year ended December 31, 2018, refer to our Annual Report on Form 10-K for the fiscal year ended December 31, 2019, filed with the SEC on February 20, 2020.

Seasonality

We have historically experienced seasonality in terms of when we enter into agreements with customers. We typically enter into a significantly higher percentage of agreements with new customers, as well as renewal agreements with existing customers, in the fourth quarter. The increase in customer agreements for the fourth quarter is attributable to large enterprise account buying patterns typical in the software industry. Furthermore, we usually enter into a significant portion of agreements with customers during the last month of each quarter. However, we recognize the majority of our subscriptions revenue ratably over the terms of our subscriptions agreements, which are generally one to three years in length. As a result, a substantial portion of the subscriptions revenue we report in each period will be derived from the recognition of deferred revenue relating to agreements entered into during previous periods. Consequently, a decline in new sales or renewals in any one period may not be immediately reflected in our revenue results for that period. This decline, however, will negatively affect our revenue in future periods. Accordingly, the effect of significant downturns in sales and market acceptance of our platform and potential changes in our rate of renewals may not be fully reflected in our results of operations until future periods.

While we will continue to recognize the majority of our subscriptions revenue ratably over the terms of our subscription agreements, we may experience greater variability and reduced comparability of our quarterly revenue and results with respect to the timing and nature of our term license subscription agreements due to the upfront revenue recognition.

Backlog

Backlog represents non-cancellable future amounts to be recognized under SaaS and term license subscription agreements and is representative of our remaining performance obligations. As of December 31, 2020 and 2019, we had backlog of \$206.2 million and \$176.0 million, respectively. Approximately 32% of our backlog as of December 31, 2020 is not expected to be recognized in 2021. The increase in backlog is due to an increase in the number of multiple-year SaaS agreements entered into during 2020.

We expect the amount of backlog relative to the total value of our contracts will change from quarter to quarter and year to year for several reasons, including the specific timing and duration of SaaS and term license subscription agreements with large customers, the specific timing of customer renewals, changes in customer financial circumstances, and foreign currency fluctuations.

We often sign multiple-year SaaS subscription agreements. Backlog may vary based on changes in the average non-cancellable term of SaaS and term license subscription agreements. The change in backlog resulting from changes in the average non-cancellable term of SaaS and term license subscription agreements may not be an indicator of the likelihood of renewal or expected future revenue. Accordingly, we believe fluctuations in backlog may not be a reliable indicator of future revenue, and we do not utilize backlog as a key management metric internally.

Liquidity and Capital Resources

The following table presents selected financial information and statistics as of and for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	As of December 31,		
	2020	2019	2018
Cash and cash equivalents	\$ 112,462	\$ 159,755	\$ 94,930
Short-term investments and marketable securities	109,826	—	—
Long-term investments	36,120	—	—
Property and equipment, net	35,404	39,554	7,539
Working capital	209,532	165,381	81,225

	Year Ended December 31,		
	2020	2019	2018
Net cash used in operating activities	\$ (7,620)	\$ (8,926)	\$ (31,321)
Net cash used in investing activities	(153,357)	(32,421)	(7,010)
Net cash provided by financing activities	110,468	105,549	60,962

As of December 31, 2020, we had \$112.5 million of cash and cash equivalents and \$109.8 million of short-term investments and marketable securities. We believe our existing cash and cash equivalents and short-term investments and marketable securities, together with any positive cash flows from operations and available borrowings under our revolving line of credit, will be sufficient to support working capital and capital expenditure requirements for at least the next 12 months. Our future capital requirements will depend on many factors, including our growth rate, the timing and extent of spending to support research and development efforts, the expansion of sales and marketing activities, particularly internationally, the introduction of new and enhanced products and functions as well as platform enhancements and professional services offerings, the level of market acceptance of our applications, spending we may incur on our new headquarters, and the global economic uncertainty caused by the COVID-19 pandemic and its impact on financial market conditions and our business.

In the event additional financing is required from outside sources, we may be unable to raise the funds on acceptable terms, if at all. To the extent existing cash and cash equivalents, short-term investments, and cash from operations are not sufficient to fund future activities, we may need to raise additional funds. We may seek to raise additional funds through equity, equity-linked, or debt financings. If we raise additional funds through the incurrence of indebtedness, such indebtedness may have rights that are senior to holders of our equity securities and could contain covenants that restrict operations. Any additional equity financing may be dilutive to our existing stockholders. We recently have and in the future may enter into investments in, or acquisitions of, complementary businesses, products, or technologies, which could also require us to seek additional equity financing, incur indebtedness, or use cash resources. We have no present binding agreements or commitments to enter into any such acquisitions. If we are unable to raise additional capital when desired, our business, operating results, and financial condition could be adversely affected.

Sources of Funds

We have financed our operations in large part with equity and debt financing arrangements, specifically proceeds raised from our initial public offering in 2017 and subsequent underwritten public offerings as summarized in the table below (in thousands except share and per share information):

	Shares Sold by Us	Price per Share	Proceeds to Us*
May 2017 initial public offering	7,187,500	\$ 12.00	\$ 77,789
August 2018 public offering	1,675,000	35.15	57,829
September 2019 public offering	1,825,000	55.70	101,303
June 2020 public offering	1,931,206	56.50	107,914
Total	12,618,706		\$ 344,835

* Net of underwriting discounts and commissions and offering expenses

In addition, we have financed our operations through sales of subscriptions and professional services. We also have the ability to draw upon a \$20.0 million revolving line of credit which we entered into in November 2017. The facility matures in November 2022. We may elect whether amounts drawn on the revolving line of credit bear interest at a floating rate per annum equal to either the LIBOR or the Prime rate plus an additional interest rate margin determined by the availability of borrowings under the revolving line of credit. The additional interest rate margin will range from 2.00% to 2.50% in the case of LIBOR advances and from 1.00% to 1.50% in the case of Prime rate advances. The revolving line of credit contains an unused facility fee in an amount between 0.15% and 0.25% of the average unused portion of the revolving line of credit, which is payable quarterly. The agreement contains certain customary affirmative and negative covenants and requires us to maintain (i) an adjusted quick ratio of at least 1.35 and (ii) minimum adjusted EBITDA in the amounts and for the periods set forth in the agreement. Any amounts borrowed under the credit facility are collateralized by substantially all of our assets. We were in compliance with all covenants as of December 31, 2020. As of December 31, 2020, we had not made any borrowings under this revolving line of credit, and we had outstanding letters of credit totaling \$11.2 million in connection with securing our leased office space.

Uses of Funds

Our current principal uses of cash are funding operations and other working capital requirements. More recently, we have utilized cash to pay for the acquisition of Novayre, which we believe is complementary to our business. Over the past several years, revenue has increased significantly from year to year and, as a result, cash flows from customer collections have increased. However, operating expenses have also increased as we have invested in growing our business. Our uses of cash in 2020 included purchases of investments, the acquisition of Novayre, and modest capital expenditures while cash uses in 2019 and 2018 included the build out of our new headquarters, which included spending approximately \$21.0 million above the \$18.4 million tenant improvement allowance provided by the landlord for the build out, \$4.5 million of which related to the financing of office furniture and fixtures and computer hardware.

With respect to future uses of funds, we expect to incur annual royalty fees of \$0.3 million for the foreseeable future related to a non-cancellable agreement for the use of technology that is integral in the development of our software. Additionally, we expect to incur capital expenditures in relation to the expanded occupancy of our headquarters which commenced in July 2020, although such expenditures do not represent capital commitments. Furthermore, we are contractually obligated to make cash payments on our various operating leases through October 2031. As of December 31, 2020, the amount of funds we expect to utilize over this time period for our lease commitments is approximately \$99.0 million. Refer to Note 13 for discussion on our commitments and contingencies and to Note 4 for further information related to our current lease portfolio.

Historical Cash Flows

Operating Activities

For the year ended December 31, 2020, net cash used in operating activities of \$7.6 million consisted of a net loss of \$33.5 million, offset by \$22.0 million in adjustments for non-cash items and \$3.9 million of cash provided by changes in working capital. Adjustments for non-cash items consisted primarily of stock-based compensation of \$15.3 million, depreciation and amortization expense of \$5.9 million, and bad debt expense of \$1.0 million, offset by a provision for deferred income taxes of \$0.2 million. The increase in cash and cash equivalents resulting from changes in working capital primarily consisted of a \$27.6 million increase in deferred revenue as a result of increased subscription sales, an \$11.8 million increase in accrued compensation and related benefits as a result of higher employee benefit accruals such as vacation and bonuses, a \$3.7 million increase in other liabilities due to the deferral of social security tax payments pursuant to the provisions of the CARES Act and

a contract liability arising from a three year deal that included a termination for convenience clause, a \$3.7 million decrease in prepaid expenses and other assets attributable to timing, and a \$3.4 million increase in operating lease liabilities as a result of recognizing a new right-of-use liability related to the expanded occupancy of our headquarters building. The increase to working capital was partially offset by a \$33.6 million increase in accounts receivable stemming from increased sales as well as the timing of billings and collections, an \$8.6 million increase in deferred commissions due to increased sales activity, and a \$4.2 million decrease in accounts payable and accrued expenses due to the timing of payments.

For the year ended December 31, 2019, net cash used in operating activities of \$8.9 million consisted of a net loss of \$50.7 million, offset by \$21.1 million in adjustments for non-cash items and \$20.7 million of cash provided by changes in working capital. Adjustments for non-cash items consisted of stock-based compensation of \$16.4 million, depreciation and amortization expense of \$4.7 million, a loss on disposal of equipment of \$0.1 million, and bad debt expense of \$0.1 million, offset by a provision for deferred income taxes of \$0.3 million. The increase in cash and cash equivalents resulting from changes in working capital primarily consisted of a \$12.6 million increase in deferred revenue adjusted for the impact of the \$35.4 million reduction to the opening balance resulting from the adoption of ASC 606. The increase in deferred revenue was due to increased subscription sales. There was also a \$9.0 million decrease in prepaid expenses and other assets adjusted for the impact of the \$20.4 million increase to the opening balance from the adoption of ASC 606. The decrease in prepaid expenses and other assets was primarily due to the receipt of the non-trade receivable resulting from our tenant improvement allowance. In accordance with GAAP, the \$17.0 million of tenant improvement allowance reimbursements received during the year ended December 31, 2019 are a source of cash in operating activities, whereas the capital expenditures are recorded as cash used in investing activities. There was also a \$7.4 million decrease in accounts receivable due to increased cash collections during the year ended December 31, 2019. There was also a \$6.8 million increase in operating lease liabilities following the adoption of ASC 842, as a result of taking initial possession of the second phase of our new headquarters in February 2019. There was also a \$1.3 million increase in other current liabilities. These increases were partially offset by a \$9.3 million increase in deferred commissions adjusted for the impact of the \$5.1 million increase to the opening balance from the adoption of ASC 606. The increase was due to increased sales as well as an increase in the estimated economic life over which deferred commissions are amortized. There was also a \$4.0 million decrease in accounts payable and accrued expenses, primarily due to the timing of payments and a \$3.1 million decrease in accrued compensation and related benefits, primarily due to a decrease in accrued vacation expense because of our new paid-time off policy, which took effect on January 1, 2019.

Investing Activities

For the year ended December 31, 2020, net cash used in investing activities was \$153.4 million, which was primarily the result of \$146.0 million in purchases of investments and \$6.1 million in payments, net of cash acquired, related to the acquisition of Novayre. In addition, there were approximately \$1.3 million in purchases of property and equipment.

For the year ended December 31, 2019, net cash used in investing activities was \$32.4 million which was related to the build-out of our new headquarters and the purchase of property and equipment.

Financing Activities

For the year ended December 31, 2020, net cash provided by financing activities was \$110.5 million, consisting of \$108.3 million in proceeds from our underwritten public offering, net of underwriting discounts and commissions, and \$6.4 million in proceeds received from stock option exercises. These increases were offset by principal payments on finance lease obligations of \$3.8 million and payment of public offering costs of \$0.3 million.

For the year ended December 31, 2019, net cash provided by financing activities was \$105.5 million, consisting of \$101.7 million in proceeds from our underwritten public offering, net of underwriting discounts and commissions, and \$4.9 million in proceeds received from stock option exercises. These increases were offset by principal payments on finance lease obligations of \$0.7 million and payment of public offering costs of \$0.4 million.

For a discussion and analysis of net cash used in or provided by operating, investing, and financing activities for the year ended December 31, 2018, refer to our 2019 Annual Report on Form 10-K, filed with the Securities and Exchange Commission, or SEC, on February 20, 2020.

Off-Balance Sheet Arrangements

During the year ended December 31, 2020, we did not have any relationships with unconsolidated entities or financial partnerships, including entities sometimes referred to as structured finance or special purpose entities, that were established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. We do not engage in off-balance sheet financing arrangements. In addition, we do not engage in trading activities involving non-exchange traded contracts. As a result, we believe we are not materially exposed to any financing, liquidity, market, or credit risks that could arise if we had engaged in these relationships.

Critical Accounting Estimates

The preparation of our consolidated financial statements in conformity with accounting principles generally accepted in the U.S. requires us to make estimates and judgments that affect the amounts reported in those financial statements and accompanying notes. Although we believe the estimates we use are reasonable, due to the inherent uncertainty involved in making those estimates, actual results reported in future periods could differ from those estimates.

