UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)

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

For the quarterly period ended June 30, 2022
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

APPIAN CORPORATION
(Exact Name of Registrant as Specified in its Charter)

Delaware	**54-1956084**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
7950 Jones Branch Drive McLean, VA	**22102**
(Address of principal executive offices)	**(Zip Code)**

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

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

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

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

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

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

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

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

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

As of August 1, 2022, there were 40,952,035 shares of the registrant's Class A common stock and 31,497,796 shares of the registrant's Class B common stock, each with a par value of $0.0001 per share, outstanding.

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PART I—FINANCIAL INFORMATION

Item 1. FINANCIAL STATEMENTS

APPIAN CORPORATION
CONSOLIDATED BALANCE SHEETS
(in thousands, except par value and share data)

	As of	
	June 30, 2022	**December 31, 2021**
	(unaudited)	
Assets		
Current assets		
Cash and cash equivalents	$ 76,185	$ 100,796
Short-term investments and marketable securities	59,748	55,179
Accounts receivable, net of allowance of $1,401 and $1,400, respectively	120,424	130,049
Deferred commissions, current	26,792	24,668
Prepaid expenses and other current assets	31,515	26,781
Restricted cash, current	728	791
Total current assets	315,392	338,264
Property and equipment, net of accumulated depreciation of $16,845 and $14,106, respectively	38,539	36,913
Long-term investments	2,022	12,044
Goodwill	25,597	27,795
Intangible assets, net of accumulated amortization of $1,899 and $1,260, respectively	5,840	7,144
Right-of-use assets for operating leases	27,113	27,897
Deferred commissions, net of current portion	48,671	49,017
Deferred tax assets	2,035	1,025
Restricted cash, net of current portion	2,185	2,373
Other assets	2,235	2,047
Total assets	$ 469,629	$ 504,519
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 6,783	$ 5,766
Accrued expenses	16,378	15,483
Accrued compensation and related benefits	29,330	35,126
Deferred revenue, current	151,266	150,169
Operating lease liabilities, current	7,988	8,110
Other current liabilities	581	1,067
Total current liabilities	212,326	215,721
Operating lease liabilities, net of current portion	47,210	48,784
Deferred revenue, net of current portion	1,786	2,430
Deferred tax liabilities	85	209
Other non-current liabilities	3,162	3,458
Total liabilities	264,569	270,602
Stockholders' equity		
Class A common stock—par value $0.0001; 500,000,000 shares authorized and 40,946,718 shares issued and outstanding as of June 30, 2022; 500,000,000 shares authorized and 39,964,298 shares issued and outstanding as of December 31, 2021	4	4
Class B common stock—par value $0.0001; 100,000,000 shares authorized and 31,497,796 shares issued and outstanding as of June 30, 2022; 100,000,000 shares authorized and 31,497,796 shares issued and outstanding as of December 31, 2021	3	3
Additional paid-in capital	538,249	497,128
Accumulated other comprehensive loss	(3,157)	(5,687)
Accumulated deficit	(330,039)	(257,531)
Total stockholders' equity	205,060	233,917
Total liabilities and stockholders' equity	$ 469,629	$ 504,519

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

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	**2021**	**2022**	**2021**
Revenue				
Subscriptions	$ 76,668	$ 56,946	$ 160,388	$ 120,712
Professional services	33,395	26,053	63,941	51,142
Total revenue	110,063	82,999	224,329	171,854
Cost of revenue				
Subscriptions	8,528	6,860	16,751	12,714
Professional services	24,765	18,975	47,563	36,650
Total cost of revenue	33,293	25,835	64,314	49,364
Gross profit	76,770	57,164	160,015	122,490
Operating expenses				
Sales and marketing	56,166	40,520	102,192	76,504
Research and development	33,842	23,862	63,778	44,552
General and administrative	29,509	17,358	60,658	36,500
Total operating expenses	119,517	81,740	226,628	157,556
Operating loss	(42,747)	(24,576)	(66,613)	(35,066)
Other non-operating expense (income)				
Other expense (income), net	6,153	(1,081)	6,940	1,812
Interest expense	60	80	134	161
Total other non-operating expense (income)	6,213	(1,001)	7,074	1,973
Loss before income taxes	(48,960)	(23,575)	(73,687)	(37,039)
Income tax expense (benefit)	394	250	(1,179)	373
Net loss	$ (49,354)	$ (23,825)	$ (72,508)	$ (37,412)
Net loss per share:				
Basic and diluted	$ (0.68)	$ (0.34)	$ (1.00)	$ (0.53)
Weighted average common shares outstanding:				
Basic and diluted	72,390	70,953	72,272	70,842

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

APPIAN CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(unaudited, in thousands)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Net loss	$ (49,354)	$ (23,825)	$ (72,508)	$ (37,412)
Comprehensive income (loss), net of income taxes				
Foreign currency translation adjustments	1,967	(1,474)	2,724	2,541
Unrealized (losses) gains on available-for-sale securities	(83)	23	(194)	31
Total other comprehensive loss, net of income taxes	$ (47,470)	$ (25,276)	$ (69,978)	$ (34,840)

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

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

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive (Loss) Income	Accumulated Deficit	Total Stockholders' Equity
	Shares	Amount				
Balance, December 31, 2021	71,462,094	$ 7	$ 497,128	$ (5,687)	$ (257,531)	$ 233,917
Net loss	—	—	—	—	(23,154)	(23,154)
Issuance of common stock to directors	2,395	—	—	—	—	—
Vesting of restricted stock units	47,038	—	—	—	—	—
Exercise of stock options	815,833	—	24,404	—	—	24,404
Stock-based compensation expense	—	—	6,943	—	—	6,943
Other comprehensive income	—	—	—	646	—	646
Balance, March 31, 2022	72,327,360	$ 7	$ 528,475	$ (5,041)	$ (280,685)	$ 242,756
Net loss	—	—	—	—	(49,354)	(49,354)
Issuance of common stock to directors	2,565	—	—	—	—	—
Vesting of restricted stock units	52,634	—	—	—	—	—
Exercise of stock options	61,955	—	626	—	—	626
Stock-based compensation expense	—	—	9,148	—	—	9,148
Other comprehensive income	—	—	—	1,884	—	1,884
Balance, June 30, 2022	72,444,514	$ 7	$ 538,249	$ (3,157)	$ (330,039)	$ 205,060
Balance, December 31, 2020	70,679,190	$ 7	$ 470,498	$ (5,010)	$ (168,890)	$ 296,605
Net loss	—	—	—	—	(13,587)	(13,587)
Issuance of common stock to directors	960	—	—	—	—	—
Vesting of restricted stock units	56,326	—	—	—	—	—
Exercise of stock options	88,269	—	625	—	—	625
Stock-based compensation expense	—	—	7,894	—	—	7,894
Other comprehensive income	—	—	—	4,023	—	4,023
Balance, March 31, 2021	70,824,745	$ 7	$ 479,017	$ (987)	$ (182,477)	$ 295,560
Net loss	—	—	—	—	(23,825)	(23,825)
Issuance of common stock to directors	1,175	—	—	—	—	—
Vesting of restricted stock units	43,024	—	—	—	—	—
Exercise of stock options	211,651	—	1,464	—	—	1,464
Stock-based compensation expense	—	—	4,598	—	—	4,598
Other comprehensive loss	—	—	—	(1,451)	—	(1,451)
Balance, June 30, 2021	71,080,595	$ 7	$ 485,079	$ (2,438)	$ (206,302)	$ 276,346

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

APPIAN CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(unaudited, in thousands)

	Six Months Ended June 30,	
	2022	2021
Cash flows from operating activities		
Net loss	$ (72,508)	$ (37,412)
Adjustments to reconcile net loss to net cash used by operating activities		
Stock-based compensation	16,091	12,492
Depreciation and amortization	3,573	2,561
Bad debt expense	(1)	32
Change in fair value of available-for-sale securities	—	(31)
Deferred income taxes	(1,302)	(144)
Changes in assets and liabilities		
Accounts receivable	12,132	16,720
Prepaid expenses and other assets	(5,334)	243
Deferred commissions	(1,777)	(7,340)
Accounts payable and accrued expenses	2,098	3,000
Accrued compensation and related benefits	(4,923)	2,808
Other current and non-current liabilities	(395)	(563)
Deferred revenue	2,990	(1,791)
Operating lease liabilities	(905)	52
Net cash used by operating activities	(50,261)	(9,373)
Cash flows from investing activities		
Purchases of investments	(31,214)	—
Proceeds from investments	36,473	27,604
Purchases of property and equipment	(4,685)	(1,027)
Net cash provided by investing activities	574	26,577
Cash flows from financing activities		
Proceeds from exercise of common stock options	25,030	2,089
Net cash provided by financing activities	25,030	2,089
Effect of foreign exchange rate changes on cash, cash equivalents, and restricted cash	(205)	(476)
Net (decrease) increase in cash, cash equivalents, and restricted cash	(24,862)	18,817
Cash, cash equivalents, and restricted cash at beginning of period	103,960	112,462
Cash, cash equivalents, and restricted cash at end of period	$ 79,098	$ 131,279
Supplemental disclosure of cash flow information		
Cash paid for interest	$ 145	$ 173
Cash paid for income taxes	$ 524	$ 806
Supplemental disclosure of non-cash investing and financing activities		
Accrued capital expenditures	$ 96	$ —

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

1. Organization and Description of Business

Appian Corporation (together with its subsidiaries, "Appian," the "Company," "we," or "our") is a unified platform for change. We accelerate customers' businesses by discovering, designing, and automating their most important processes. The Appian Low-Code Platform combines the key capabilities needed to get work done faster, Process Mining + Workflow + Automation, in a unified low-code platform. Appian is open, enterprise grade, and trusted by industry leaders.