We believe the following accounting estimates involve a high degree of judgment and complexity. Accordingly, these are the estimates we believe are the most critical to aid in fully understanding and evaluating our consolidated financial condition and results of our operations. See Note 2 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K for a description of our other significant accounting policies and estimates.

Revenue Recognition

We generate subscriptions revenue primarily through the sale of SaaS subscriptions bundled with maintenance and support and hosting services and term license subscriptions bundled with maintenance and support. We generate professional services revenue from fees for our consulting services, including application development and deployment assistance and training related to our platform. Significant judgments and estimates inherent in our revenue recognition are as follows:

Determining the Transaction Price

The transaction price, or the amount of consideration we expect to be entitled to receive in exchange for transferring services to our customers, includes both fixed and variable components. The variable components of our contracts, which have been nominal to date, include performance penalties, extended payment terms or implied price concessions, and warranty refunds. If necessary, we estimate these components using the expected value method, which estimates variable consideration as the sum of probability-weighted amounts in a range of possible consideration amounts. We believe this method is the most appropriate to utilize because our variable components could vary by contract, leading to multiple potential outcomes.

Our variable consideration estimates are subject to subsequent true-up adjustments which may result in changes to transaction prices, but such true-up adjustments are not expected to be material. Variable consideration is also included in the transaction price only to the extent it is probable a significant reversal will not occur. Factors considered when determining to incorporate variable consideration in the transaction price include, but are not limited to, whether the variable consideration is highly susceptible to factors outside of the company's influence, the length of time the uncertainty surrounding reversal is expected to last, our experience levels with similar types of contracts, our historical practices for similar contracts in similar circumstances, and the number and range of possible consideration amounts. The amount of variable consideration excluded from the transaction price for the year ended December 31, 2020 was insignificant.

Allocating the Transaction Price Based on Standalone Selling Prices

We allocate the transaction price to each performance obligation in a contract based on its relative standalone selling price, or SSP. The SSP is the observable price at which we sell the product or service separately. In the absence of observable pricing, we estimate SSP using the residual approach. We establish SSP as follows:

1. SaaS subscriptions - Given the highly variable selling price of our SaaS subscriptions, we establish the SSP of our SaaS subscriptions using a residual approach after first determining the SSP of consulting and training services.
2. Term license subscriptions - Given the highly variable selling price of our term license subscriptions, we have established the SSP of term license subscriptions using a residual approach after first determining the SSP of

maintenance and support. Maintenance and support is sold on a standalone basis with renewals of our legacy perpetual software licenses and within a narrow range of the net license fee, resulting in a defined economic relationship existing between the license and maintenance and support.

3. Maintenance and support - We establish the SSP of maintenance and support as a percentage of the stated net subscription fee based on observable pricing of maintenance and support renewals from our legacy perpetual software licenses.
4. Consulting services and training services - The SSP of consulting services and training services is established based on the observable pricing of standalone sales within each geographic region where the services are sold.

Stock-Based Compensation

We measure and recognize compensation expense for all instrument types, including stock options, awards with market conditions, and restricted stock units, or RSUs, based on the estimated fair value of the award on the grant date. The methods for determining fair value vary by instrument type.

Options

For the vast majority of our stock options, we estimate fair value using the Black-Scholes Option Pricing Model. For the option to purchase 700,000 shares of our Class A common stock granted to our Chief Executive Officer in May 2019, we estimated fair value using a Monte Carlo simulation because the award contains a market condition. Both valuation methods require the use of subjective assumptions, including but not limited to, the following:

1. The expected term of the option - The expected term represents the period of time the stock options are expected to be outstanding. Due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected term of the stock options, we use the simplified method to estimate the expected term. Under the simplified method, the expected term of an option is presumed to be the mid-point between the vesting date and the end of the contractual term.
2. Current trading price - The current price of our stock is based on the closing market price of our Class A common stock as quoted on the Nasdaq Global Market on the date of grant.
3. The expected stock price volatility - Expected volatility is based on historical volatilities of our publicly traded stock as well as the publicly traded stock of comparable companies within our industry over the estimated expected term of the stock options. Expected volatility is sensitive to market- and company-specific conditions which may cause our stock price or the stock prices of our peers to fluctuate. Furthermore, expected volatility can be impacted by the companies we select as peers for inclusion in the analysis.
4. Expected dividend yield - We assume no dividend yield because dividends on our common stock are not expected to be paid in the near future, which is consistent with our history of not paying dividends on our common stock.
5. The risk-free interest rate - We utilize the yields of U.S. government securities, typically U.S. Treasury bonds, that have maturities commensurate with the expected term of the options.

RSUs

The fair value of RSUs is based on the closing market price of our Class A common stock as quoted on the Nasdaq Global Market on the date of grant.

We will continue to use judgment in evaluating the assumptions related to our stock-based compensation on a prospective basis. As we continue to accumulate additional data related to our common stock, we may have refinements to our estimates, which could materially impact our future stock-based compensation expense.

Income Taxes

We measure deferred tax assets and liabilities using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be reversed. We establish a valuation allowance against our deferred tax

assets to the extent it is more likely than not that some or all of the deferred tax assets will not be realized. This requires us to make judgments and estimates regarding future reversals of existing taxable temporary differences, future taxable income, and the impact of tax planning strategies.

Our tax positions are subject to income tax audits by multiple tax jurisdictions throughout the world. We recognize the tax benefit of an uncertain tax position only if it is more likely than not that the position is sustainable upon examination by the taxing authority. We measure the tax benefit recognized as the largest amount of benefit which is more likely than not to be realized upon settlement with the taxing authority. This determination involves significant judgment in estimating the impact of uncertainties in the application of GAAP and complex tax laws.

We calculate the current and deferred income tax provision based on estimates and assumptions that could differ from the actual results reflected in income tax returns filed in subsequent years and record adjustments based on filed income tax returns when identified. The amount of income taxes paid is subject to examination by U.S. federal, state, and foreign tax authorities. The estimate of the potential outcome of any uncertain tax issue is subject to our assessment of relevant risks, facts, and circumstances existing at that time. To the extent the assessment of such tax position changes, we record the change in estimate in the period in which we make that determination.

Recent Accounting Pronouncements

See Note 2 of our consolidated financial statements for information related to recently issued accounting standards.

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

We are exposed to market risks in the ordinary course of our business. Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily the result of fluctuations in interest rates and foreign currency exchange rates.

Interest Rate Risk

We had cash and cash equivalents of \$112.5 million as of December 31, 2020, which consisted of cash in readily available checking accounts, overnight repurchase investments, and short term investments with remaining maturities of 90 days or less. These securities are not dependent on interest rate fluctuations that may cause the principal amount of these assets to fluctuate.

At December 31, 2020, we had no outstanding borrowings.

Inflation Risk

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

Foreign Currency Exchange Risk

Our reporting currency is the U.S. dollar. Due to our international operations, we have foreign currency risks related to revenue and operating expenses denominated in currencies other than the U.S. dollar, primarily the British pound sterling, Euro, Australian dollar, and Swiss franc. Our sales contracts are primarily denominated in the local currency of the customer making the purchase. In addition, portions of operating expenses are incurred outside the United States and are denominated in foreign currencies. Decreases in the relative value of the U.S. dollar to other currencies may negatively affect revenue and other operating results as expressed in U.S. dollars. We do not believe an immediate 10% increase or decrease in the relative value of the U.S. dollar to other currencies would have a material effect on operating results.

We have experienced, and will continue to experience, fluctuations in net loss as a result of transaction gains or losses related to remeasuring certain current asset and current liability balances denominated in currencies other than the functional currency of the entities in which they are recorded. We have not engaged in the hedging of foreign currency transactions to date, although we may choose to do so in the future.

Item 8. Financial Statements and Supplementary Data

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Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
Appian Corporation
McLean, Virginia

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Appian Corporation (the “Company”) as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, changes in stockholders’ equity, and cash flows for each of the three years in the period ended December 31, 2020, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the Company’s internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) and our report dated February 18, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition for Multiple Performance Obligations

As discussed in Note 3 to the consolidated financial statements, certain of the Company’s revenue contracts contain multiple performance obligations that might include Software as a Service (“SaaS”) subscriptions, term license subscriptions, maintenance and support and professional services. The Company accounts for individual products and services separately if they are capable of being distinct and are distinct within the context of the contract. In such cases, the transaction price is allocated to the distinct performance obligations based on their relative standalone selling price or residual approach and revenue is recognized when control of the distinct performance obligation is transferred.

We identified the identification of distinct performance obligations and the determination of standalone selling prices as a critical audit matter. Auditing these elements of revenue recognition was especially challenging due to the significant judgment involved in assessing the completeness of the distinct performance obligations in arrangements containing multiple performance obligations. In addition, the evaluation of the reasonableness of the range of prices used to establish the standalone selling price for maintenance and support and professional services was complex, which directly affects the amount of SaaS and term license subscriptions revenue recognized using the residual approach.

The primary procedures we performed to address this critical audit matter included:

- Testing the design and operating effectiveness of internal controls over the Company's revenue recognition process including controls over: (i) the identification of distinct performance obligations, and (ii) the determination of standalone selling prices for the distinct performance obligations.
- Testing a sample of revenue contracts and underlying order documents to evaluate management's identification of distinct performance obligations.
- Evaluating the reasonableness of management's analysis supporting the standalone selling prices by tracing, on a sample basis, revenue transactions to the underlying source documents and recalculating the mathematical accuracy of the analysis.

/s/ BDO USA, LLP

We have served as the Company's auditor since 2013.

McLean, Virginia
February 18, 2021

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders
Appian Corporation
McLean, Virginia

Opinion on Internal Control over Financial Reporting

We have audited Appian Corporation's (the "Company's") internal control over financial reporting as of December 31, 2020, based on criteria established in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (the "COSO criteria"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated balance sheets of the Company as of December 31, 2020 and 2019, the related consolidated statements of operations, comprehensive loss, changes in stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2020, and the related notes and our report dated February 18, 2021 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Item 9A, Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit of internal control over financial reporting in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit 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 audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ BDO USA, LLP

McLean, Virginia
February 18, 2021

APPIAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands, except share and per share data)

	As of December 31,	
	2020	2019
Assets		
Current assets		
Cash and cash equivalents	\$ 112,462	\$ 159,755
Short-term investments and marketable securities	109,826	—
Accounts receivable, net of allowance of \$1,400 and \$600 as of December 31, 2020 and December 31, 2019, respectively	97,278	70,408
Deferred commissions, current	17,899	14,543
Prepaid expenses and other current assets	27,955	32,955
Total current assets	365,420	277,661
Property and equipment, net	35,404	39,554
Long-term investments	36,120	—
Goodwill	4,862	—
Intangible assets, net of accumulated amortization of \$429 as of December 31, 2020	1,744	—
Operating right-of-use assets	30,659	24,205
Deferred commissions, net of current portion	34,198	28,979
Deferred tax assets	489	494
Other assets	3,625	592
Total assets	\$ 512,521	\$ 371,485
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	\$ 2,967	\$ 5,222
Accrued expenses	5,821	7,488
Accrued compensation and related benefits	22,981	10,691
Deferred revenue, current	116,256	82,201
Operating lease liabilities, current	6,923	3,836
Finance lease liabilities, current	—	1,447
Other current liabilities	940	1,395
Total current liabilities	155,888	112,280
Operating lease liabilities, net of current portion	51,194	44,416
Finance lease liabilities, net of current portion	—	2,375
Deferred revenue, net of current portion	3,886	7,139
Deferred tax liabilities	70	38
Other non-current liabilities	4,878	—
Total liabilities	215,916	166,248
Commitments and contingent liabilities (see Notes 4 and 13)		
Stockholders' equity		
Class A common stock—par value \$0.0001; 500,000,000 shares authorized and 38,971,324 shares issued and outstanding as of December 31, 2020; 500,000,000 shares authorized and 34,525,386 shares issued and outstanding as of December 31, 2019	4	3
Class B common stock—par value \$0.0001; 100,000,000 shares authorized and 31,707,866 shares issued and outstanding as of December 31, 2020; 100,000,000 shares authorized and 32,942,636 shares issued and outstanding as of December 31, 2019	3	3
Additional paid-in capital	470,498	340,929
Accumulated other comprehensive loss	(5,010)	(285)
Accumulated deficit	(168,890)	(135,413)
Total stockholders' equity	296,605	205,237
Total liabilities and stockholders' equity	\$ 512,521	\$ 371,485

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

APPIAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except share and per share data)

	Year Ended December 31,		
	2020	2019	2018
Revenue			
Subscriptions	\$ 198,710	\$ 151,299	\$ 126,012
Professional services	105,863	109,053	100,731
Total revenue	304,573	260,352	226,743
Cost of revenue			
Subscriptions	20,826	17,098	11,997
Professional services	67,940	76,743	72,928
Total cost of revenue	88,766	93,841	84,925
Gross profit	215,807	166,511	141,818
Operating expenses			
Sales and marketing	130,316	117,440	105,992
Research and development	70,241	58,043	44,724
General and administrative	53,152	41,496	37,821
Total operating expenses	253,709	216,979	188,537
Operating loss	(37,902)	(50,468)	(46,719)
Other (income) expense			
Other (income) expense, net	(5,786)	(941)	2,295
Interest expense	478	367	198
Total other (income) expense	(5,308)	(574)	2,493
Loss before income taxes	(32,594)	(49,894)	(49,212)
Income tax expense	883	820	239
Net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)
Net loss per share:			
Basic and diluted	\$ (0.48)	\$ (0.77)	\$ (0.80)
Weighted average common shares outstanding:			
Basic and diluted	69,050,565	65,479,327	62,140,684