We are headquartered in McLean, Virginia and operate both in the U.S. and internationally, including Australia, Canada, France, Germany, Italy, Japan, the Netherlands, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.

2. Accounting Policies

Basis of Presentation

The accompanying unaudited condensed 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 ("ASC") for interim financial reporting. In the opinion of management, the interim financial information includes all adjustments of a normal recurring nature necessary for a fair presentation of the results of operations, financial position, changes in stockholders' equity, and cash flows. The results of operations for the current period are not necessarily indicative of the results for the full year or the results for any future periods. These condensed consolidated financial statements should be read in conjunction with the consolidated financial statements and related footnotes included in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the Securities and Exchange Commission (the "SEC") on February 17, 2022.

Use of Estimates

The preparation of our condensed consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and judgments that affect the amounts reported in these condensed 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 condensed consolidated financial statements include, but are not limited to, revenue recognition, income taxes and the related valuation allowance, leases, costs to obtain a contract with a customer, the valuation of financial instruments, and stock-based compensation.

Principles of Consolidation

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

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, cash equivalents, restricted cash, accounts receivable, and our short- and long-term investments. Deposits held with banks may exceed the amount of insurance provided on such deposits; however, 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 18.2% of our revenue for each of the three and six months ended June 30, 2022, of which the top three U.S. federal government agencies generated 5.2% and 4.8% of our revenue for the three and six months ended June 30, 2022, respectively. Additionally, 35.0% and 34.2% of our revenue during the three and six months ended June 30, 2022, respectively, was generated from foreign customers. Revenue generated from government agencies represented 19.8% and 20.4% of our revenue for the three and six months ended June 30, 2021, respectively, of which the top three U.S. federal government agencies generated 6.5% of our revenue for each of the three and six months ended June 30, 2021. Additionally, 35.3% and 33.7% of our revenue during the three and six months ended June 30, 2021, respectively, was generated from foreign customers.

Cash, Cash Equivalents, and Restricted Cash

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. Restricted cash consists of cash designated to settle an escrow liability stemming from a holdback agreement enacted pursuant to our acquisition of Lana Labs GmbH (“Lana Labs”). 25% of the balance becomes due on October 31, 2022 while the remaining 75% of the balance becomes due on August 11, 2023.

The following table presents a reconciliation of cash, cash equivalents, and restricted cash as presented in the consolidated statements of cash flows (in thousands):

	As of			
	June 30, 2022	**December 31, 2021**	**June 30, 2021**	**December 31, 2020**
Cash and cash equivalents	$ 76,185	$ 100,796	$ 131,279	$ 112,462
Restricted cash, current	728	791	—	—
Restricted cash, net of current portion	2,185	2,373	—	—
Total cash, cash equivalents, and restricted cash	$ 79,098	$ 103,960	$ 131,279	$ 112,462

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. The allowance for doubtful accounts totaled $1.4 million as of June 30, 2022 and December 31, 2021.

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

We capitalize costs of obtaining a contract with a customer, which consists of sales commissions paid to our direct sales team, 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 team. 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 deferred commission is recorded to sales and marketing expense in our consolidated statements of operations. Commission expense was $8.7 million and $16.9 million for the three and six months ended June 30, 2022, respectively. Commission expense was $7.5 million and $14.3 million for the three and six months ended June 30, 2021, respectively.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. 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.

Investments and Fair Value of Financial Instruments

Refer to Note 15 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 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.

Recent Accounting Pronouncements

Adopted

We did not adopt any new accounting guidance in 2022 that had a material impact on our condensed consolidated financial statements or disclosures.

Not Yet Adopted

There is no pending accounting guidance that we expect to have a material impact on our condensed consolidated financial statements or disclosures.

3. Revenue

Revenue Recognition

We generate subscriptions revenue primarily through the sale of cloud 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 recorded during the three and six months ended June 30, 2022 and 2021 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Cloud subscriptions	$ 57,083	$ 42,486	$ 110,462	$ 81,539
Term license subscriptions	14,063	9,323	38,770	29,176
Maintenance and support	5,522	5,137	11,156	9,997
Total subscriptions	76,668	56,946	160,388	120,712
Professional services	33,395	26,053	63,941	51,142
Total revenue	$ 110,063	$ 82,999	$ 224,329	$ 171,854

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 cloud subscriptions, maintenance and support, and professional services are delivered over time.

Subscriptions Revenue

Subscriptions revenue is primarily related to (1) Cloud 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 or through 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.

Cloud Subscriptions

We generate cloud-based subscriptions 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 Revenue

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 services contract are 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 is the total amount of consideration we expect to receive in exchange for the service offerings in a contract and may include both fixed and variable components. 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 three and six months ended June 30, 2022 and 2021 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")

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. Cloud subscriptions - Given the highly variable selling price of our cloud subscriptions, we establish the SSP of our cloud 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 cloud 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 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 and training services - The SSP of consulting 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 June 30, 2022 and December 31, 2021, contract assets of $15.2 million and $14.0 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 six months ended June 30, 2022, we recognized $107.3 million of revenue that was included in the deferred revenue balance as of December 31, 2021.

Transaction Price Allocated to the Remaining Performance Obligations

As of June 30, 2022, we had an aggregate transaction price of $298.0 million allocated to unsatisfied performance obligations. We expect to recognize $192.8 million of this balance as revenue over the next 12 months with the remaining amount recognized thereafter.

4. Leases

As of June 30, 2022, our lease portfolio consists entirely of operating leases, most of which are for corporate offices. Our operating leases have remaining lease terms of roughly 1 year to 10 years, some of which include options to extend the leases for up to an additional 10 years.

Lease Costs

Expense for operating leases is recognized on a straight-line basis over the lease term as an operating 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 rather are expensed as incurred and recorded as variable lease expense.

The following table sets forth the components of lease expense for the three and six months ended June 30, 2022 and 2021 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Operating lease cost	$ 1,626	$ 1,695	$ 3,260	$ 3,325
Short-term lease cost	76	13	164	54
Variable lease cost	953	772	1,926	797
Total	$ 2,655	$ 2,480	$ 5,350	$ 4,176

Supplemental Lease Information

Supplemental balance sheet information related to operating leases as of June 30, 2022 and December 31, 2021 was as follows (in thousands, except for lease term and discount rate):

	As of	
	June 30, 2022	December 31, 2021
Right-of-use assets for operating leases	$ 27,113	$ 27,897
Operating lease liabilities, current	$ 7,988	$ 8,110
Operating lease liabilities, net of current portion	47,210	48,784
Total operating lease liabilities	$ 55,198	$ 56,894
Weighted average remaining lease term (in years)	9.1	9.5
Weighted average discount rate	9.5 %	9.5 %

Supplemental cash flow and expense information related to operating leases for the six months ended June 30, 2022 and 2021 was as follows (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Operating cash outflows for operating leases	$ 2,074	$ 1,754	$ 4,159	$ 3,503
Amortization of operating lease ROU assets	325	353	631	677
Interest expense on operating lease liabilities	1,305	468	2,626	870

A summary of our future minimum lease commitments under non-cancellable leases as of June 30, 2022 is as follows (in thousands):

	Operating Leases
2022 (excluding the six months ended June 30, 2022)	$ 4,243
2023	8,273
2024	8,584
2025	9,283
2026	9,357
Thereafter	48,775
Total lease payments	88,515
Less: imputed interest	(33,317)
Total	$ 55,198

5. Business Combinations

In August 2021, we acquired 100% of the outstanding common stock of Lana Labs, a developer of process mining software, for approximately $30.7 million, net of cash acquired and debt. The acquisition was made due to the attractive nature of the product offerings of Lana Labs 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 is preliminary pending the finalization of deferred income taxes. As of the acquisition date, the purchase price was assigned to the acquired assets and assumed liabilities as follows (in thousands):

Cash acquired	$ 256
Other current assets	106
Property and equipment	59
Developed technology	5,974
Customer relationships	750
Goodwill	24,521
Other non-current assets	27
Total assets acquired	31,693
Current liabilities	638
Non-current liabilities	38
Total liabilities assumed	676
Net assets acquired	$ 31,017

There were no changes to our reportable segments as a result of the acquisition, and acquisition costs incurred in relation to the transaction were immaterial. We do not expect the purchase price allocated to goodwill and intangible assets to be deductible for tax purposes.