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

APPIAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)
Comprehensive income (loss), net of income taxes:			
Foreign currency translation adjustment	(4,703)	(827)	103
Unrealized losses on available-for-sale securities	(22)	—	—
Total other comprehensive loss, net of income taxes	\$ (38,202)	\$ (51,541)	\$ (49,348)

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

APPIAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)
(in thousands, except share data)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance, December 31, 2017	60,599,877	\$ 6	\$ 141,268	\$ 439	\$ (96,189)	\$ 45,524
Net loss	—	—	—	—	(49,451)	(49,451)
Issuance of common stock from public offering, net of issuance costs	1,675,000	—	57,829	—	—	57,829
Issuance of common stock to directors	11,952	—	—	—	—	—
Vesting of restricted stock units	143,390	—	—	—	—	—
Exercise of stock options	1,486,218	—	3,133	—	—	3,133
Stock-based compensation expense	—	—	16,054	—	—	16,054
Other comprehensive income	—	—	—	103	—	103
Balance, December 31, 2018	63,916,437	6	218,284	542	(145,640)	73,192
Cumulative-effect adjustment for the adoption of ASC 606	—	—	—	—	60,941	60,941
Net loss	—	—	—	—	(50,714)	(50,714)
Issuance of common stock from public offering, net of issuance costs	1,825,000	—	101,303	—	—	101,303
Issuance of common stock to directors	10,654	—	—	—	—	—
Vesting of restricted stock units	521,460	—	—	—	—	—
Exercise of stock options	1,194,471	—	4,899	—	—	4,899
Stock-based compensation expense	—	—	16,443	—	—	16,443
Other comprehensive loss	—	—	—	(827)	—	(827)
Balance, December 31, 2019	67,468,022	6	340,929	(285)	(135,413)	205,237
Net loss	—	—	—	—	(33,477)	(33,477)
Issuance of common stock from public offering, net of issuance costs	1,931,206	1	107,914	—	—	107,915
Issuance of common stock to directors	7,942	—	—	—	—	—
Vesting of restricted stock units	270,609	—	—	—	—	—
Exercise of stock options	1,001,411	—	6,376	—	—	6,376
Stock-based compensation expense	—	—	15,279	—	—	15,279
Other comprehensive loss	—	—	—	(4,725)	—	(4,725)
Balance, December 31, 2020	70,679,190	7	470,498	(5,010)	(168,890)	296,605

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

APIIAN CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31,		
	2020	2019	2018
Cash flows from operating activities:			
Net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)
Adjustments to reconcile net loss to net cash used in operating activities:			
Depreciation and amortization	5,851	4,742	2,021
Bad debt expense	984	99	211
Loss (gain) on disposal of property and equipment	22	146	(4)
Change in fair value of available-for-sale securities	22	—	—
Deferred income taxes	(184)	(334)	(218)
Stock-based compensation	15,279	16,443	16,054
Changes in assets and liabilities:			
Accounts receivable	(33,559)	7,432	(23,332)
Prepaid expenses and other assets	3,740	8,972	(1,025)
Deferred commissions	(8,575)	(9,319)	(7,615)
Accounts payable and accrued expenses	(4,238)	(4,039)	7,461
Accrued compensation and related benefits	11,801	(3,072)	(3)
Other liabilities	3,681	1,318	1,823
Deferred revenue	27,626	12,573	23,023
Operating lease liabilities	3,407	6,827	—
Deferred rent, non-current	—	—	(266)
Net cash used in operating activities	(7,620)	(8,926)	(31,321)
Cash flows from investing activities:			
Purchases of investments	(145,968)	—	—
Payments for acquisitions, net of cash acquired	(6,138)	—	—
Proceeds from sale of equipment	—	—	4
Purchases of property and equipment	(1,251)	(32,421)	(7,014)
Net cash used in investing activities	(153,357)	(32,421)	(7,010)
Cash flows from financing activities:			
Principal payments on finance leases	(3,822)	(653)	—
Proceeds from public offerings, net of underwriting discounts	108,260	101,653	58,258
Payments of costs related to public offerings	(346)	(350)	(429)
Proceeds from exercise of common stock options	6,376	4,899	3,133
Net cash provided by financing activities	110,468	105,549	60,962
Effect of foreign exchange rate changes on cash and cash equivalents	3,216	623	(1,459)
Net (decrease) increase in cash and cash equivalents	(47,293)	64,825	21,172
Cash and cash equivalents, beginning of period	159,755	94,930	73,758
Cash and cash equivalents, end of period	\$ 112,462	\$ 159,755	\$ 94,930
Supplemental disclosure of cash flow information:			
Cash paid for interest	\$ 165	\$ 331	\$ 46
Cash paid for income taxes	\$ 1,182	\$ 356	\$ 680
Supplemental disclosure of non-cash financing information:			
Finance lease obligations to acquire new office furniture and fixtures and computer hardware	\$ —	\$ 4,475	\$ —

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

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization and Description of Business

Appian Corporation (together with its subsidiaries, "Appian," the "Company," "we," or "our") provides a low-code automation platform that accelerates the creation of high-impact business applications, enabling our customers to automate the most important aspects of their business. Global organizations use our applications to improve customer experience, achieve operational excellence, and simplify global risk management and compliance. We were incorporated in the state of Delaware in August 1999. We are headquartered in McLean, Virginia and operate in Canada, Switzerland, the United Kingdom, France, Germany, the Netherlands, Italy, Australia, Spain, Singapore, and Sweden.

2. Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements and footnotes have been prepared in accordance with accounting principles generally accepted in the United States ("U.S. GAAP") as contained in the Financial Accounting Standards Board ("FASB") Accounting Standards Codification (the "Codification" or "ASC").

We adopted Accounting Standards Update ("ASU") 2014-09, *Revenue from Contracts with Customers (Topic 606)* ("ASC 606"), the new revenue recognition guidance, on January 1, 2019 using the modified retrospective method. Under this method of adoption, we recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of accumulated deficit and applied the new standard only to contracts that were not completed prior to January 1, 2019. For fiscal years 2018 and prior, revenue was recognized under ASC Topic 605, *Revenue Recognition* ("ASC 605").

Use of Estimates

The preparation of our consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and judgments that affect the amounts reported in these consolidated financial statements and accompanying notes. Although we believe the estimates we use are reasonable, due to the inherent uncertainty involved in making these estimates, actual results reported in future periods could differ from those estimates.

Significant estimates embedded in the consolidated financial statements include revenue recognition, income taxes and the related valuation allowance, the valuation of goodwill and intangible assets, leases, costs to obtain a contract with a customer, the valuation of financial instruments, and stock-based compensation.

The ongoing outbreak of the novel coronavirus disease ("COVID-19") has resulted in the declaration of a global pandemic and introduced a level of disruption and uncertainty into the financial markets and global economy. While we continue to monitor the developments surrounding the pandemic, as of the date of issuance of these financial statements, we are not aware of any specific events or circumstances that would require us to update our estimates, assumptions, and judgments or revise the carrying value of our assets or liabilities. We cannot estimate the impacts COVID-19 will have on our business going forward as such impacts will be largely dependent upon a number of factors outside of our control including the extent and duration of the outbreak as well as any mitigating actions which may be undertaken by global governments and the general public.

Principles of Consolidation

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

Public Offerings

In June 2020, we completed an underwritten public offering of 2,500,000 shares of our Class A common stock, of which 1,931,206 shares of Class A common stock were sold by us and 568,794 shares of Class A common stock were sold by existing stockholders. The underwriter purchased the shares from us and the selling stockholders at a price of \$56.50 per share. Our net

proceeds from the offering were \$107.9 million, after deducting underwriting discounts and commissions and offering expenses. We did not receive any of the proceeds from the sale of shares by the selling stockholders.

In September 2019, we completed an underwritten public offering of 2,329,000 shares of our Class A common stock, of which 1,825,000 shares of Class A common stock were sold by us and 504,000 shares of Class A common stock were sold by existing stockholders. The underwriter purchased the shares from us and the selling stockholders at a price of \$55.70 per share. Our net proceeds from the offering were \$101.3 million, after deducting underwriting discounts and commissions and offering expenses. We did not receive any of the proceeds from the sale of shares by the selling stockholders.

In August 2018, we completed an underwritten public offering of 2,000,000 shares of our Class A common stock, of which 1,675,000 shares of Class A common stock were sold by us and 325,000 shares of Class A common stock were sold by existing stockholders, at an offering price to the public of \$35.15 per share. Our net proceeds from the offering were \$57.8 million, after deducting underwriting discounts and commissions and offering expenses. We did not receive any of the proceeds from the sale of shares by the selling stockholders.

Revenue Recognition

Refer to Note 3 for a detailed discussion on specific revenue recognition principles related to our major revenue streams.

Cost of Revenue

Subscriptions

Cost of subscriptions revenue consists primarily of fees paid to our third-party managed hosting providers and other third-party service providers, personnel costs such as payroll and benefits for our technology operations and customer support teams, and allocated facility costs and overhead.

Professional Services

Cost of professional services revenue includes all direct and indirect costs to deliver our professional services and training, including employee compensation for our global professional services and training personnel, third-party contractor costs, allocated facility costs and overhead, and the costs of billable expenses such as travel and lodging. The unpredictability of the timing of entering into significant professional services agreements sold on a standalone basis may cause significant fluctuations in our quarterly financial results and allocated facility costs and overhead.

Concentration of Credit and Customer Risk

Our financial instruments exposed to concentration of credit and customer risk consist primarily of cash and cash equivalents, trade accounts receivable, and our short- and long-term investments. Deposits held with banks may exceed the amount of insurance provided on such deposits. We believe the financial institutions holding our cash deposits are financially sound and, accordingly, minimal credit risk exists with respect to these balances.

With regard to our customers, credit evaluation and account monitoring procedures are used to minimize the risk of loss. We believe no additional credit risk beyond amounts provided for collection loss are inherent in accounts receivable. Revenue generated from government agencies represented 18.1%, 17.1%, and 15.7% of our revenue for the years ended December 31, 2020, 2019, and 2018, respectively, of which the top three federal government agencies generated 6.6%, 7.4%, and 7.8% of our revenue for the years ended December 31, 2020, 2019, and 2018, respectively. Additionally, 33.8%, 32.3%, and 28.7% of our revenue during the years ended December 31, 2020, 2019, and 2018, respectively, was generated from customers outside the United States.

Cash and Cash Equivalents

APPIAN CORPORATION AND SUBSIDIARIES
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We consider all highly liquid investments with an original or remaining maturity of three months or less at the date of purchase, as well as overnight repurchase agreements, to be cash equivalents.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are stated at realizable value, net of an allowance for doubtful accounts. The allowance for doubtful accounts is based on our assessment of the collectability of accounts and incorporates an estimation of expected lifetime credit losses on our receivables. We regularly review the composition of the accounts receivable aging, historical bad debts, changes in payment patterns, customer creditworthiness, and current economic trends. If the financial condition of our customers were to deteriorate, resulting in their inability to make required payments, additional provisions for doubtful accounts would be required and would increase bad debt expense. There was a \$0.8 million increase in the allowance for doubtful accounts from December 31, 2019 to December 31, 2020.

Activity in the allowance for doubtful accounts was as follows (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Balance as of January 1	\$ 600	\$ 600	\$ 400
Additions	984	99	211
Less write-offs, net of recoveries	(184)	(99)	(11)
Balance as of December 31	<u>\$ 1,400</u>	<u>\$ 600</u>	<u>\$ 600</u>

Non-Trade Receivables

We record non-trade receivables to reflect amounts due for activities other than sales of subscriptions to our platform and professional services. Our non-trade receivables related entirely to a receivable resulting from our tenant improvement allowance. The tenant improvement allowance receivable was \$14.4 million as of December 31, 2018 and was classified within Prepaid expenses and other current assets in the accompanying consolidated balance sheets. We recognized our initial tenant improvement allowance receivable of \$15.8 million related to our new headquarters once we took initial possession of the space in October 2018. We recognized an additional tenant improvement allowance receivable of \$2.6 million when we took possession of adjacent office space in February 2019. We had received the entire tenant improvement allowance of \$17.0 million as of December 31, 2019, and therefore, there was no receivable balance remaining as of such date.

Assets Recognized from the Costs to Obtain a Contract with a Customer

We capitalize the incremental costs of obtaining a contract with a customer, including sales commissions paid to our direct sales force that are incremental costs to obtaining customer contracts. These costs are recorded as deferred commissions in the consolidated balance sheets. Costs to obtain a contract for a new customer or upsell are amortized over an estimated economic life of five years as sales commissions on initial sales are not commensurate with sales commissions on contract renewals. We determine the estimated economic life based on both qualitative and quantitative factors such as expected renewals, product life cycles, contractual terms, and customer attrition. We periodically review the carrying amount of deferred contract acquisition costs to determine whether events or changes in circumstances have occurred that could impact the estimated economic life. Commissions paid relating to contract renewals are deferred and amortized over the related renewal period. We also capitalize the incremental fringe benefits associated with commission expenses paid to our direct sales force. Costs to obtain a contract for professional services arrangements are expensed as incurred as the contractual period of our professional services arrangements are one year or less.