Since the acquisition date, measurement period adjustments have included a $0.8 million adjustment to developed technology and goodwill related to an update to the discount rate utilized in our valuation of intangibles, a $0.3 million increase in deferred revenue stemming from our early adoption of new accounting guidance surrounding deferred revenue recognized pursuant to a business combination, a $0.1 million deferred tax adjustment, and an immaterial adjustment to working capital. No additional measurement period adjustments were recognized for the six months ended June 30, 2022.

6. Goodwill and Intangible Assets

Goodwill was comprised of the following as of June 30, 2022 and December 31, 2021 (in thousands):

	Carrying Amount
Balance as of December 31, 2020	$ 4,862
Goodwill acquired	24,521
Foreign currency translation adjustments	(1,588)
Balance as of December 31, 2021	27,795
Goodwill acquired	—
Foreign currency translation adjustments	(2,198)
Balance as of June 30, 2022	$ 25,597

Intangible assets, net consisted of the following as of June 30, 2022 and December 31, 2021 (in thousands):

	As of	
	June 30, 2022	December 31, 2021
Developed technology	$ 6,696	$ 7,271
Customer relationships - Non-Robotic Process Automation (“RPA”)	803	872
Customer relationships - RPA	240	261
Intangible assets, gross	7,739	8,404
Less: accumulated amortization	(1,899)	(1,260)
Intangible assets, net	$ 5,840	$ 7,144

Intangible amortization expense was $0.4 million and $0.8 million for the three and six months ended June 30, 2022, respectively. Intangible amortization expense was $0.1 million and $0.2 million for the three and six months ended June 30, 2021, respectively. As of June 30, 2022, the weighted average remaining amortization periods for developed technology, non-RPA customer relationships, and RPA customer relationships were approximately 3.9 years, 8.8 years, and 7.5 years, respectively.

The projected annual amortization expense related to amortizable intangible assets as of June 30, 2022 is as follows (in thousands):

	Projected Amortization
2022 (excluding the six months ended June 30, 2022)	$ 739
2023	1,429
2024	1,429
2025	1,137
2026	731
Thereafter	375
Total projected amortization expense	$ 5,840

7. Property and Equipment, net

Property and equipment, net consisted of the following as of June 30, 2022 and December 31, 2021 (in thousands):

	June 30, 2022	December 31, 2021
Leasehold improvements	$ 42,892	$ 41,005
Office furniture and fixtures	3,224	2,536
Computer hardware	7,675	6,001
Computer software	1,353	1,353
Equipment	240	124
Property and equipment, gross	55,384	51,019
Less: accumulated depreciation	(16,845)	(14,106)
Property and equipment, net	$ 38,539	$ 36,913

Depreciation expense totaled $1.4 million and $2.8 million for the three and six months ended June 30, 2022, respectively. Depreciation expense totaled $1.2 million and $2.4 million for the three and six months ended June 30, 2021, respectively. We had no disposals or retirements and recorded no gains or losses on disposal during each of the three and six months ended June 30, 2022 and 2021.

8. Accrued Expenses

Accrued expenses consisted of the following as of June 30, 2022 and December 31, 2021 (in thousands):

	June 30, 2022	December 31, 2021
Hosting costs	$ 3,078	$ 1,995
Legal costs	1,264	5,511
Marketing and tradeshow expenses	2,143	1,167
Third party license fees	1,164	1,066
Contract labor costs	2,043	891
Reimbursable employee expenses	4,104	870
Taxes payable	307	550
Audit and tax expenses	404	439
Capital expenditures	96	379
Other accrued expenses	1,775	2,615
Total	$ 16,378	$ 15,483

9. Debt

Line of Credit

We have a $20.0 million revolving line of credit with a lender that matures in November 2025. In January 2022, we executed the second loan modification agreement to increase the aggregate amount of funds our foreign subsidiaries are allowed to maintain outside of the United States. We were in compliance with all covenants as of June 30, 2022. As of June 30, 2022, we had no outstanding borrowings under this revolving line of credit, and we had outstanding letters of credit totaling $11.0 million in connection with securing our leased office space.

10. Income Taxes

The provision for income taxes is based upon the estimated annual effective tax rates for the year applied to the current period income before tax plus the tax effect of any significant or unusual items, discrete events, or changes in tax law. Our operating subsidiaries are exposed to statutory effective tax rates ranging from zero to approximately 35%. Fluctuations in the distribution of pre-tax income among our operating subsidiaries can lead to fluctuations of the effective tax rate in the condensed consolidated financial statements. For the three and six months ended June 30, 2022, the actual effective tax rates were (0.8)% and 1.6%, respectively. For the three and six months ended June 30, 2021, the actual effective tax rates were (1.1)% and (1.0)%, respectively. The-year-to date tax benefit for the six months ended June 30, 2022 was primarily driven by a discrete benefit of $1.1 million related to the release of a valuation allowance for Lana Labs as a result of post-integration tax planning and the merger of German subsidiaries.

As of June 30, 2022, our net unrecognized tax benefits totaled $3.1 million, which if recognized would result in no net effect on the effective tax rate due to a valuation allowance. The amount of reasonably possible unrecognized tax benefits that could decrease over the next 12 months due to the expiration of certain statutes of limitations or settlements of tax audits is not material to our condensed consolidated financial statements.

We file income tax returns in the U.S. federal jurisdiction and in various state and foreign jurisdictions. Due to our net operating loss carryforward, the tax years 2016 through 2021 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 condensed consolidated financial statements.

11. 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 June 30, 2022, there were 7,195,029 shares of Class A common stock reserved for issuance under the 2017 Plan, of which 2,964,435 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 June 2022, 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 “2022 CEO Grant”) under the 2017 Plan with an exercise price of $50.63 per share. The 2022 CEO Grant is eligible to vest based on the achievement of various stock price appreciation targets of our Class A common stock. Specifically, the 2022 CEO Grant vests in four installments of 25% each if the average closing price per share for a 365 day calendar period equals each of $175, $200, $225, and $250, respectively (the “Vesting Price Threshold”), prior to June 7, 2030. The option also vests if the Company engages in a Corporate Transaction, as defined in the Plan, in which the Company’s Class A common stock is valued at or above the Vesting Price Threshold. The fair value of the 2022 CEO Grant was determined using a Monte Carlo simulation. The fair value of the award at the grant date was $18.8 million and is being amortized over derived service periods ranging from 3.4 to 4.1 years.

The only stock option awarded during the three and six months ended June 30, 2022 and 2021 was the 2022 CEO Grant. The following table summarizes the assumptions used to estimate the fair value of the 2022 CEO stock option grant:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Risk-free interest rate	3.01%	*	3.01%	*
Expected term (in years) **	4.1	*	**	*
Expected volatility	70%	*	70%	*
Expected dividend yield	—%	*	—%	*

* Not applicable because no stock options were granted during the period.
** Each Vesting Price Threshold for the 2022 CEO grant has a unique expected term ranging from 3.4 to 4.1 years.

The following table summarizes stock option activity for the six months ended June 30, 2022:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (Years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2021	2,953,356	$ 15.16	4.0	$ 147,812
Granted	700,000	50.63		
Exercised	(877,788)	28.52		30,644
Expired	(6,780)	3.63		
Forfeited	(10,180)	12.18		
Outstanding at June 30, 2022	2,758,608	$ 19.95	5.5	$ 77,903
Exercisable at June 30, 2022	2,057,108	$ 9.51	4.1	$ 77,863

The total fair value of stock options that vested during the six months ended June 30, 2022 and 2021 was $0.8 million and $10.5 million, respectively. As of June 30, 2022, the total compensation cost related to unvested stock options not yet recognized, which relates exclusively to the 2022 CEO Grant, was $18.6 million and will be recognized over a weighted average period of 3.7 years.

Restricted Stock Units

The following table summarizes RSU activity for the six months ended June 30, 2022:

	Number of Shares	Weighted Average Grant Date Fair Value
Non-vested and outstanding at December 31, 2021	1,209,529	$ 70.99
Granted	394,218	53.66
Vested	(99,672)	68.03
Forfeited	(125,791)	76.23
Non-vested and outstanding at June 30, 2022	1,378,284	65.78

As of June 30, 2022, total unrecognized compensation cost related to unvested RSUs was approximately $72.6 million, which will be recognized over a weighted average period of 1.8 years.

Stock-Based Compensation Expense

The following table summarizes the components of our stock-based compensation expense by instrument type for the three and six months ended June 30, 2022 and 2021 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
RSUs	$ 8,747	$ 4,403	$ 15,533	$ 8,408
Stock options	244	40	245	3,773
Common stock awards to the Board of Directors	157	155	313	311
Total stock-based compensation expense	$ 9,148	$ 4,598	$ 16,091	$ 12,492

Stock-based compensation expense for RSUs, stock options, and issuances of common stock to the Board of Directors is included in the following line items in the accompanying consolidated statements of operations for the three and six months ended June 30, 2022 and 2021 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Cost of revenue				
Subscriptions	$ 249	$ 295	$ 428	$ 592
Professional services	1,330	865	2,387	1,506
Operating expenses				
Sales and marketing	2,266	1,197	4,054	2,305
Research and development	3,063	1,069	5,377	2,084
General and administrative	2,240	1,172	3,845	6,005
Total stock-based compensation expense	$ 9,148	$ 4,598	$ 16,091	$ 12,492

12. Basic and Diluted Loss per Share

Basic net loss per share is computed by dividing the net loss by the weighted average number of common shares outstanding during the reporting period. Diluted loss per is computed similar to basic, except the weighted average number of common shares outstanding are increased to include additional outstanding shares from the assumed exercise of stock options and vesting of RSUs, if dilutive. The dilutive effect, if any, of convertible shares calculated using the treasury stock method. As we reported net losses for all periods presented, there are no outstanding dilutive securities as the outstanding shares would be anti-dilutive if they were to be assumed as vested or exercised.