Amortization associated with commission expense is recorded to sales and marketing costs in our consolidated statements of operations. The following table summarizes the activity of costs to obtain a contract with a customer for the years ended December 31, 2020 and December 31, 2019 (in thousands):

APPIAN CORPORATION AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

	Year Ended December 31,	
	2020	2019
Balance as of January 1	\$ 43,522	\$ 29,108
Adoption of ASC 606	—	5,094
Additional contract costs deferred	31,898	25,004
Amortization of deferred contract costs	(23,323)	(15,684)
Balance as of December 31	<u>\$ 52,097</u>	<u>\$ 43,522</u>

For the periods prior to January 1, 2019 under ASC 605, deferred commissions are the incremental costs directly associated with subscription agreements with customers and consist of sales commissions paid to our direct sales force. Commissions are considered direct and incremental and as such are deferred and amortized over the terms of the related customer contracts consistent with the related revenue.

Commission expense was \$23.3 million, \$15.7 million, and \$15.6 million for the years ended December 31, 2020, 2019, and 2018, respectively.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation and amortization. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Significant additions or improvements extending the useful life of an asset are capitalized, while repairs and maintenance costs which do not significantly improve the related assets or extend their useful lives are charged to expense as incurred.

The following table outlines the useful lives of our major asset categories:

Asset Category	Useful Life (in years)
Computer software	3
Computer hardware	3
Equipment	5
Office furniture and fixtures	10
Leasehold improvements	(a)

(a) - Leasehold improvements have an estimated useful life of the shorter of the useful life of the assets or the lease term.

Impairment of Long-Lived Assets

Long-lived assets and certain intangible assets are reviewed for impairment whenever events or circumstances indicate the carrying amount of an asset may not be recoverable through undiscounted cash flows from the use of the assets. If such assets are considered to be impaired, the assets are written down to their estimated fair value. No indicators of impairment were identified for the years ended December 31, 2020, 2019, and 2018.

Investments and Fair Value of Financial Instruments

Refer to Note 16 for a detailed discussion on our policies specific to investments and determining fair value.

Stock-Based Compensation

We account for stock-based compensation expense related to stock-based awards based on the estimated fair value of the award on the grant date. We calculate the fair value of stock options containing only a service condition using the Black-Scholes option pricing model. The fair value of restricted stock units ("RSUs") is based on the closing market price of our common stock on the Nasdaq Global Market on the date of grant. For service-based awards such as RSUs, stock-based compensation expense is recognized on a straight-line basis over the requisite service period. For performance-based awards, stock-based compensation expense is recognized using the accelerated attribution method based on the probability of satisfying

the performance condition. For awards that contain market conditions, compensation expense is measured using a Monte Carlo simulation and recognized using the accelerated attribution method over the derived service period based on the expected market performance as of the grant date. We account for forfeitures as they occur rather than estimating expected forfeitures.

Leases

Refer to Note 4 for a detailed discussion on our policies specific to leasing arrangements.

Basic and Diluted Loss per Common Share

We compute net loss per common share using the two-class method required for multiple classes of common stock and participating securities. The rights, including the liquidation and dividend rights, of the Class A common stock and Class B common stock are substantially identical, other than voting and conversion rights. Accordingly, the Class A common stock and Class B common stock share equally in our net losses.

Basic net loss per common share is computed by dividing net loss by the weighted-average number of shares of common stock outstanding during the period. Diluted net loss per common share is computed by dividing net loss attributable to common stockholders by the weighted-average number of shares of common stock outstanding during the period increased by common shares that could be issued upon the conversion or exercise of other outstanding securities to the extent those additional common shares would be dilutive. The dilutive effect of potentially dilutive securities is reflected in diluted net loss per share by application of the treasury stock method.

Due to net losses for the years ended December 31, 2020, 2019, and 2018, basic and diluted net loss per share were the same as the effect of potentially dilutive securities would have been anti-dilutive.

Income Taxes

We use the asset and liability method of accounting for income taxes in which deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the consolidated financial statement carrying amounts of existing assets and liabilities and their respective tax bases. We measure deferred tax assets and liabilities using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be reversed. We recognize the effect on deferred tax assets and liabilities of a change in tax rates as income and expense in the period that includes the enactment date. A valuation allowance is established if it is more likely than not that all or a portion of the deferred tax asset will not be realized.

Our tax positions are subject to income tax audits by multiple tax jurisdictions throughout the world. We recognize the tax benefit of an uncertain tax position only if it is more likely than not the position is sustainable upon examination by the taxing authority. We measure the tax benefit recognized as the largest amount of benefit which is more likely than not to be realized upon settlement with the taxing authority. We recognize penalties and interest related to unrecognized tax benefits as income tax expense.

We calculate the current and deferred income tax provision based on estimates and assumptions that could differ from the actual results reflected in income tax returns filed in subsequent years and record adjustments based on filed income tax returns when identified. The amount of income taxes paid is subject to examination by U.S. federal, state, and foreign tax authorities. The estimate of the potential outcome of any uncertain tax issue is subject to our assessment of relevant risks, facts, and circumstances existing at that time. To the extent the assessment of such tax position changes, we record the change in estimate in the period in which we make that determination.

Segment Reporting

Operating segments are defined as components of an enterprise for which discrete financial information is available that is evaluated regularly by the chief operating decision maker (“CODM”) for purposes of allocating resources and evaluating financial performance. Our CODM is our chief executive officer, who reviews financial information presented on a company wide basis for purposes of allocating resources and evaluating financial performance. As such, our operations constitute a single operating segment and one reportable segment.

Foreign Currency

Our operations located outside of the United States where the local currency is the functional currency are translated into U.S. dollars using the current rate method. Results of operations are translated at the average rate of exchange for the period. Assets and liabilities are translated at the closing rates on the balance sheet date. Gains and losses on translation of these accounts are accumulated and reported as a separate component of stockholders' equity and other comprehensive income.

Gains and losses on foreign currency transactions are recognized in the accompanying consolidated statements of operations as a component of other expense, net. Transaction gains and losses from transactions denominated in foreign currencies resulted in net transaction gains of \$4.3 million for the year ended December 31, 2020 and net transaction losses of \$0.2 million and \$3.0 million for the years ended December 31, 2019 and 2018, respectively.

Research and Development

Research and development expenses include payroll, employee benefits, and other headcount-related costs associated with product development. Our product utilizes a common codebase, whether accessed by customers via the cloud or via an on-premises installation. Since our software is sold and licensed externally, we consider our software as external-use software for purposes of applying the capitalized software development guidance. Product development costs are expensed as incurred until technological feasibility has been established, which we define as the completion of all planning, designing, coding, and testing activities necessary to establish products that meet design specifications including functions, features, and technical performance requirements. We have determined technological feasibility for our software products is reached shortly before they are released for sale. Costs incurred after technological feasibility is established are not significant, and accordingly we expense all research and development costs when incurred.

Advertising Expenses

We expense advertising costs as they are incurred. Advertising expenses were \$6.0 million, \$4.1 million, and \$3.9 million for the years ended December 31, 2020, 2019, and 2018, respectively.

Recent Accounting Pronouncements

Adopted

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which requires entities to measure all expected credit losses for financial assets held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. This replaces the existing incurred loss model and is applicable to the measurement of credit losses on financial assets measured at amortized cost. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Adopting the standard did not have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), which eliminates, modifies, and adds disclosure requirements for fair value measurements. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Adopting the standard did not have a material impact on our consolidated financial statements.

In August 2018, the FASB issued ASU 2018-15, *Intangibles—Goodwill and Other—Internal-Use Software (Subtopic 350-40), Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract*, which aligns the requirements for capitalizing implementation costs in cloud computing arrangements with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019. Adopting the standard did not have a material impact on our consolidated financial statements.

Not Yet Adopted

In March 2020, the FASB issued ASU 2020-04, *Reference Rate Reform - Facilitation of the Effects of Reference Rate Reform on Financial Reporting (Topic 848)*, which provides temporary optional expedients and exceptions to the GAAP guidance on contract modifications and hedge accounting to ease the financial reporting burdens of the expected market transition from LIBOR and other interbank offered rates to alternative reference rates such as the Secured Overnight Financing Rate (SOFR). This guidance is effective upon issuance and generally can be applied through the end of calendar year 2022. We are currently evaluating the impact and applicability of this new standard.

3. Revenue

Revenue Recognition

We generate subscriptions revenue primarily through the sale of software-as-a-service ("SaaS") subscriptions bundled with maintenance and support and hosting services as well as term license subscriptions bundled with maintenance and support. We generate professional services revenue from fees for our consulting services, including application development and deployment assistance as well as training related to our platform.

The following table summarizes revenue from contracts with customers for the years ended December 31, 2020 and 2019 (in thousands):

	Year Ended December 31,	
	2020	2019
SaaS subscriptions	\$ 129,219	\$ 95,028
Term license subscriptions	51,415	40,428
Maintenance and support	18,076	15,843
Professional services	105,863	109,053
Total revenue	\$ 304,573	\$ 260,352

Performance Obligations and Timing of Revenue Recognition

We primarily sell products and services that fall into the categories discussed below. Each category contains one or more performance obligations that are either (1) capable of being distinct (i.e., the customer can benefit from the product or service on its own or together with readily available resources, including those purchased separately from us) and distinct within the context of the contract (i.e., separately identified from other promises in the contract) or (2) a series of distinct products or services that are substantially the same and have the same pattern of transfer to the customer. Our term license subscriptions are delivered at a point in time while our SaaS subscriptions, maintenance and support, and professional services are delivered over time.

Subscriptions Revenue

Subscriptions revenue is primarily related to (1) SaaS subscriptions bundled with maintenance and support and hosting services and (2) term license subscriptions bundled with maintenance and support. We generally charge subscription fees on a per-user basis and, to a lesser degree, non-user based single application licenses. We bill customers and collect payment for subscriptions to our platform in advance on an annual, quarterly, or monthly basis. In certain instances, our customers have paid their entire contract up front.

SaaS Subscriptions

We generate cloud-based subscription revenue primarily from the sales of subscriptions to access our cloud offering, together with related support services to our customers. We perform all required maintenance and support for our cloud offering. Revenue is recognized on a ratable basis over the contract term beginning on the date the service is made available to the customer. Our cloud-based subscription contracts generally have a term of one to three years in length. We bill customers and collect payment for subscriptions to our platform in advance, and they are non-cancellable.

Term License Subscriptions

Our term license subscription revenue is derived from customers with on-premises installations of our platform pursuant to contracts that were historically one to three years in length. The majority of recent contracts have been one year in length. Although term license subscriptions are sold with maintenance and support, the software is fully functional at the beginning of the subscription and is considered a distinct performance obligation. On rare occasions, a cloud-based subscription may include the right for the customer to take possession of the license and as such, the revenue is treated as a license. Revenue from term license subscriptions is recognized when control of the software license has transferred to the customer, which is the later of delivery or commencement of the contract term.

Maintenance and Support

Maintenance and support subscriptions include both technical support and when-and-if-available software upgrades, which are treated as a single performance obligation as they are considered a series of distinct services that are substantially the same and have the same duration and measure of progress. Revenue from maintenance and support is recognized ratably over the contract period, which is the period over which the customer has continuous access to maintenance and support.

Professional Services

Our professional services revenue is comprised of fees for consulting services, including application development and deployment assistance as well as training services related to our platform. Our professional services are considered distinct performance obligations when sold standalone or with other products.

Consulting Services

We sell consulting services to assist customers in planning and executing the deployment of our software. Customers are not required to use consulting services to fully benefit from the software. Consulting services are regularly sold on a standalone basis and either (1) under a fixed-fee arrangement or (2) on a time and materials basis. Consulting contracts are each considered separate performance obligations because they do not integrate with each other or with other products and services to deliver a combined output to the customer, do not modify or customize (or are not modified or customized by) each other or other products and services, and do not affect the customer's ability to use the other consulting offerings or other products and services. Revenue under consulting contracts is recognized over time as services are delivered. For time and materials-based consulting contracts, we have elected the practical expedient of recognizing revenue upon invoicing since the invoiced amount corresponds directly to the value of our service to date.

Training Services

We sell various training services to our customers. Training services are sold in the form of prepaid training credits that are redeemed based on a fixed rate per course. Training revenue is recognized when the associated training services are delivered.

Significant Judgments and Estimates

Determining the Transaction Price

The transaction price includes both fixed and variable consideration. Variable consideration is included in the transaction price to the extent it is probable a significant reversal will not occur. The amount of variable consideration excluded from the transaction price for the years ended December 31, 2020 and 2019 was insignificant. Our estimates of variable consideration are also subject to subsequent true-up adjustments and may result in changes to transaction prices; however, such true-up adjustments are not expected to be material.