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

	Three and Six Months Ended June 30,	
	2022	2021
Stock options	2,758,608	3,089,260
Non-vested restricted stock units	1,378,284	1,126,696

13. Commitments and Contingencies

Minimum Purchase Commitments

In July 2021, we executed a non-cancellable cloud hosting arrangement with Amazon Web Services (“AWS”) that contains provisions for minimum purchase commitments. Specifically, purchase commitments under the agreement total $131.0 million over five years, including $22.0 million in the first year, $25.0 million in the second year, and $28.0 million in each of the third, fourth, and fifth years. The timing of payments under the agreement may vary, and the total amount of payments may exceed the minimum depending on the volume of services utilized. Spending under this agreement for the three and six months ended June 30, 2022 totaled $8.1 million and $15.9 million, respectively.

Exclusive of the AWS contract, we have other non-cancellable agreements for subscription software products that contain provisions stipulating minimum purchase commitments. However, the annual purchase commitments under these contracts are, individually and in the aggregate, immaterial to our condensed consolidated financial statements.

Pegasystems Litigation

On May 29, 2020, we filed a civil complaint against Pegasystems, Inc. ("Pegasystems") and Youyong Zou, a Virginia resident, in the Circuit Court for Fairfax County, Virginia. *Appian Corp v. Pegasystems Inc. & Youyong Zou, No. 2020-07216 (Fairfax Cty. Ct.)*. On May 10, 2022, we announced the jury awarded us $2.03 billion in damages for misappropriation of our trade secrets and $1 in damages for violating the Virginia Computer Crimes Act. Pegasystems has filed post-trial motions in which it seeks relief in the form of reducing the damages award or setting aside the jury's verdict and either granting a new trial or entering judgment in Pegasystems' favor. One of these motions was denied on July 28, 2022. We believe Pegasystems' motions are without merit. We simultaneously filed a motion for attorneys' fees and costs, as well as post-judgment interest on any award of attorneys' fees and costs, based on the jury's finding that our trade secrets were willfully and maliciously misappropriated. All legal expenses related to the litigation have been expensed as incurred, within "General and administrative" expense within our consolidated statement of operations.

The jury's verdict and the court's entry of judgment is subject to appeal by Pegasystems. Pegasystems is not required to pay us the amount awarded by the jury until all appeals are exhausted and the judgment is final. We cannot predict the outcome of any appeals or the time it will take to resolve them. Like any judgment, there is no guarantee we will be able to collect all or any portion of the judgment. We will not record the award in our condensed consolidated financial statements until we collect on the judgment.

Other Legal Matters

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 condensed consolidated financial statements.

14. Segment and Geographic Information

We operate one operating and reportable segment, representing our consolidated business that helps organizations build applications and workflows rapidly with our low-code platform to maximize their resources and improve business results. Our reportable segment determination is based on our management and internal reporting structure, the nature of the subscriptions and services we offer, and the financial information that is evaluated regularly by our chief operation decision maker.

The following table summarizes revenue by geography for the three and six months ended June 30, 2022 and 2021 (in thousands):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Domestic	$ 71,567	$ 53,704	$ 147,606	$ 113,986
International	38,496	29,295	76,723	57,868
Total	$ 110,063	$ 82,999	$ 224,329	$ 171,854

With respect to geographic information, revenue is attributed to respective geographies based on the contracting address of the customer. There were no individual foreign countries from which more than 10% of our total revenue was attributable for the three and six months ended June 30, 2022 or 2021. Substantially all of our long-lived assets were held in the United States as of June 30, 2022 and December 31, 2021.

15. Investments and Fair Value Measurements

Fair Value Measurements

U.S. GAAP establishes 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 estimates and assumptions, which reflect those that a market participant would use.

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 minimize the use of unobservable inputs. There were no instruments measured at fair value on a recurring basis using significant unobservable inputs as of June 30, 2022 and December 31, 2021.

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 June 30, 2022 and December 31, 2021 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 June 30, 2022 are as follows (in thousands):

	As of June 30, 2022						
	Fair Value Measurement				Balance Sheet Classification		
	Fair Value Level	Cost Basis	Unrealized Gains (Losses)	Market Value	Cash and Cash Equivalents	Short-term Investments and Marketable Securities	Long-term Investments
Money market fund	Level 1	$ 9,438	$ —	$ 9,438	$ 9,438	$ —	$ —
U.S. Treasuries	Level 1	17,985	(82)	17,903	—	17,903	—
Commercial paper	Level 2	23,110	—	23,110	—	23,110	—
Corporate bonds	Level 2	15,397	(130)	15,267	—	13,245	2,022
Asset-backed securities	Level 2	5,493	(3)	5,490	—	5,490	—
Total investments		$ 71,423	$ (215)	$ 71,208	$ 9,438	$ 59,748	$ 2,022

At December 31, 2021, our investments consisted of the following (in thousands):

	As of December 31, 2021						
	Fair Value Measurement				Balance Sheet Classification		
	Fair Value Level	Cost Basis	Unrealized Gains (Losses)	Market Value	Cash and Cash Equivalents	Short-term Investments and Marketable Securities	Long-term Investments
Money market fund	Level 1	$ 38,301	$ —	$ 38,301	$ 38,301	$ —	$ —
U.S. Treasury bonds	Level 1	8,171	—	8,171	—	8,171	—
Commercial paper	Level 2	23,312	—	23,312	—	23,312	—
Corporate bonds	Level 2	20,107	(14)	20,093	—	8,049	12,044
Asset-backed securities	Level 2	15,655	(8)	15,647	—	15,647	—
Total investments		$ 105,546	$ (22)	$ 105,524	$ 38,301	$ 55,179	$ 12,044

There were no Level 3 assets held at any point during the three and six months ended June 30, 2022 and 2021. Additionally, there were no transfers between Levels 1 and 2 during the three and six months ended June 30, 2022 and 2021.

The amortized cost basis and fair value of debt securities as of June 30, 2022, by contractual maturity, are as follows (in thousands):

	As of June 30, 2022	
	Cost Basis	Fair Value
Due in one year or less	$ 69,398	$ 69,186
Due after one year through five years	2,025	2,022
Total investments	$ 71,423	$ 71,208

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

Item 2. 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 (1) our condensed consolidated financial statements and related notes appearing elsewhere in this Quarterly Report on Form 10-Q and (2) the audited consolidated financial statements and the related notes and management's discussion and analysis of financial condition and results of operations for the year ended December 31, 2021 included in our Annual Report on Form 10-K, filed with the Securities and Exchange Commission, or SEC, on February 17, 2022.

This Quarterly Report on Form 10-Q contains "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. These statements are often identified by the use of words such as "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "project," "will," "would," or the negative or plural of these words or similar expressions or variations, including statements regarding our future financial and operating performance, anticipated expansion of the usage of partners to perform professional services, the increase of our subscriptions revenue as a percentage of total revenue, the fluctuation of gross margin on a quarterly basis, and our future capital requirements. Such forward-looking statements are subject to a number of risks, uncertainties, assumptions, and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those identified herein and those discussed in the section titled "Risk Factors," set forth in Part I, Item 1A of our Annual Report on Form 10-K filed with the SEC on February 17, 2022 and in our other filings with the SEC. You should not rely upon forward-looking statements as predictions of future events. 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 after the date of such statements.

Overview

Appian is a unified platform for change. We accelerate customers' businesses by discovering, designing, and automating their most important processes. The Appian Low-Code Platform combines the key capabilities needed to get work done faster, Process Mining + Workflow + Automation, in a unified low-code platform. Appian is open, enterprise grade, and trusted by industry leaders. 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 discover, design, and automate powerful, enterprise-grade workflows and custom applications through our intuitive, visual interface with little or no coding required. Our customers have used workflows and 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) cloud subscriptions bundled with maintenance and support and hosting services and (2) term license subscriptions bundled with maintenance and support. Our subscription contracts are priced 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 subscription 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.

We 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, Accenture, PwC, Infosys, Wipro, and Deloitte, for them to refer customers to us in order to purchase subscriptions and then our partners 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.

Our customers include financial services, government, life sciences, insurance, manufacturing, energy, healthcare, telecommunications, and transportation organizations. Generally, our sales team targets its efforts to organizations with over 2,000 employees and $2 billion in annual revenue. Revenue from government agencies represented 18.2% of our total revenue in each of the three and six months ended June 30, 2022. This compares to revenue from government agencies of 19.8% and 20.4% of our total revenue in the three and six months ended June 30, 2021, respectively. No single end-customer accounted for more than 10% of our total revenue in the three and six months ended June 30, 2022 or 2021.

We offer our platform globally. Our platform supports multiple languages to facilitate collaboration and address challenges in multinational organizations. In the three and six months ended June 30, 2022, 35.0% and 34.2%, respectively, of our total revenue was generated from customers outside of the United States as compared to 35.3% and 33.7% in the three and six months ended June 30, 2021, respectively. As of June 30, 2022, we operated in 13 countries. We believe we have a significant opportunity to continue to grow our international footprint, and we are investing in new geographies, including through investment in direct and indirect sales channels, professional services, and customer support and implementation partners.

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 our platform as well as the price and number of subscriptions of our platform that a customer purchases. We incur significant customer acquisition costs, including expenses associated with hiring new sales representatives, who can take anywhere from six months to a 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.

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 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 as of the specified measurement date. Furthermore, we define a new customer as an entity that has entered into its first active subscription or maintenance and support contract within one calendar year of the specified measurement date while existing customers are defined as entities that have maintained an active subscription or maintenance and support contract for at least one calendar year from the specified measurement date. Legacy customers from entities acquired in business combinations are not counted as new customers until they enter into a new active subscription or maintenance and support contract with us subsequent to the completion of the business combination. Additionally, 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 team 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. 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 team 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 or through 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 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 strategic partners and 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 continue to 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 originate. As the usage of partners expands, we expect the proportion of our total revenue from subscriptions to increase over time relative to professional services. For the six months ended June 30, 2022 and June 30, 2021 71.5% and 70.2% of our revenue, respectively, was derived from sales of subscriptions while the remaining 28.5% and 29.8%, 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 their power and speed, 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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2022	2021	% Change	2022	2021	% Change
Cloud subscription revenue	$ 57,083	$ 42,486	34 %	$ 110,462	$ 81,539	35 %

Cloud subscription revenue includes cloud subscriptions bundled with maintenance and support and hosting services. We generally sell our cloud subscriptions on a per-user basis or through non-user based single application licenses. As such, 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 or by the number of application licenses purchased, 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 team and strategic relationships in growing our customer base, and our ability to further penetrate our existing customer base.

Cloud Subscription Revenue Retention Rate

	As of June 30,	
	2022	2021
Cloud subscription revenue retention rate	116 %	121 %

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 combined 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.

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 or through 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:

- Cloud 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 cloud 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, we expect professional services revenue as a percentage of total revenue to decrease as the usage of our partner network expands.

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 overhead costs. 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 overhead costs, 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 cost of professional services which, in turn, may impact our quarterly financial results and allocated overhead costs.

Gross Profit and Gross Margin

Gross profit and gross margin (defined as gross profit as a percentage of total revenue), have been, and will continue to be, affected by various factors, including the mix of cloud 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 providers, 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 cloud operations to support growth in our business, and the timing of those investments is expected to cause subscriptions gross margin to fluctuate on a quarterly basis.

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. At the outset of the COVID-19 pandemic, we lowered our usage of subcontractors and performed in fewer in-person professional services engagements and deployments, both of which reduced certain classes of expenses and improved professional services margins. In 2021 and continuing into 2022, these margins have declined but remain subject to fluctuation based on the 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. Personnel-related costs such as salaries, bonuses, commissions, payroll tax payments, and stock-based compensation expense are the most significant components of each of these expense categories. Other components of each category include professional fees for third-party services such as contract labor, legal, development resources, and consulting as well as allocated facility and overhead, which can include, among other types of costs, travel and entertainment expenditures, human resources costs such as placement fees, referral bonuses, training costs, and employee relations spending, office-related expenditures, and information technology costs for such items as infrastructure, software, and cloud computing services.

In general, our operating expenses are expected to continue to increase in absolute dollars as we invest resources in growing our various teams.

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 overhead costs.

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. Additionally, as the COVID-19 pandemic improves and certain restrictions are loosened, we would expect certain classes of expense such as travel and entertainment and in-person marketing events to increase relative to recent years. 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. We expect research and development expense to continue to increase in absolute dollars as such costs 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, as well as our senior executives. Additional expenses included in this category are non-personnel costs such as travel-related expenses, contracting and professional fees for such services as audits, taxation, and legal, insurance and other corporate expenses, including allocated overhead costs, bad debt expenses, and amortization of intangible assets.

Absent certain non-recurring legal expenses incurred in 2022 and prior years, we expect our general and administrative expense to increase in absolute dollars as we continue to support our growth.

Other Non-Operating Expense

Other Expense, Net

Other 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 and investments, and other sources of income or expense not related to our core business operations.

Interest Expense

Interest expense consists primarily of unused credit facility fees and commitment fees on our letters of credit.

Results of Operations

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Revenue				
Subscriptions	$ 76,668	$ 56,946	$ 160,388	$ 120,712
Professional services	33,395	26,053	63,941	51,142
Total revenue	110,063	82,999	224,329	171,854
Cost of revenue				
Subscriptions[1]	8,528	6,860	16,751	12,714
Professional services[1]	24,765	18,975	47,563	36,650
Total cost of revenue	33,293	25,835	64,314	49,364
Gross profit	76,770	57,164	160,015	122,490
Operating expenses				
Sales and marketing[1]	56,166	40,520	102,192	76,504
Research and development[1]	33,842	23,862	63,778	44,552
General and administrative[1]	29,509	17,358	60,658	36,500
Total operating expenses	119,517	81,740	226,628	157,556
Operating loss	(42,747)	(24,576)	(66,613)	(35,066)
Other non-operating expense (income)				
Other expense (income), net	6,153	(1,081)	6,940	1,812
Interest expense	60	80	134	161
Total other non-operating expense (income)	6,213	(1,001)	7,074	1,973
Loss before income taxes	(48,960)	(23,575)	(73,687)	(37,039)
Income tax expense (benefit)	394	250	(1,179)	373
Net loss	$ (49,354)	$ (23,825)	$ (72,508)	$ (37,412)

[1] Stock-based compensation as a component of these line items is as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Cost of revenue				
Subscriptions	$ 249	$ 295	$ 428	$ 592
Professional services	1,330	865	2,387	1,506
Operating expenses				
Sales and marketing	2,266	1,197	4,054	2,305
Research and development	3,063	1,069	5,377	2,084
General and administrative	2,240	1,172	3,845	6,005
Total stock-based compensation expense	$ 9,148	$ 4,598	$ 16,091	$ 12,492

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2022	2021	2022	2021
Revenue				
Subscriptions	69.7 %	68.6 %	71.5 %	70.2 %
Professional services	30.3	31.4	28.5	29.8
Total revenue	100.0	100.0	100.0	100.0
Cost of revenue				
Subscriptions	7.7	8.3	7.5	7.4
Professional services	22.5	22.9	21.2	21.3
Total cost of revenue	30.2	31.1	28.7	28.7
Gross profit	69.8	68.9	71.3	71.3
Operating expenses				
Sales and marketing	51.0	48.8	45.6	44.5
Research and development	30.7	28.7	28.4	25.9
General and administrative	26.8	20.9	27.0	21.2
Total operating expenses	108.6	98.5	101.0	91.7
Operating loss	(38.8)	(29.6)	(29.7)	(20.4)
Other non-operating expense (income)				
Other expense (income), net	5.6	(1.3)	3.1	1.1
Interest expense	0.1	0.1	0.1	0.1
Total other non-operating expense (income)	5.6	(1.2)	3.2	1.1
Loss before income taxes	(44.5)	(28.4)	(32.8)	(21.6)
Income tax expense (benefit)	0.4	0.3	(0.5)	0.2
Net loss	(44.8)%	(28.7)%	(32.3)%	(21.8)%

Comparison of the Three Months Ended June 30, 2022 and 2021

Revenue

	Three Months Ended June 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Revenue				
Subscriptions	$ 76,668	$ 56,946	$ 19,722	34.6 %
Professional services	33,395	26,053	7,342	28.2 %
Total revenue	$ 110,063	$ 82,999	$ 27,064	32.6 %

Total revenue increased $27.1 million, or 32.6%, in the three months ended June 30, 2022 compared to the same period in 2021 due to an increase in our subscriptions revenue of $19.7 million and an increase in our professional services revenue of $7.3 million. The increase in subscriptions revenue was driven largely by a $14.6 million increase in cloud subscription revenue and a $4.7 million increase in on-premises subscription revenue. With respect to new versus existing customers, there was a $13.4 million increase in subscriptions revenue stemming from expanded deployments and corresponding sales of additional subscriptions to existing customers while $6.3 million of the increase was the result of sales of subscriptions to new customers. The remainder of the increase is attributable to revenue recognized from Lana Labs. The increase in professional services revenue was due primarily to a $7.9 million increase in sales to new customers, which was partially offset by a $0.6 million decrease in revenue from existing customers. Professional services revenue was also impacted by the level of usage of partners to perform professional services in the three months ended June 30, 2022 as compared to the same period in 2021.