Allocating the Transaction Price Based on Standalone Selling Prices ("SSP")

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We allocate the transaction price to each performance obligation in a contract based on its relative SSP. The SSP is the observable price at which we sell the product or service separately. In the absence of observable pricing, we estimate SSP using the residual approach. We establish SSP as follows:

1. SaaS subscriptions - Given the highly variable selling price of our SaaS subscriptions, we establish the SSP of our SaaS subscriptions using a residual approach after first determining the SSP of consulting and training services. We have concluded the residual approach to estimating SSP of our SaaS subscriptions is an appropriate allocation of the transaction price.
2. Term license subscriptions - Given the highly variable selling price of our term license subscriptions, we have established SSP of term license subscriptions using a residual approach after first determining the SSP of maintenance and support. Maintenance and support is sold on a standalone basis in conjunction with renewals of our legacy perpetual software licenses and within a narrow range of the net license fee. Because an economic relationship exists between the license and maintenance and support, we have concluded the residual approach to estimating SSP of term license subscriptions is an appropriate allocation of the transaction price.
3. Maintenance and support - We establish SSP of maintenance and support as a percentage of the stated net subscription fee based on observable pricing of maintenance and support renewals from our legacy perpetual software licenses.
4. Consulting services and training services - SSP of consulting services and training services is established based on the observable pricing of standalone sales within each geographic region where the services are sold.

Contract Balances

Timing may differ between the satisfaction of performance obligations and the invoicing and collection of amounts related to our contracts with customers. Contract assets primarily relate to unbilled amounts for contracts with customers for which the amount of revenue recognized exceeds the amount billed to the customer. Contract assets are transferred to accounts receivable when the right to invoice becomes unconditional. As of December 31, 2020 and December 31, 2019, contract assets of \$20.1 million and \$22.8 million, respectively, are included in the Prepaid expenses and other current assets and Other assets line items in our consolidated balance sheets.

Contract liabilities consist of deferred revenue and include payments received in advance of the satisfaction of performance obligations. Deferred revenue is then recognized as the revenue recognition criteria are met. Deferred revenue that will be recognized during the succeeding 12-month period is recorded as current, and the remaining deferred revenue is recorded as non-current. For the year ended December 31, 2020, we recognized \$83.4 million of revenue that was included in the deferred revenue balance as of December 31, 2019.

Transaction Price Allocated to the Remaining Performance Obligations

As of December 31, 2020, we had an aggregate transaction price of \$206.2 million allocated to unsatisfied performance obligations. We expect to recognize \$189.6 million of this balance as revenue over the next 24 months with the remaining amount recognized thereafter.

4. Leases

At the inception of an arrangement, we determine whether the arrangement is or contains a lease based on the unique facts and circumstances present and the classification of the lease. Operating leases with a term greater than one year are recognized on the balance sheet as right-of-use ("ROU") assets, lease liabilities, and, if applicable, long-term lease liabilities. ROU assets represent our right to use an underlying asset for the lease term, and lease liabilities represent our obligation to make lease payments arising from the lease. We have elected not to recognize on the balance sheet leases with a term of one year or less. For contracts with lease and non-lease components, we have elected not to allocate the contract consideration and to account for the lease and non-lease components as a single lease component. Finance leases are included in the Property and equipment, net, Finance lease liabilities, current, and Finance lease liabilities, net of current portion line items in our consolidated balance sheets.

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Lease liabilities and their corresponding ROU assets are recorded based on the present value of lease payments over the expected lease term. The implicit rates within most of our leases are generally not determinable; therefore, we use the incremental borrowing rate at the lease commencement date to determine the present value of lease payments. The determination of our incremental borrowing rate requires judgment and is estimated for each lease based on the rate we would have to pay for a collateralized loan with the same term and payments as the lease. We consider various factors, including our level of collateralization, estimated credit rating, and the currency in which the lease is denominated. Operating lease ROU assets also include any lease prepayments, offset by lease incentives. Certain of our leases include options to extend or terminate the lease. An option to extend the lease is considered in connection with determining the ROU asset and lease liability when it is reasonably certain we will exercise that option while an option to terminate is considered unless it is reasonably certain we will not exercise the option. For certain equipment leases, we apply a portfolio approach to effectively account for the operating lease ROU assets and liabilities.

Expense for operating leases is recognized on a straight-line basis over the lease term as an operating expense while the expense for finance leases is recognized as depreciation expense and interest expense. We have lease agreements which require payments for lease and non-lease components (i.e., common area maintenance) that are accounted for as a single lease component. Variable lease payment amounts that cannot be determined at the commencement of the lease, such as maintenance costs based on future obligations, are not included in ROU assets or lease liabilities but are rather expensed as incurred and recorded as variable lease expense.

As of December 31, 2020, we have operating leases for corporate offices. Our operating leases have remaining lease terms ranging from 3 months to 11 years, some of which include options to extend the leases for up to 10 years.

In April 2018, we entered into a lease agreement with respect to 176,222 square feet of office space in McLean, Virginia for a new corporate headquarters. The initial term of the lease was 150 months. We took initial possession of the first phase of the new headquarters in October 2018 and began to recognize rent expense as of that date. In February 2019, we took possession of an additional 28,805 square feet of adjacent office space.

In January 2020, we entered into an amendment which adjusts the original terms of the headquarters lease. Under this amendment, we exercised an option to expand occupancy, adding 34,158 square feet of office space. Occupancy of the added space commenced on October 14, 2020. Pursuant to the guidance of ASC 842, the amendment is considered a modification to the original lease and is accounted for as a separate contract because it represents a new ROU asset and the lease costs on the new space are charged at prevailing market rates. Effective July 1, 2020, we took possession of the space, began to recognize rent expense, and reported a \$7.9 million ROU asset and lease liability on our consolidated balance sheets.

In October 2020, we paid the full \$2.7 million principal balances outstanding under our finance leases pursuant to an option permitting us to pay such balances in full at any time. As of the date of the paydown, the titles to the assets were transferred to us, the associated ROU liabilities were retired, the carrying values of the purchased assets were adjusted, and the assets were reclassified from finance leases to property and equipment, net on the consolidated balance sheets.

The following table sets forth the components of lease expense for the years ended December 31, 2020 and 2019 (in thousands):

	Year Ended December 31,	
	2020	2019
Operating lease cost	\$ 6,649	\$ 9,733
Finance lease costs:		
Amortization of right-of-use assets	1,242	700
Interest on lease liabilities	150	108
Short-term lease cost	565	462
Variable lease cost	281	409
Total	\$ 8,887	\$ 11,412

Supplemental balance sheet information related to leases as of December 31, 2020 and December 31, 2019 was as follows (in thousands, except for lease term and discount rate):

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	As of December 31,	
	2020	2019
Operating Leases		
Operating right-of-use assets	\$ 30,659	\$ 24,205
Operating lease liabilities, current	\$ 6,923	\$ 3,836
Operating lease liabilities, net of current portion	51,194	44,416
Total operating lease liabilities	\$ 58,117	\$ 48,252
Finance Leases		
Property and equipment, at cost	\$ —	\$ 4,475
Accumulated depreciation	—	(703)
Property and equipment, net	\$ —	\$ 3,772
Finance lease liabilities, current	\$ —	\$ 1,447
Finance lease liabilities, net of current portion	—	2,375
Total finance lease liabilities	\$ —	\$ 3,822
Weighted Average Remaining Lease Term (in years)		
Operating leases	10.6	11.4
Finance leases	0.0	2.5
Weighted Average Discount Rate		
Operating leases	9.6 %	9.8 %
Finance leases	— %	5.5 %

For the year ended December 31, 2020, amortization of operating ROU assets totaled \$1.6 million while interest expense on operating ROU liabilities totaled \$1.9 million.

Supplemental cash flow information related to leases for the years ended December 31, 2020 and 2019 was as follows (in thousands):

	Year Ended December 31,	
	2020	2019
Cash paid for amounts included in the measurement of lease liabilities:		
Operating cash outflows for operating leases	\$ 3,407	\$ 6,413
Operating cash outflows for finance leases	150	108
Financing cash outflows for finance leases	3,822	653
ROU assets obtained in exchange for lease obligations:		
Operating leases	—	523
Finance leases	—	4,475

A summary of our future minimum lease commitments under non-cancellable leases as of December 31, 2020 is as follows (in thousands):

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	Operating Leases
2021	\$ 7,487
2022	8,104
2023	8,174
2024	8,571
2025	9,265
Thereafter	57,386
Total lease payments	98,987
Less: imputed interest	(40,870)
Total	<u>\$ 58,117</u>

5. Acquisitions

Novayre Solutions SL

In January 2020, we acquired 100% of the outstanding common stock of Novayre Solutions SL ("Novayre"), a developer of a robotic process automation platform, for approximately \$6.9 million. The acquisition was made due to the attractive nature of the product offerings of Novayre and in furtherance of our objective to enhance our automation platform. The transaction was financed through available cash on hand.

The allocation of the purchase price was based upon estimated fair values of the assets acquired and liabilities assumed. The final allocation of the purchase price is as follows:

Cash acquired	\$ 731
Other current assets	213
Property and equipment	22
Developed technology	1,537
Customer relationships	406
Goodwill	4,348
Other noncurrent assets	10
Total assets acquired	7,267
Current liabilities	14
Noncurrent liabilities	344
Total liabilities assumed	358
Net assets acquired	<u>\$ 6,909</u>

There were no changes to our reportable segments as a result of the acquisition, and revenue and expenses from the date of the acquisition through December 31, 2020 were immaterial. Additionally, acquisition costs incurred in relation to the transaction were immaterial.

Acquired property and equipment is depreciated on a straight-line basis over the assets' respective estimated remaining useful lives. Goodwill is calculated as the excess of the consideration transferred over the fair value of the identifiable net assets acquired and represents the future economic benefits expected to arise from other intangible assets acquired that do not qualify for separate recognition, including assembled workforce, non-contractual relationships, and expected future synergies. We do not expect the purchase price allocated to goodwill and intangible assets to be deductible for tax purposes.

6. Property and Equipment, net

Property and equipment, net consisted of the following as of December 31, 2020 and 2019 (in thousands):

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	As of December 31,	
	2020	2019
Leasehold improvements	\$ 36,263	\$ 37,130
Office furniture and fixtures	2,521	4,963
Computer hardware	4,535	3,365
Computer software	1,352	1,350
Equipment	49	72
Property and equipment, gross	44,720	46,880
Less: accumulated depreciation	(9,316)	(7,326)
Property and equipment, net	<u>\$ 35,404</u>	<u>\$ 39,554</u>

Depreciation expense totaled \$5.4 million, \$4.7 million, and \$2.0 million for the years ended December 31, 2020, 2019, and 2018, respectively. During the year ended December 31, 2020, we retired \$1.3 million of leasehold improvements, \$0.2 million of computer hardware, and \$0.1 million of office furniture and fixtures and equipment, and nominal losses on disposal were recorded. During the year ended December 31, 2019, we retired \$3.2 million of leasehold improvements, \$0.9 million of computer hardware, \$0.4 million of office furniture and fixtures, \$0.4 million of software, and \$0.1 million of equipment and recorded a loss on disposal of \$0.1 million.

7. Accrued Expenses

Accrued expenses consisted of the following as of December 31, 2020 and 2019 (in thousands):

	As of December 31,	
	2020	2019
Accrued hosting costs	\$ 1,229	\$ 1,865
Accrued contract labor costs	908	1,921
Accrued marketing and trade show expenses	596	365
Accrued audit and tax expenses	370	315
Accrued legal costs	760	422
Accrued reimbursable employee expenses	231	1,353
Accrued third party license fees	570	288
Other accrued expenses	1,157	959
Total	<u>\$ 5,821</u>	<u>\$ 7,488</u>

8. Debt

Line of Credit

In November 2017, we entered into a \$20.0 million revolving line of credit with a lender. The facility matures in November 2022. We may elect whether amounts drawn on the revolving line of credit bear interest at a floating rate per annum equal to either LIBOR or the prime rate plus an additional interest rate margin that is determined by the availability of the borrowings under the revolving line of credit. The additional interest rate margin will range from 2.00% to 2.50% in the case of LIBOR advances and from 1.00% to 1.50% in the case of prime rate advances. The revolving line of credit contains an unused facility fee in an amount between 0.15% and 0.25% of the average unused portion of the revolving line of credit, which is payable quarterly. The agreement contains certain customary affirmative and negative covenants and requires us to maintain (i) an adjusted quick ratio of at least 1.35 to 1.00 and (ii) minimum adjusted EBITDA, in the amounts and for the periods set forth in the agreement. Any amounts borrowed under the credit facility are collateralized by substantially all of our assets. We were in compliance with all covenants as of December 31, 2020. As of December 31, 2020, we had no outstanding borrowings under this revolving line of credit, and we had outstanding letters of credit totaling \$11.2 million in connection with securing our

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leased office space. We are monitoring the LIBOR to SOFR transition, which may result in modification or amendment of our existing revolving line of credit.

9. Income Taxes

For the years ended December 31, 2020, 2019, and 2018, our loss before income taxes was comprised of the following (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Domestic	\$ (25,463)	\$ (32,091)	\$ (30,663)
Foreign	(7,131)	(17,803)	(18,549)
Total	<u>\$ (32,594)</u>	<u>\$ (49,894)</u>	<u>\$ (49,212)</u>

For the years ended December 31, 2020, 2019, and 2018, our income tax expense (benefit) was comprised of the following (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Current:			
Federal	\$ 11	\$ 3	\$ —
State	79	60	25
Foreign	977	1,091	432
Total current expense	<u>1,067</u>	<u>1,154</u>	<u>457</u>
Deferred:			
Federal	—	—	—
State	—	—	—
Foreign	(184)	(334)	(218)
Total deferred benefit	<u>(184)</u>	<u>(334)</u>	<u>(218)</u>
Total income tax expense	<u>\$ 883</u>	<u>\$ 820</u>	<u>\$ 239</u>

For the years ended December 31, 2020, 2019, and 2018, the provision for income taxes differs from the amount computed by applying the federal statutory income tax rates to our loss before the provision (benefit) for income taxes as follows:

	Year Ended December 31,		
	2020	2019	2018
U.S. federal statutory tax rate	21.0 %	21.0 %	21.0 %
State tax expense	18.2	7.1	7.2
Foreign rate differential	(3.6)	(5.1)	(5.1)
Nondeductible expenses	(0.6)	(0.7)	(0.7)
Equity compensation	46.2	12.0	9.5
Tax credits	12.0	6.5	3.9
Unrecognized tax benefits	(2.2)	(1.1)	(0.8)
Other	(1.1)	(0.8)	0.6
Remeasurement of deferred taxes	(1.7)	(1.6)	—
Change in valuation allowance	(90.9)	(38.9)	(36.0)
Total	<u>(2.7)%</u>	<u>(1.6)%</u>	<u>(0.4)%</u>

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The effective tax rate of (2.7)% in 2020 includes \$29.6 million of tax expense attributable to the change in the valuation allowance in the United States and Switzerland, partially offset by \$18.8 million of favorable excess tax benefits for equity compensation and research credits.

Deferred tax assets and liabilities reflect the net tax effects of temporary differences between the carrying amount of the assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. As of December 31, 2020 and 2019, significant components of our deferred tax assets and liabilities were as follows (in thousands):

	As of December 31,	
	2020	2019
Deferred tax assets:		
Net operating losses	\$ 59,417	\$ 34,875
Tax credits	11,922	8,648
Deferred revenue	824	1,291
Equity compensation	3,090	1,668
Lease liabilities	15,768	13,066
Accrued vacation	339	409
Bad debt	383	164
Other	1,234	260
Gross deferred tax assets	92,977	60,381
Less: Valuation allowance	(65,914)	(35,607)
Total deferred tax assets	27,063	24,774
Deferred tax liabilities:		
Prepaid expenses	(11,082)	(9,562)
Right-of-use assets	(8,270)	(6,488)
Unbilled receivables	(2,559)	(3,849)
Depreciation	(4,221)	(4,377)
Other	(512)	(42)
Total deferred tax liabilities	(26,644)	(24,318)
Net deferred tax asset	\$ 419	\$ 456

As of December 31, 2020 and 2019, we had \$183.9 million and \$99.3 million of gross net operating loss (“NOL”) carryforwards for U.S. federal tax purposes, respectively. U.S. federal NOL carryforwards in the amount of \$24.4 million, gross, generated prior to 2018 will expire, if unused, in 2037. Under the Tax Cuts and Jobs Act of 2017 (the “TCJA”), as modified by the Coronavirus Aid, Relief, and Economic Security Act (“the CARES Act”), federal NOL carryforwards generated in tax years beginning after December 31, 2017 may be carried forward indefinitely. As of December 31, 2020, we had \$159.5 million of gross NOL carryforwards generated after 2017 for U.S. federal tax purposes, which may be used to offset 80% of our taxable income annually.

Section 382 of the Internal Revenue Code limits the utilization of NOL carryforwards when ownership changes occur, as defined by that section. A number of states have similar state laws that limit utilization of state NOL carryforwards when ownership changes occur. We have performed an analysis of our Section 382 ownership changes and have determined all U.S. federal and state NOL carryforwards are available for use as of December 31, 2020.

As of December 31, 2020 and 2019, we had \$10.5 million and \$7.5 million, respectively, of U.S. federal tax credit carryforwards which will expire, if unused, between 2031 and 2040.

As of December 31, 2020 and 2019, we had U.S. gross state NOL carryforwards of \$177.2 million and \$100.9 million, respectively. We had tax effected state NOL carryforwards of \$11.2 million and \$6.5 million as of December 31, 2020 and 2019, respectively. The rules regarding carryforwards vary from state to state, and the ability to utilize NOLs varies based on

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timing and amount. The majority of state NOL carryforwards generated prior to 2018 will expire, if unused, in 2037. Due to the TCJA, certain state NOL carryforwards generated after 2017 have an indefinite carryforward period.

As of December 31, 2020 and 2019, we had foreign gross NOL carryforwards of \$78.6 million and \$62.8 million, respectively, primarily attributable to our subsidiary in Switzerland. Those NOL carryforwards will begin to expire, if unused, between 2021 to 2027.

The net change in the total valuation allowance during the year ended December 31, 2020 was \$30.3 million, primarily driven by the valuation allowance recorded against the United States and Switzerland deferred tax assets.

As of December 31, 2020, we continued to maintain a full valuation allowance against U.S. deferred tax assets based on our cumulative operating results as of December 31, 2020, three-year cumulative loss, and assessment of our expected future results of operations. We have evaluated all evidence, both positive and negative, in assessing the likelihood of realizability, and we determined the negative evidence outweighed the positive evidence.

As of December 31, 2020, we have a valuation allowance of \$9.2 million against foreign deferred tax assets, primarily for deferred tax assets at our subsidiary in Switzerland. Based on our cumulative operating results as of December 31, 2020 and assessment of our expected future results of operations, we determined it was not more likely than not that we would be able to realize the deferred tax assets prior to expiration.

We plan to distribute previously undistributed earnings of our foreign subsidiaries back to the United States in future years. Upon repatriation of those earnings, if any, we may be subject to taxes, including withholding taxes, net of any applicable foreign tax credits. Determination of the amount of unrecognized deferred U.S. income tax liability is not practicable.

As of December 31, 2020 and 2019, we had unrecognized tax benefits of \$2.3 million and \$1.6 million, respectively, of which none would affect our effective tax rate if recognized due to the valuation allowance. The following table summarizes the activity related to our unrecognized tax benefit from January 1, 2018 to December 31, 2020 (in thousands):

Balance as of December 31, 2017	\$	651
Additions for tax positions in current years		388
Additions for tax positions in prior years		—
Reductions due to lapse in statutes of limitations		—
Settlements		—
Balance as of December 31, 2018		1,039
Additions for tax positions in current years		536
Additions for tax positions in prior years		—
Reductions due to lapse in statutes of limitations		—
Settlements		—
Balance as of December 31, 2019		1,575
Additions for tax positions in current years		702
Additions for tax positions in prior years		—
Reductions due to lapse in statutes of limitations		—
Settlements		—
Balance as of December 31, 2020	\$	2,277

We recognize interest and penalties related to uncertain tax positions in income tax expense. During the years ended December 31, 2020 and 2019, we recognized nominal amounts in interest. We did not recognize any interest during the year ended December 31, 2018. The cumulative balance of interest and penalties as of December 31, 2020 and 2019 were not meaningful.

We anticipate total unrecognized tax benefits will not decrease over the next year.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. The tax years 2017 through 2020 remain open to examination by the major taxing jurisdictions to which we are subject. There are no open examinations that would have a meaningful impact to our consolidated financial statements.

The CARES Act also includes various other income and payroll tax measures outside of the carryforward provisions discussed previously. Pursuant to one of these measures, we have elected the option to defer the deposit and payment of our share of social security taxes that would otherwise be due between March 27, 2020 and December 31, 2020. Under the CARES Act, half of these deferred payments are due by the end of fiscal year 2021 while the other half are due by the end of fiscal year 2022.

10. Stock-Based Compensation

Equity Incentive Plans

In May 2017, our Board of Directors adopted, and our stockholders approved, the 2017 Equity Incentive Plan (the "2017 Plan"), which became effective as of the date of the final prospectus for our initial public offering. The 2017 Plan provides for the grant of incentive stock options to employees, and for the grant of nonstatutory stock options, restricted stock awards, RSUs, stock appreciation rights, performance-based stock awards, and other forms of equity compensation to employees, including officers, non-employee directors, and consultants. We initially reserved 6,421,442 shares of Class A common stock for issuance under the 2017 Plan, which included 421,442 shares that remained available for issuance under our 2007 Stock Option Plan (the "2007 Plan") at the time the 2017 Plan became effective. The number of shares reserved under the 2017 Plan increases for any shares subject to outstanding awards originally granted under the 2007 Plan that expire or are forfeited prior to exercise. As a result of the adoption of the 2017 Plan, no further grants may be made under the 2007 Plan. As of December 31, 2020, there were 7,165,409 shares of Class A common stock reserved for issuance under the 2017 Plan, of which 4,276,377 were available to be issued.

Stock Options

We estimate the fair value of stock options containing only a service condition using the Black-Scholes option pricing model, which requires the use of subjective assumptions, including the expected term of the option, the current price of the underlying stock, the expected stock price volatility, expected dividend yield, and the risk-free interest rate for the expected term of the option. The expected term represents the period of time the stock options are expected to be outstanding. Due to the lack of sufficient historical exercise data to provide a reasonable basis upon which to otherwise estimate the expected term of the stock options, we use the simplified method to estimate the expected term for our stock options. Under the simplified method, the expected term of an option is presumed to be the mid-point between the vesting date and the end of the contractual term. Expected volatility is based on historical volatilities for publicly traded stock of comparable companies over the estimated expected term of the stock options. We assume no dividend yield because dividends are not expected to be paid in the near future, which is consistent with our history of not paying dividends.

In May 2019, our Board of Directors granted a stock option to purchase 700,000 shares of our Class A common stock to our Chief Executive Officer (the "2019 CEO Grant") under the 2017 Plan with an exercise price of \$33.98 per share. The 2019 CEO Grant is eligible to vest based on the achievement of a stock price appreciation target of our Class A common stock. Specifically, the 2019 CEO Grant will vest when shares of our Class A common stock close at or above \$84.63 per share for a period equal to or greater than 90 consecutive calendar days or upon the occurrence of a change in control in which the value of our Class A common stock is equal to or greater than \$84.63 per share within five years of the grant date. The fair value of the 2019 CEO Grant was determined using a Monte Carlo simulation. The fair value of the award at the grant date was \$9.5 million and will be amortized over the derived service period of 2.6 years. Refer to Note 17 for further details on the status of this award.

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The following table summarizes the assumptions used to estimate the fair value of stock options granted during the years ended December 31, 2020, 2019, and 2018:

	Year Ended December 31,		
	2020	2019	2018
Risk-free interest rate	*	2.1%	*
Expected term (in years)	*	2.6	*
Expected volatility	*	55.0%	*
Expected dividend yield	*	—%	*

* Not applicable because no stock options were granted during the period.

The following table summarizes stock option activity for the years ended December 31, 2020, 2019, and 2018:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2017	7,010,887	\$ 6.36	6.6	\$ 176,122
Granted	—	—		
Exercised	(1,486,218)	2.10		41,606
Canceled	(503,601)	9.51		
Outstanding at December 31, 2018	5,021,068	7.30	6.4	97,440
Granted	700,000	33.98		
Exercised	(1,194,471)	4.11		44,081
Canceled	(67,986)	10.17		
Outstanding at December 31, 2019	4,458,611	12.30	5.8	115,501
Granted	—	—		
Exercised	(1,001,411)	6.39		81,181
Expired	(1,380)	11.82		
Canceled	(56,580)	11.33		
Outstanding at December 31, 2020	3,399,240	\$ 14.06	4.9	\$ 503,174
Exercisable at December 31, 2020	2,232,140	\$ 8.38	5.1	\$ 343,098

There were no stock options granted during the years ended December 31, 2020 and 2018. The weighted average grant date fair value of stock options granted during the year ended December 31, 2019 was \$13.57 per share. The total fair value of stock options that vested during the years ended December 31, 2020, 2019, and 2018 was \$2.8 million, \$2.0 million, and \$10.5 million, respectively. As of December 31, 2020, the total compensation cost related to unvested stock options not yet recognized was \$4.0 million, which will be recognized over a weighted average period of one year.

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Restricted Stock Units

The following table summarizes RSU activity for the years ended December 31, 2020, 2019, and 2018:

	Number of Shares	Weighted Average Grant Date Fair Value
Non-vested and outstanding at December 31, 2017	731,975	\$ 22.16
Granted	622,166	29.60
Vested	(143,390)	22.19
Canceled	(35,702)	23.97
Non-vested and outstanding at December 31, 2018	1,175,049	26.04
Granted	436,912	40.70
Vested	(521,460)	27.81
Canceled	(67,666)	26.38
Non-vested and outstanding at December 31, 2019	1,022,835	31.39
Granted	589,692	60.47
Vested	(270,609)	31.29
Canceled	(176,915)	32.01
Non-vested and outstanding at December 31, 2020	1,165,003	\$ 46.04

As of December 31, 2020, total unrecognized compensation cost related to unvested RSUs was approximately \$48.0 million, which will be recognized over a weighted average period of 2.3 years.

In November 2018, our co-founders were granted 255,930 RSUs under the 2017 Plan at a fair value of \$30.06 per share. The awards were approved by the Board of Directors. The value of these awards at the grant date was \$7.7 million and was amortized over the vesting periods. The RSUs vested during the year ended December 31, 2019.