Cost of Revenue

	Three Months Ended June 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Cost of revenue				
Subscriptions	$ 8,528	$ 6,860	$ 1,668	24.3 %
Professional services	24,765	18,975	5,790	30.5 %
Total cost of revenue	$ 33,293	$ 25,835	$ 7,458	28.9 %
Subscriptions gross margin	88.9 %	88.0 %		
Professional services gross margin	25.8 %	27.2 %		
Total gross margin	69.8 %	68.9 %		

Cost of revenue increased $7.5 million, or 28.9%, in the three months ended June 30, 2022 compared to the same period in 2021, primarily due to a $4.8 million increase in professional services and product support personnel costs, a $0.9 million increase in hosting costs, a $0.7 million increase in contractor costs, a $0.6 million increase in overhead costs, and a $0.5 million increase in travel and entertainment expenses. Personnel costs increased due to an increase in professional services and product support personnel headcount of 17.0% from June 30, 2021 to June 30, 2022, coupled with a $0.4 million increase in stock-based compensation. Hosting costs increased as sales of our cloud offering increased in the three months ended June 30, 2022. Contractor costs increased in the three months ended June 30, 2022 compared to the same period in 2021 due to an increase in the usage of subcontractors and consultants for professional services engagements. The increase in overhead costs was due largely to an increase in certain allocated costs tied directly to our growth such as spending for offices, human resources costs, and information technology infrastructure.

Subscriptions gross margin slightly increased to 88.9% for the three months ended June 30, 2022 compared to 88.0% in the same period in 2021 due to an increase in subscriptions revenue during the three months ended June 30, 2022 as compared to the three months ended June 30, 2021. This increase was partially offset by an increase in hosting costs as sales of our cloud offering increased and became a larger proportion of our overall subscriptions revenue. Professional services gross margin decreased to 25.8% for the three months ended June 30, 2022 compared to 27.2% in the same period in 2021 due largely to higher personnel and other allocated costs such as human resources, information technology, and office-related spending in the comparable periods, partially offset by an increase in professional services revenue. Furthermore, fewer in-person professional services engagements and deployments during the three months ended June 30, 2021 as compared to the three months ended June 30, 2022 led to temporarily improved margins in the prior year. Gross margin rose slightly to 69.8% in the three months ended June 30, 2022 as compared to 68.9% in the same period in 2021, due largely to the increase in professional services revenue and improved subscriptions margins.

Sales and Marketing Expense

	Three Months Ended June 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Sales and marketing	$ 56,166	$ 40,520	$ 15,646	38.6 %
% of revenue	51.0 %	48.8 %		

Sales and marketing expense increased $15.6 million, or 38.6%, in the three months ended June 30, 2022 compared to the same period in 2021, primarily due to an $8.0 million increase in sales and marketing personnel costs, a $4.4 million increase in marketing costs, and a $3.4 million increase in overhead costs, which were partially offset by a $0.2 million decrease in professional fees. Personnel costs increased due to an increase in sales and marketing personnel headcount of 19.2% from June 30, 2021 to June 30, 2022, a $1.2 million increase in commissions expense due to increased sales, and a $1.1 million increase in stock-based compensation expense. Marketing costs increased due to an increase in the number of marketing events held during the three months ended June 30, 2022 as compared to the three months ended June 30, 2021, including spending on our annual user conference Appian World, which resumed its in-person format in April 2022. Additionally, marketing costs increased due to an increase in spending on advertising campaigns. Overhead costs increased due to increases in certain allocated costs tied directly to our growth such as spending for offices, human resources costs, and information technology infrastructure. Additionally, travel and entertainment expenses increased due to a higher number of in-person engagements and events relative to the prior year. Professional fees decreased due to a decrease in the use of third-party sales and marketing consultants for certain initiatives.

Research and Development Expense

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Research and development	$ 33,842	$ 23,862	$ 9,980	41.8 %
% of revenue	30.7 %	28.7 %		

Research and development expense increased $10.0 million, or 41.8%, in the three months ended June 30, 2022 compared to the same period in 2021, primarily due to an $8.5 million increase in research and development personnel costs, a $1.4 million increase in overhead costs, and a $0.1 million increase in professional fees. Personnel costs increased due to an increase in research and development personnel headcount of 32.2% from June 30, 2021 to June 30, 2022, coupled with a $2.0 million increase in stock-based compensation expense. Overhead costs increased due to increases in certain allocated costs tied directly to our growth such as spending for offices, human resources costs, and information technology infrastructure. Professional fees increased due to an increase in consulting fees stemming from higher usage of external resources to assist in our platform development efforts.

General and Administrative Expense

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
General and administrative expense	$ 29,509	$ 17,358	$ 12,151	70.0 %
% of revenue	26.8 %	20.9 %		

General and administrative expense increased $12.2 million, or 70.0%, in the three months ended June 30, 2022 compared to the same period in 2021, primarily due to a $6.2 million increase in professional fees, a $3.2 million increase in overhead costs, and a $2.7 million increase in general and administrative personnel costs. Professional fees increased due to higher legal fees incurred in connection with two separate lawsuits, one involving an effort to enforce our intellectual property and one involving reciprocal false advertising and related claims with a competitor. Refer to Item 1. Legal Proceedings, within Part II of this Form 10-Q for further information. Overhead costs increased primarily due to an increase in certain allocated costs tied to our growth such as insurance premiums, information technology spending, human resources costs, and office-related expenses. Personnel costs increased due to an increase in general and administrative personnel headcount of 27.4% from June 30, 2021 to June 30, 2022 as well as a $1.1 million increase in stock-based compensation.

Other Non-Operating Expense (Income), Net

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Other expense (income), net	$ 6,153	$ (1,081)	$ 7,234	***
% of revenue	5.6 %	(1.3)%		

*** Indicates a percentage that is not meaningful.

Other expense (income), net was $6.2 million in the three months ended June 30, 2022 compared to other income, net of $1.1 million in the three months ended June 30, 2021. This change was primarily due to $6.5 million in foreign exchange losses in the three months ended June 30, 2022 as compared to $1.0 million in foreign exchange gains in the three months ended June 30, 2021. The primary reason for the increase in foreign exchange losses was the strengthening of the U.S. dollar against the British pound, Euro, and Swiss franc.

Interest Expense

	Three Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Interest expense	$ 60	$ 80	$ (20)	(25.0)%
% of revenue	0.1 %	0.1 %		

Interest expense decreased by a nominal amount in the three months ended June 30, 2022 compared to the same period in 2021, primarily due to lower commitment fees on the letters of credit outstanding.

Comparison of the Six Months Ended June 30, 2022 and 2021

Revenue

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Revenue				
Subscriptions	$ 160,388	$ 120,712	$ 39,676	32.9 %
Professional services	63,941	51,142	12,799	25.0 %
Total revenue	$ 224,329	$ 171,854	$ 52,475	30.5 %

Total revenue increased $52.5 million, or 30.5%, in the six months ended June 30, 2022 compared to the same period in 2021 due to an increase in our subscriptions revenue of $39.7 million and an increase in our professional services revenue of $12.8 million. The increase in subscriptions revenue was driven largely by a $28.9 million increase in cloud subscription revenue, a $9.6 million increase in on-premises subscription revenue, and a $1.2 million increase in maintenance and support revenues. With respect to new versus existing customers, there was a $27.3 million increase in subscriptions revenue stemming from expanded deployments and corresponding sales of additional subscriptions to existing customers while $12.2 million of the increase was the result of sales of subscriptions to new customers. The remainder of the increase is attributable to revenue recognized from Lana Labs. The increase in professional services revenue was due primarily to a $13.9 million increase in sales to new customers, which was partially offset by a $1.1 million decrease in revenue from existing customers. Professional services revenue was also impacted by the level of usage of partners to perform professional services in the six months ended June 30, 2022 as compared to the same period in 2021.

Cost of Revenue

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Cost of revenue				
Subscriptions	$ 16,751	$ 12,714	$ 4,037	31.8 %
Professional services	47,563	36,650	10,913	29.8 %
Total cost of revenue	$ 64,314	$ 49,364	$ 14,950	30.3 %
Subscriptions gross margin	89.6 %	89.5 %		
Professional services gross margin	25.6 %	28.3 %		
Total gross margin	71.3 %	71.3 %		

Cost of revenue increased $15.0 million, or 30.3%, in the six months ended June 30, 2022 compared to the same period in 2021, primarily due to a $9.9 million increase in professional services and product support personnel costs, a $2.5 million increase in hosting costs, a $1.1 million increase in overhead costs, a $0.8 million increase in contractor costs, and a $0.6 million increase in travel and entertainment expenses. Personnel costs increased due to an increase in professional services and product support personnel headcount of 17.0% from June 30, 2021 to June 30, 2022, coupled with a $0.7 million increase in stock-based compensation. Hosting costs increased as sales of our cloud offering increased in the six months ended June 30, 2022. The increase in overhead costs was due largely to an increase in certain allocated costs tied directly to our growth such as spending for offices, human resources costs, and information technology infrastructure. Contractor costs increased in the six months ended June 30, 2022 compared to the same period in 2021 due to an increase in the usage of subcontractors and consultants for professional services engagements.

Subscriptions gross margin was 89.6% for the six months ended June 30, 2022, consistent with a margin of 89.5% in the same period in 2021. As sales of our cloud offering increased and became a larger proportion of our overall subscriptions revenue, hosting costs increased. However, this increase in hosting costs was offset by an increase in subscriptions revenue. Professional services gross margin decreased to 25.6% for the six months ended June 30, 2022 compared to 28.3% in the same period in 2021 due largely to higher personnel and human resources costs in the current year, partially offset by an increase in professional services revenue. Furthermore, fewer in-person professional services engagements and deployments during the six months ended June 30, 2021 as compared to the six months ended June 30, 2022 led to temporarily improved margins in the prior year. Based on the above offsetting factors, gross margin remained consistent at 71.3% for both the six months ended June 30, 2022 and June 30, 2021.

Sales and Marketing Expense

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Sales and marketing	$ 102,192	$ 76,504	$ 25,688	33.6 %
% of revenue	45.6 %	44.5 %		

Sales and marketing expense increased $25.7 million, or 33.6%, in the six months ended June 30, 2022 compared to the same period in 2021, primarily due to a $15.0 million increase in sales and marketing personnel costs, a $6.3 million increase in overhead costs, and a $5.1 million increase in marketing costs, which were partially offset by a $0.7 million decrease in professional fees. Personnel costs increased due to an increase in sales and marketing personnel headcount of 19.2% from June 30, 2021 to June 30, 2022, increased sales commissions driven by our revenue growth, and a $1.7 million increase in stock-based compensation expense. Overhead costs increased due to increases in certain allocated costs tied directly to our growth such as spending for offices, human resources costs, and information technology infrastructure. Additionally, travel and entertainment expenses increased due to a higher number of in-person engagements and events relative to the prior year. Marketing costs increased due to an increase in the number of marketing events held during the six months ended June 30, 2022 as compared to the six months ended June 30, 2021, including spending on our annual user conference Appian World, which resumed its in-person format in April 2022. Additionally, marketing costs increased due to an increase in spending on advertising campaigns. Professional fees decreased due to a decrease in the use of third-party sales and marketing consultants for certain initiatives.

Research and Development Expense

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Research and development	$ 63,778	$ 44,552	$ 19,226	43.2 %
% of revenue	28.4 %	25.9 %		

Research and development expense increased $19.2 million, or 43.2%, in the six months ended June 30, 2022 compared to the same period in 2021, primarily due to a $15.8 million increase in research and development personnel costs, a $2.5 million increase in overhead costs, and a $0.8 million increase in professional fees. Personnel costs increased due to an increase in research and development personnel headcount of 32.2% from June 30, 2021 to June 30, 2022, coupled with a $3.3 million increase in stock-based compensation expense. Overhead costs increased due to increases in certain allocated costs tied directly to our growth such as spending for offices, human resources costs, and information technology infrastructure. Professional fees increased due to an increase in consulting fees stemming from higher usage of external resources to assist in our platform development efforts.

General and Administrative Expense

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
General and administrative expense	$ 60,658	$ 36,500	$ 24,158	66.2 %
% of revenue	27.0 %	21.2 %		

General and administrative expense increased $24.2 million, or 66.2%, in the six months ended June 30, 2022 compared to the same period in 2021, primarily due to a $16.9 million increase in professional fees, a $6.0 million increase in overhead costs, and a $1.2 million increase in general and administrative personnel costs. Professional fees increased due to higher legal fees incurred in connection with two separate lawsuits, one involving an effort to enforce our intellectual property and one involving reciprocal false advertising and related claims with a competitor. Refer to Item 1. Legal Proceedings, within Part II of this Form 10-Q for further information. Overhead costs increased primarily due to an increase in certain allocated costs tied to our growth such as insurance premiums, information technology spending, human resources costs, and office-related expenses. Personnel costs increased due to an increase in general and administrative personnel headcount of 27.4% from June 30, 2021 to June 30, 2022. This increase was partially offset by a $2.2 million decrease in stock-based compensation, driven by the accelerated recognition of expense pursuant to the vesting of the 2019 CEO grant during the six months ended June 30, 2021.

Other Non-Operating Expense, Net

	Six Months Ended June 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Other expense, net	$ 6,940	$ 1,812	$ 5,128	***
% of revenue	3.1 %	1.1 %		

*** Indicates a percentage that is not meaningful.

Other expense, net was $6.9 million in the six months ended June 30, 2022 compared to other expense, net of $1.8 million in the six months ended June 30, 2021. This change was primarily due to $8.4 million in foreign exchange losses in the six months ended June 30, 2022 as compared to $2.0 million in foreign exchange losses in the six months ended June 30, 2021. The primary reason for the increase in foreign exchange losses was the strengthening of the U.S. dollar against the British pound, Euro, and Swiss franc.

Interest Expense

	Six Months Ended June 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Interest expense	$ 134	$ 161	$ (27)	(16.8)%
% of revenue	0.1 %	0.1 %		

Interest expense decreased by a nominal amount in the six months ended June 30, 2022 compared to the same period in 2021, primarily due to lower commitment fees on the letters of credit outstanding.

Liquidity and Capital Resources

The following table presents selected financial information and statistics pertaining to liquidity and capital resources as of June 30, 2022 and December 31, 2021:

	As of	
	June 30, 2022	December 31, 2021
Cash and cash equivalents	$ 76,185	$ 100,796
Short-term investments and marketable securities	59,748	55,179
Property and equipment, net	38,539	36,913
Long-term investments	2,022	12,044
Working capital*	102,338	121,752

* Defined as current assets net of current liabilities, excluding the current portion of restricted cash

As of June 30, 2022, we had $76.2 million of cash and cash equivalents and $59.7 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 line of credit, will be sufficient to support working capital and capital expenditure requirements for at least the next 12 months. We expect future sources of funds to consist primarily of cash generated from sales of subscriptions and the related professional services. We may also elect to raise additional sources of funding through draws on our existing line of credit, entering into new debt financing arrangements, or conducting additional public offerings. 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, and the level of market acceptance of our applications.

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

Since becoming a public company in 2017, we have financed our operations in large part with equity financing arrangements, including net proceeds of $77.8 million from our initial public offering in May 2017, net proceeds of $57.8 million from our underwritten public offering in August 2018, net proceeds of $101.3 million from our underwritten public offering in September 2019, and net proceeds of $107.9 million from our underwritten public offering in June 2020. In addition, we have financed our operations through sales of subscriptions and professional services.

We have a $20.0 million revolving line of credit with a lender that matures in November 2025. In January 2022, we executed the second loan modification agreement to increase the aggregate amount of funds our foreign subsidiaries are allowed to maintain outside of the United States. We were in compliance with all covenants as of June 30, 2022. As of June 30, 2022, we had no outstanding borrowings under this revolving line of credit, and we had outstanding letters of credit totaling $11.0 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. Historically, we have also utilized cash to pay for the acquisition of businesses that were complementary to ours, and we may pursue similar opportunities in the future. Over the past several years, revenue has increased significantly from year to year and, as a result, cash flows from customer collections have also grown. However, as we continue to invest in growing our business, operating expenses have also increased. Outside of cash used in operations, other uses of cash in 2022 to date have included capital expenditures related to the expansion of our headquarters. Non-operating cash uses in the prior year through June 30, 2021 also consisted primarily of modest capital expenditures.

Furthermore, in 2021 we executed a non-cancellable cloud hosting arrangement with Amazon Web Services that contains provisions for minimum purchase commitments. Purchase commitments under the agreement total $131.0 million over five years, including $22.0 million in the first year, $25.0 million in the second year, and $28.0 million in each of the third, fourth, and fifth years. The timing of payments under the agreement may vary, and the total amount of payments may exceed the minimum depending on the volume of services utilized. Spending under this agreement for the six months ended June 30, 2022 totaled $15.9 million.

Historical Cash Flows

	Six Months Ended June 30,			
	2022	**2021**	**$ Change**	**% Change**
	(dollars in thousands)			
Beginning cash, cash equivalents, and restricted cash	$ 103,960	$ 112,462	$ (8,502)	(7.6)%
Operating activities:				
Net loss	(72,508)	(37,412)	(35,096)	93.8
Stock-based compensation and other non-cash adjustments	18,361	14,910	3,451	23.1
Changes in working capital	3,886	13,129	(9,243)	(70.4)
Net cash used by operating activities	(50,261)	(9,373)	(40,888)	***
Investing activities:				
Net cash provided by investing activities	574	26,577	(26,003)	(97.8)
Financing activities:				
Net cash provided by financing activities	25,030	2,089	22,941	***
Effect of exchange rates	(205)	(476)	271	(56.9)
Net change in cash	(24,862)	18,817	(43,679)	***
Ending cash, cash equivalents, and restricted cash	$ 79,098	$ 131,279	(52,181)	(39.7)

*** Indicates a percentage that is not meaningful.

Operating Activities

Net cash used by operating activities was $50.3 million for the six months ended June 30, 2022 as compared to $9.4 million used by operating activities for the six months ended June 30, 2021. The increase in net cash used by operating activities was primarily due to a $35.1 million increase in net losses, most notably driven by the increase in operating expenses as discussed above. In addition, the increase in cash used by operating activities for the six months ended June 30, 2022 was attributed to a decline in cash flows from working capital of $9.2 million. This change from working capital is comprised primarily of a $7.7 million decrease in accrued compensation and related benefits and a $5.6 million increase in prepaid expenses and other assets was driven by higher prepayments under the AWS cloud hosting arrangement.