The following table summarizes the components of our stock-based compensation expense by instrument type for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,		
	2020	2019	2018
RSUs	\$ 10,745	\$ 12,667	\$ 7,714
Stock options	4,164	3,408	7,947
Common stock awards to Board of Directors	370	368	393
Total stock-based compensation expense	\$ 15,279	\$ 16,443	\$ 16,054

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Stock-based compensation expense for RSUs, stock options, and issuances of common stock to directors is included in the following line items in the accompanying consolidated statements of operations for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Cost of revenue			
Subscriptions	\$ 943	\$ 647	\$ 514
Professional services	1,477	2,748	1,717
Operating expenses			
Sales and marketing	2,821	4,742	3,473
Research and development	2,718	3,480	2,416
General and administrative	7,320	4,826	7,934
Total stock-based compensation expense	<u>\$ 15,279</u>	<u>\$ 16,443</u>	<u>\$ 16,054</u>

11. Stockholders' Equity

As of December 31, 2020, we had authorized 500,000,000 shares of Class A common stock and 100,000,000 shares of Class B common stock, each with a par value of \$0.0001 per share, of which 38,971,324 shares of Class A common stock and 31,707,866 shares of Class B common stock were issued and outstanding. The rights of the holders of Class A common stock and Class B common stock are identical, except with respect to voting and conversion rights. The holders of Class A common stock are entitled to one vote per share, and the holders of Class B common stock are entitled to ten votes per share on all matters subject to stockholder vote. The holders of Class B common stock also have approval rights for certain corporate actions. Each share of Class B common stock may be converted into one share of Class A common stock at the option of its holder and will be automatically converted upon transfer thereof, subject to certain exceptions. In addition, upon the date on which the outstanding shares of Class B common stock represent less than 10% of the aggregate voting power of our capital stock, all outstanding shares of Class B common stock shall convert automatically into Class A common stock.

12. Basic and Diluted Loss per Common Share

The following table sets forth the computation of basic and diluted net loss per share for the years ended December 31, 2020, 2019, and 2018 (in thousands, except share and per share data):

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	Year Ended December 31,		
	2020	2019	2018
Numerator:			
Net loss	\$ (33,477)	\$ (50,714)	\$ (49,451)
Denominator:			
Weighted average common shares outstanding, basic and diluted	69,050,565	65,479,327	62,140,684
Net loss per share, basic and diluted	\$ (0.48)	\$ (0.77)	\$ (0.80)

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

	Year Ended December 31,		
	2020	2019	2018
Stock options	3,399,240	4,458,611	5,021,068
Non-vested restricted stock units	1,165,003	1,022,835	1,175,049

13. Commitments and Contingencies

Contractual Warranty and Indemnification Obligations

We provide limited product warranties. Historically, any payments made under these provisions have been immaterial. We also agree to standard indemnification provisions in the ordinary course of business. Pursuant to these provisions, we agree to indemnify, hold harmless, and reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally our customers, in connection with certain intellectual property infringement claims by any third party arising from the use of our products or services in accordance with the agreement. The term of our contractual indemnity provisions often survives termination or expiration of the applicable agreement. We carry insurance that covers certain third-party claims relating to our services and limits our exposure. We have never incurred costs to defend lawsuits or settle claims related to these indemnification provisions.

Letters of Credit

At December 31, 2020 and 2019, we had outstanding letters of credit totaling \$11.2 million and \$10.5 million, respectively, in connection with securing our leased office space. All letters of credit are secured by our borrowing arrangement as described in Note 8.

Legal

From time to time, we are subject to legal, regulatory, and other proceedings and claims that arise in the ordinary course of business. There are no issues or resolutions of any matters expected to have a material adverse impact on our consolidated financial statements.

Other Commitments

We also have entered into a non-cancellable agreement for the use of technology that is integral in the development of our software and pay annual royalty fees of \$0.3 million.

14. Segment and Geographic Information

The following table summarizes revenue by geography for the years ended December 31, 2020, 2019, and 2018 (in thousands):

	Year Ended December 31,		
	2020	2019	2018
Domestic	\$ 201,483	\$ 176,187	\$ 161,716
International	103,090	84,165	65,027
Total	<u>\$ 304,573</u>	<u>\$ 260,352</u>	<u>\$ 226,743</u>

With respect to geographic information, revenue is attributed to respective geographies based on the contracting address of the customer. Revenues from customers attributed to the United Kingdom were 12.5% and 12.2% of our total revenue for the years ended December 31, 2020 and 2019, respectively. There were no individual foreign countries from which more than 10% of our total revenue was attributable for the year ended December 31, 2018. Substantially all of our long-lived assets were held in the United States as of December 31, 2020 and December 31, 2019.

15. Retirement Plans

We have a defined contribution 401(k) retirement and savings plan (the “401(k) Plan”) to provide retirement benefits for all eligible employees. All employees over the age of 21 on their first day of the month immediately following the month of hiring are eligible to participate in the 401(k) Plan. The Plan excludes United States expatriate employees, employees who are residents of Puerto Rico, and employees covered by another country’s pension retirement plan who are receiving employer contributions in that plan. The 401(k) Plan allows eligible employees to make salary-deferred contributions up to 75% of their pre-tax annual compensation, as defined and subject to certain Internal Revenue Service limitations. Employer contributions are made semi-monthly and calculated as 100% of the employee’s contribution for each pay period up to a maximum of 4% of the employee’s eligible gross compensation for the pay period. Employer contributions vest at 25% per year over four years, beginning with the completion of the first year of service. For the years ended December 31, 2020, 2019, and 2018, we incurred \$6.8 million, \$5.5 million, and \$4.7 million, respectively, in contribution expense related to employer matching contributions.

We are obligated to make plan contributions for the employees of certain of our wholly-owned foreign subsidiaries. For the years ended December 31, 2020, 2019, and 2018, we incurred \$1.7 million, \$1.5 million, and \$1.3 million, respectively, in contribution expense related to our foreign subsidiaries.

16. Investments and Fair Value Measurements

Fair Value Measurements

We use a three-tier fair value hierarchy to classify and disclose all assets and liabilities measured at fair value on a recurring basis, as well as assets and liabilities measured at fair value on a non-recurring basis, in periods subsequent to their initial measurement. The hierarchy requires us to use observable inputs when available and to minimize the use of unobservable inputs when determining fair value. The three tiers are defined as follows:

- **Level 1.** Observable inputs based on unadjusted quoted prices in active markets for identical assets or liabilities;
- **Level 2.** Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and
- **Level 3.** Unobservable inputs for which there is little or no market data, which require us to develop our own assumptions.

The asset or liability’s fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques maximize the use of relevant observable inputs and

APIAN CORPORATION AND SUBSIDIARIES
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minimize the use of unobservable inputs. There were no instruments measured at fair value on a recurring basis using significant unobservable inputs during the years ended December 31, 2020 and 2019.

The valuation techniques that may be used to measure fair value are as follows:

- Market approach - Uses prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities;
- Income approach - Uses valuation techniques to convert future amounts to a single present amount based on current market expectations about those future amounts;
- Cost approach - Based on the amount that currently would be required to replace the service capacity of an asset (i.e., replacement cost).

The carrying amounts of our cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses approximate fair value as of December 31, 2020 and December 31, 2019 because of the relatively short duration of these instruments.

Investments

Our investment portfolio consists largely of debt investments classified as available-for-sale. Changes in the fair value of available-for-sale securities, excluding other-than-temporary impairments, are recorded in other comprehensive income (loss). The components of our investments as of December 31, 2020 are as follows (in thousands):

	Year Ended December 31, 2020						
	Fair Value Measurement				Balance Sheet Classification		
	Fair Value Level	Cost Basis	Unrealized Gains / (Losses)	Market Value	Cash and Cash Equivalents	Short-term Investments	Long-term Investments
Money market fund	Level 1	\$ 27,150	\$ —	\$ 27,150	\$ 27,150	\$ —	\$ —
U.S. Treasury bonds	Level 1	24,445	(3)	24,442	—	16,273	8,169
Commercial paper	Level 2	76,905	—	76,905	16,493	60,412	—
Corporate bonds	Level 2	34,738	(11)	34,727	—	27,542	7,185
Asset-backed securities	Level 2	26,373	(8)	26,365	—	5,599	20,766
Total investments		<u>\$ 189,611</u>	<u>\$ (22)</u>	<u>\$ 189,589</u>	<u>\$ 43,643</u>	<u>\$ 109,826</u>	<u>\$ 36,120</u>

There were no Level 3 assets held at any point during the year ended December 31, 2020. Additionally, there were no transfers between Levels 1 and 2 during the year ended December 31, 2020.

The amortized cost basis and fair value of debt securities at December 31, 2020, by contractual maturity, are as follows (in thousands):

	As of December 31, 2020	
	Cost Basis	Fair Value
Due in one year or less	\$ 153,483	\$ 153,469
Due after one year through five years	36,128	36,120
Total investments	<u>\$ 189,611</u>	<u>\$ 189,589</u>

Actual maturities may differ from the contractual maturities in the table above because borrowers have the right to call or prepay certain obligations.

17. Subsequent Events

Effective February 3, 2021, the 2019 CEO Grant as discussed in Note 10 has satisfied all of the conditions required to be considered fully vested. As a result, we expect to accelerate the recognition of approximately \$3.3 million in stock-based compensation expense in the first quarter of 2021.

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

Not applicable.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

We maintain “disclosure controls and procedures,” as defined in Rule 13a-15(e) and Rule 15d-15(e) under the Exchange Act that are designed to ensure information required to be disclosed by a company in the reports it files or submits under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the SEC’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure information required to be disclosed by a company in the reports it files or submits under the Exchange Act is accumulated and communicated to its management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2020. Based on the evaluation of our disclosure controls and procedures as of December 31, 2020, our Chief Executive Officer and Chief Financial Officer concluded, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15(d)-15(f) of the Exchange Act. Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2020 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control - Integrated Framework (2013). Based on this assessment, management concluded that, as of December 31, 2020, our internal control over financial reporting was effective.

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

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the quarter ended December 31, 2020 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, believes our disclosure controls and procedures and internal control over financial reporting are designed to provide reasonable assurance of achieving their objectives and are effective at the reasonable assurance level. However, our management does not expect our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance the objectives of the control system are met. Further, the design of a control system must reflect the fact there are resource constraints, and the benefits of controls must be considered relative to their costs. 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. These inherent limitations include the realities that judgments in decision making can be faulty and that breakdowns can occur because of a simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. 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 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 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.

Part III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item is incorporated by reference to our Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the fiscal year ended December 31, 2020.

We have adopted a Code of Conduct, applicable to all of our employees, executive officers, and directors. The Code of Conduct is available on our website at www.appian.com. We expect any amendments to the Code of Conduct or any waivers of its requirement will be disclosed on our website (www.appian.com) as required by applicable law or the listing standards of the Nasdaq Stock Market. The information contained on, or that can be accessed through, our website is not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our website are intended to be inactive textual references only.

Item 11. Executive Compensation.

The information required by this item is incorporated by reference to our Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2020.

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

The information required by this item is incorporated by reference to our Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2020.

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

The information required by this item is incorporated by reference to our Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2020.

Item 14. Principal Accounting Fees and Services.

The information required by this item is incorporated by reference to our Proxy Statement for our 2021 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of the year ended December 31, 2020.

Part IV

Item 15. Exhibits, Financial Statement Schedules.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

(1) Consolidated Financial Statements and Report of Independent Registered Public Accounting Firm are shown in the Index to Financial Statements included in Part II, Item 8 of this Annual Report on Form 10-K.

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

(3) Exhibits are incorporated herein by reference or are filed with this Annual Report on Form 10-K as indicated below.

(b) Exhibits

Exhibit No.	Description	Reference
3.1	Amended and Restated Certificate of Incorporation of Appian Corporation.	Previously filed as Exhibit 3.2 to Amendment No. 3 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on May 12, 2017, and incorporated herein by reference.
3.2	Amended and Restated Bylaws of Appian Corporation.	Previously filed as Exhibit 3.4 to Amendment No. 2 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on May 10, 2017, and incorporated herein by reference.
4.1	Form of Class A common stock certificate of Appian Corporation.	Previously filed as Exhibit 4.1 to Amendment No. 3 to the Registrant's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on May 12, 2017, and incorporated herein by reference.
4.2	Amended and Restated Investors' Rights Agreement by and among Appian Corporation and certain of its stockholders, dated February 21, 2014.	Previously filed as Exhibit 4.2 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on April 27, 2017, and incorporated herein by reference.
4.3	Description of Securities.	Previously filed as Exhibit 4.3 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 20, 2020, and incorporated herein by reference.
10.1	2007 Stock Option Plan and Form of Option Agreement and Exercise Notice thereunder, as amended to date. [†]	Previously filed as Exhibit 10.1 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on April 27, 2017, and incorporated herein by reference.
10.2	2017 Equity Incentive Plan and Forms of Stock Option Agreement, Notice of Exercise and Stock Option Grant Notice thereunder. [†]	Previously filed as Exhibit 10.2 to Amendment No. 2 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on May 10, 2017, and incorporated herein by reference.
10.3	Non-Employee Director Compensation Plan, as amended December 16, 2020. [†]	Filed herewith.
10.4	Form of Indemnification Agreement by and between Appian Corporation and each of its directors and executive officers. [†]	Previously filed as Exhibit 10.4 to Amendment No. 2 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on May 10, 2017, and incorporated herein by reference.
10.5	Employment Agreement, dated as of September 7, 2012, by and between Appian Corporation and Matthew Calkins. [†]	Previously filed as Exhibit 10.5 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on April 27, 2017, and incorporated herein by reference.

10.6	Form of Amended and Restated Employment Agreement, dated as of April 27, 2017, by and between Appian Corporation and each of Mark Lynch and Chris Winters. [†]	Previously filed as Exhibit 10.7 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on April 27, 2017, and incorporated herein by reference.
10.7	Senior Executive Cash Incentive Bonus Plan. [†]	Previously filed as Exhibit 10.11 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 23, 2018, and incorporated herein by reference.
10.8	Forms of Restricted Stock Unit Grant Notices and Restricted Stock Unit Award Agreements under 2017 Equity Incentive Plan. [†]	Previously filed as Exhibit 10.12 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 23, 2018, and incorporated herein by reference.
10.9	Forms of Restricted Stock Award Grant Notice and Restricted Stock Award Agreement under 2017 Equity Incentive Plan. [†]	Previously filed as Exhibit 10.13 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 23, 2018, and incorporated herein by reference.
10.10	2017 Equity Incentive Plan French Qualifying Sub-Plan, with Forms of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement thereunder. [†]	Previously filed as Exhibit 10.14 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 23, 2018, and incorporated herein by reference.
10.11	2017 Equity Incentive Plan CSOP Sub-Plan for UK Eligible Employees, with Forms of CSOP Stock Option Grant Notice and CSOP Option Agreement thereunder. [†]	Previously filed as Exhibit 10.15 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 23, 2018, and incorporated herein by reference.
10.12	Stock Option Cancellation Agreement, dated December 7, 2018, between Appian Corporation and Matthew Calkins. [†]	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-38098), filed with the Securities and Exchange Commission on December 10, 2018, and incorporated herein by reference.
10.13	Deed of Lease, dated April 17, 2018, between Appian Corporation and Tamares 7950 Owner LLC.	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-38098), filed with the Securities and Exchange Commission on April 23, 2018, and incorporated herein by reference.
10.14	First Amendment to Deed of Lease, dated December 23, 2019, between Appian Corporation and Tamares 7950 Owner LLC.	Previously filed as Exhibit 10.15 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 20, 2020, and incorporated herein by reference.
10.15	Second Amendment to Deed of Lease, effective as of January 1, 2020, between Appian Corporation and Tamares 7950 Owner LLC.	Previously filed as Exhibit 10.16 to the Company's Annual Report on Form 10-K (File No. 001-38098), filed with the Securities and Exchange Commission on February 20, 2020, and incorporated herein by reference.
10.16	Software Enterprise OEM License Agreement, dated as of June 15, 2016, by and between Appian Corporation and Kx Systems, Inc. [†]	Previously filed as Exhibit 10.11 to the Company's Registration Statement on Form S-1 (File No. 333-217510), filed with the Securities and Exchange Commission on April 27, 2017, and incorporated herein by reference.
10.17	Addendum No. 1 to Software Enterprise OEM License Agreement, dated as of August 20, 2019, by and between Appian Corporation and Kx Systems, Inc.	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-38098) filed with the Securities and Exchange Commission on October 31, 2019, and incorporated herein by reference.
10.18	Third Amended and Restated Loan and Security Agreement, dated as of November 1, 2017, by and between Appian Corporation and Silicon Valley Bank. [†]	Previously filed as Exhibit 10.1 to the Company's Current Report on Form 8-K (File No. 001-38098), filed with the Securities and Exchange Commission on November 2, 2017, and incorporated herein by reference.
10.19	Employment Agreement, dated as of September 7, 2012, by and between Appian Corporation and Robert Kramer. [†]	Previously filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 001-38098) filed with the Securities and Exchange Commission on May 7, 2020, and incorporated herein by reference.
10.20	Employment Agreement, dated as of February 16, 2018, by and between Appian Corporation and David Mitchell. [†]	Previously filed as Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q (File No. 001-38098) filed with the Securities and Exchange Commission on May 7, 2020, and incorporated herein by reference.
10.21	Separation Agreement, dated as of May 1, 2020, by and between Appian Corporation and David Mitchell. [†]	Previously filed as Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q (File No. 001-38098) filed with the Securities and Exchange Commission on August 6, 2020, and incorporated herein by reference.

10.22	Employment Agreement, dated as of May 6, 2020, by and between Appian Corporation and Eric Cross. [†]	Previously filed as Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q (File No. 001-38098) filed with the Securities and Exchange Commission on August 6, 2020, and incorporated herein by reference.
21.1	Subsidiaries of Appian Corporation.	Filed herewith.
23.1	Consent of BDO USA, LLP, independent registered public accounting firm.	Filed herewith.
24.1	Power of Attorney. Reference is made to the signature page hereto.	Filed herewith.
31.1	Certification of Principal Executive Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith.
31.2	Certification of Principal Financial Officer Pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed herewith.
32.1	Certifications of Principal Executive Officer and Principal Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. [*]	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.	Attached.
101.SCH	Inline XBRL Taxonomy Extension Schema Document	Attached.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	Attached.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	Attached.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	Attached.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	Attached.
104	Cover page interactive data file (formatted as Inline XBRL and contained in Exhibit 101)	Attached.

+ Indicates management contract or compensatory plan.

† Confidential treatment has been granted as to certain portions of this exhibit. These portions have been omitted and filed separately with the Securities and Exchange Commission.

* This certification is deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended.

Item 16. Form 10-K Summary.

Not applicable.

SIGNATURE

Pursuant to the requirements 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.

APPIAN CORPORATION

Date: February 18, 2021

By: /s/ Matthew Calkins

Name: Matthew Calkins

Title: Chief Executive Officer and Chairman of the Board
(On behalf of the Registrant and as Principal Executive Officer)

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Matthew Calkins, Mark Lynch, and Christopher Winters, and each of them acting individually, as his or her true and lawful attorneys-in-fact and agents, with full power of each to act alone, with full powers of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, with full power of each to act alone, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully for all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or his, her or their substitutes, may lawfully do or cause to be done by virtue hereof.

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Matthew Calkins</u> Matthew Calkins	Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	February 18, 2021
<u>/s/ Mark Lynch</u> Mark Lynch	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	February 18, 2021
<u>/s/ Robert C. Kramer</u> Robert C. Kramer	General Manager and Director	February 18, 2021
<u>/s/ A.G.W. "Jack" Biddle, III</u> A.G.W. "Jack" Biddle, III	Director	February 18, 2021
<u>/s/ Prashanth "PV" Boccassam</u> Prashanth "PV" Boccassam	Director	February 18, 2021
<u>/s/ Michael G. Devine</u> Michael G. Devine	Director	February 18, 2021
<u>/s/ Barbara "Bobbie" Kilberg</u> Barbara "Bobbie" Kilberg	Director	February 18, 2021
<u>/s/ Michael J. Mulligan</u> Michael J. Mulligan	Director	February 18, 2021

APPIAN CORPORATION

**NON-EMPLOYEE DIRECTOR COMPENSATION POLICY
APPROVED BY THE BOARD OF DIRECTORS
AS AMENDED DECEMBER 16, 2020**

Each member of the Board of Directors (the “**Board**”) who is not also serving as an employee of Appian Corporation (the “**Company**”) or any of its subsidiaries (each such member, an “**Eligible Director**”) will receive the compensation described in this Non-Employee Director Compensation Policy (the “**Director Compensation Policy**”) for his or her Board service. The Director Compensation Policy may be amended at any time in the sole discretion of the Board or the Compensation Committee of the Board.

Annual Retainers

Each Eligible Director shall receive the annual retainers set forth below, as applicable with respect to that Eligible Director, which annual retainers shall be provided one-half in the form of cash and one-half in the form of fully-vested shares (“**Shares**”) of the Class A common stock of the Company (the “**Common Stock**”), with such grants made pursuant to the Company’s 2017 Equity Incentive Plan (the “**2017 Plan**”) and applicable form of equity award agreement most recently approved for use by the Board (or a duly authorized committee thereof). The number of Shares shall be determined by dividing the dollar amount due by the Fair Market Value (as defined in the 2017 Plan) of a Share on the date the annual retainer is otherwise payable, rounded down to the nearest whole Share. In no case shall any fractional Shares be issued. In lieu of any fractional Shares, the Eligible Director shall be paid cash equal to the value of any fractional Share. Shares issued in lieu of cash shall be issued on the same schedule as annual retainers paid in cash or, if the Shares cannot be delivered due to a Company blackout period, then the Shares shall be delivered on the first business day following the end of the blackout period.

Subject to the provisions above, the annual retainers set forth below shall be paid (or granted, as the case may be) in equal quarterly installments, payable in advance on the first day of each fiscal quarter in which the service is expected to occur. If an Eligible Director joins the Board or a committee of the Board (“**Committee**”) at a time other than effective as of the first day of a fiscal quarter, each annual retainer set forth below will be pro-rated based on days served in the applicable fiscal year, with the pro-rated amount paid (or granted) for the first fiscal quarter in which the Eligible Director provides the service, and regular full quarterly payments and grants thereafter.

Annual Board Service Retainer: \$250,000

Expenses

The Company will reimburse Eligible Directors for ordinary, necessary and reasonable out-of-pocket travel expenses to cover in-person attendance at and participation in Board and/or Committee meetings; *provided*, that Eligible Directors timely submit to the Company appropriate documentation substantiating such expenses in accordance with the Company’s travel and expense policy, as in effect from time to time.

Philosophy

The Director Compensation Policy is designed to attract and retain experienced, talented individuals to serve on the Board. The Board anticipates that the Board, or a duly authorized committee thereof, will generally review Eligible Director compensation on an annual basis. The Director Compensation Policy, as amended from time to time, may take into account the time commitment expected of Eligible Directors, best practices and market rates in director compensation, the economic position of the Company, broader economic conditions, historical compensation structure, the advice of the compensation consultant that the Compensation Committee or the Board may retain from time to time, and the potential dilutive effect of equity awards on our stockholders.

Under the Director Compensation Policy, Eligible Directors receive compensation in the form of retainers to recognize their level of responsibility as well as the necessary time commitment involved in serving in a leadership

role and/or on Committees. Eligible Directors also receive equity compensation because we believe that stock ownership provides an incentive to act in ways that maximize long-term stockholder value. Further, we believe that stock-based awards are essential to attracting and retaining talented Board members. When stock options are granted, these stock options will have an exercise price at least equal to the Fair Market Value of Common Stock on the date of grant, so that stock options provide a return only if the Fair Market Value appreciates over the period in which the stock option vests and remains exercisable. We believe that the vesting acceleration provided in the case of a Change in Control or other Corporate Transaction is consistent with market practices and is critical to attracting and retaining high quality directors.

Subsidiaries of Appian Corporation

Name of Subsidiary	Jurisdiction of Organization
Appian Europe Ltd.	England and Wales
Appian Software International LLC	Switzerland (Zug Canton)
Appian Netherlands BV	Netherlands
Appian Software Australia PTY Ltd	Australia
Appian France SARL	France
Appian Software Italy SRL	Italy
Appian Software Germany GmbH	Germany
Appian Singapore Pte. Ltd.	Singapore
Appian Spain, S.L.	Spain
Novayre Solutions, S.L.	Spain
Appian Sweden AB	Sweden

Consent of Independent Registered Public Accounting Firm

Appian Corporation
McLean, Virginia

We hereby consent to the incorporation by reference in the Registration Statements on Form S3 (No. 333-226941) and Form S-8 (No. 333-218342) of Appian Corporation of our reports dated February 18, 2021, relating to the consolidated financial statements, and the effectiveness of Appian Corporation's internal control over financial reporting, which appear in this Form 10-K.

/s/ BDO USA, LLP
McLean, Virginia

February 18, 2021

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Matthew Calkins, certify that:

1. I have reviewed this Annual Report on Form 10-K for the period ended December 31, 2020 of Appian Corporation (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 18, 2021

/s/ Matthew Calkins

Matthew Calkins
Chief Executive Officer
(principal executive officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Mark Lynch, certify that:

1. I have reviewed this Annual Report on Form 10-K for the period ended December 31, 2020 of Appian Corporation (the “registrant”);
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and
5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 18, 2021

/s/ Mark Lynch

Mark Lynch
Chief Financial Officer
(principal financial officer)

**CERTIFICATIONS OF
PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”) and Section 1350 of Chapter 63 of Title 18 of the United States Code (18 U.S.C. §1350), Matthew Calkins, Chief Executive Officer of Appian Corporation (the “Company”), and Mark Lynch, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company’s Annual Report on Form 10-K for the period ended December 31, 2020, to which this Certification is attached as Exhibit 32.1 (the “Periodic Report”), fully complies with the requirements of Section 13(a) or Section 15(d) of the Exchange Act; and
2. The information contained in the Periodic Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, the undersigned have set their hands hereto as of the 18th day of February, 2021.

/s/ Matthew Calkins

Matthew Calkins

Chief Executive Officer

(principal executive officer)

/s/ Mark Lynch

Mark Lynch

Chief Financial Officer

(principal financial officer)

* This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.