Investing Activities

Net cash provided by investing activities was $0.6 million for the six months ended June 30, 2022 as compared to $26.6 million provided by investing activities for the six months ended June 30, 2021. The decrease in net cash provided by investing activities was primarily due to $31.2 million in purchases of investments for the six months ended June 30, 2022 and a $3.7 million increase in capital expenditures year over year, partially offset by an $8.9 million increase in proceeds from the sale of investments.

Financing Activities

Net cash provided by financing activities was $25.0 million for the six months ended June 30, 2022 as compared to $2.1 million provided by financing activities for the six months ended June 30, 2021. The increase in net cash provided by financing activities was primarily due to $23.8 million in proceeds received from the exercise of the 2019 CEO stock option during the six months ended June 30, 2022.

Critical Accounting Estimates

There have been no material changes in our critical accounting policies from those disclosed in our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 17, 2022. We are not aware of any specific events or circumstances that would require us to update our estimates, assumptions, and judgments.

Recent Accounting Pronouncements

See Note 2 to the unaudited condensed consolidated financial statements in Part I, Item 1 of this Quarterly Report on Form 10-Q for a discussion of recent accounting pronouncements.

Item 3. 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. The uncertainty that exists with respect to the economic impact of the global COVID-19 pandemic has also introduced significant volatility in the financial markets.

Interest Rate Risk

We had total cash, cash equivalents, and restricted cash of $79.1 million as of June 30, 2022, which consisted of $9.4 million invested in a money market fund, cash in readily available checking accounts, and overnight repurchase investments. These securities, which are not dependent on interest rate fluctuations that may cause principal amounts to fluctuate, are held for reinvestment and working capital purchases.

In addition, as of June 30, 2022, we held $61.8 million of fixed income securities such as U.S. Treasuries, commercial paper, corporate bonds, and asset-backed securities. These securities are subject to market risk due to fluctuations in interest rates, which may affect our interest income and the fair value of our investments. We classify investments as available-for-sale, including those with stated maturities beyond twelve months. As such, no gains or losses due to changes in interest rates are recognized in our consolidated statements of operations unless such securities are sold prior to maturity or due to expected credit losses. A hypothetical 100 basis point change in interest rates would not have had a material effect on the fair market value of our investment portfolio as of June 30, 2022. To date, fluctuations in interest income have also not been significant. Our investments are made for the purpose of preserving capital, fulfilling liquidity needs, and maximizing total return. We do not enter into investments for trading or speculative purposes.

As of June 30, 2022, we had no outstanding borrowings.

Inflation Risk

We are exposed to market risks related to inflation in personnel costs, third-party service providers, subcontracting costs, professional fees, and general overhead expenses. During 2022, inflation has increased to rates beyond recent history, and as a result we have experienced rising costs. If these inflation pressures continue or increase in severity, we may not be able to fully offset such higher costs through price increases and productivity initiatives. While we do not believe inflation has had a material impact on our results of operations to date, continued high rate of inflation in the future may have an adverse effect on our ability to maintain operating costs and adversely affect our gross profit margin.

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 Australian dollar, Swiss franc, British pound, and Euro. Our international sales contracts are primarily denominated in the local currency of the customer making the purchase. In addition, a portion of operating expenses are incurred outside the United States and are denominated in foreign currencies. Increases in the relative value of the U.S. dollar to other currencies will negatively affect revenue and net operating results as expressed in U.S. dollars. Based on a sensitivity analysis, a 10% change in the foreign currency exchange rates for the six months ended June 30, 2022 would have impacted our total revenue by approximately 3% and operating loss by approximately 3%. This calculation assumes all currencies change in the same direction and proportion relative to the U.S. dollar.

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 4. 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 our management, including our 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 June 30, 2022. Based on the evaluation of our disclosure controls and procedures as of June 30, 2022, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control Over Financial Reporting

There was no change in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the period covered by this Quarterly Report on Form 10-Q 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 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.

PART II—OTHER INFORMATION

Item 1. LEGAL PROCEEDINGS

Other than as discussed below, during the period covered by this report, there were no material developments in the legal proceedings disclosed in our Annual Report on Form 10-K for the year ended December 31, 2021 and our Quarterly Report on Form 10-Q for the quarter ended March 31, 2022.

Pegasystems Litigation

On May 29, 2020, we filed a civil complaint against Pegasystems Inc. (“Pegasystems”) and Youyong Zou, a Virginia resident, in the Circuit Court for Fairfax County, Virginia. *Appian Corp. v. Pegasystems Inc. & Youyong Zou*, No. 2020-07216 (Fairfax Cty. Ct.), and on May 9, 2022, the jury in the case awarded us $2.036 billion in damages for misappropriation of our trade secrets and $1 in damages for violating the Virginia Computer Crimes Act. Pegasystems filed post-trial motions in which it seeks relief in the form of reducing the damages award or setting aside the jury’s verdict and either granting a new trial or entering judgment in Pegasystems’ favor. One of these motions was denied on July 28, 2022. We believe Pegasystems’ motions are without merit. We simultaneously filed a motion for attorneys’ fees and costs, as well as post-judgment interest on any award of attorneys’ fees and costs, based on the jury's finding that our trade secrets were willfully and maliciously misappropriated.

On July 3, 2019, Pegasystems filed a claim against us and BPM.com, Inc., a market analyst company, in U.S. District Court for the District of Massachusetts alleging, among other things, that we had engaged in false advertising by re-publishing a study by BPM.com comparing us favorably to Pegasystems and by failing to disclose we commissioned the study. *Pegasystems Inc. v. Appian Corp. & Business Process Management Inc.*, No. 1:19-cv-11461 (D. Mass). We filed counterclaims against Pegasystems for false advertising, alleging numerous marketing and advertising materials used by Pegasystems, including that a report purportedly authored by Jim Sinur, a former industry analyst, were false and/or misleading and, in the case of the Sinur report, Pegasystems failed to disclose that it had commissioned the report. We also made a claim for defamation against Pegasystems based on public statements by Pegasystems’ executives. On July 15, 2022, the Court heard oral argument on the parties’ summary judgment motions but has not yet entered an order on either party’s motion. We continue to believe Pegasystems’ claims are without merit.

Other Matters

From time to time, we may become involved in legal proceedings or be subject to claims arising in the ordinary course of our business. Other than as disclosed elsewhere in this Quarterly Report, 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 resources, and other factors.

Item 1A. RISK FACTORS

Our business is subject to risks and events that, if they occur, could adversely affect our financial condition and results of operations and the trading price of our securities. In addition to the other information set forth in this Quarterly Report on Form 10-Q, you should carefully consider the factors described in “Part I, Item 1A. Risk Factors” of our Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 17, 2022. There have been no material changes to the risk factors described in that report.

Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

a. Recent Sales of Unregistered Equity Securities

Not applicable.

b. Use of Proceeds

Not applicable.

c. Issuer Purchases of Equity Securities

Period	Total number of shares purchased[1]		Average price paid per share	Total number of shares purchased as part of publicly announced plan	Maximum number of shares that may yet be purchased under the plan [2]
April 1 to April 30, 2022	3,225	$	62.38	3,225	968,769
May 1 to May 31, 2022	4,490	$	48.24	4,490	964,279
June 1 to June 30, 2022	4,264	$	48.41	4,264	960,015
Total	11,979	$	52.11	11,979	960,015

(1) Shares purchased represent shares purchased on the open market pursuant to the Appian Corporation Employee Stock Purchase Plan ("ESPP"), which was approved by the Company's stockholders on June 11, 2021. Shares purchased under the ESPP are deposited into the participants' accounts.

(2) Because the number of shares that may be purchased under the ESPP depends on each employee's voluntary election to participate and contribution elections and on the fair market value of our Class A Common Stock at various future dates, the actual number of shares that may be purchased under the plan cannot be determined in advance. We have filed a registration statement on S-8 that covers 1,000,000 shares.

Item 3. DEFAULTS UPON SENIOR SECURITIES

Not applicable.

Item 4. MINE SAFETY DISCLOSURES

Not applicable.

Item 5. OTHER INFORMATION

The information set forth below is included herein for the purposes of providing disclosure under "Item 8.01 Other Events" of Form 8-K.

On August 1, 2022, we appointed Christopher M. Jones as Chief Revenue Officer. Mr. Jones will report directly to Matthew Calkins, the Company's Chief Executive Officer.

Item 6. EXHIBITS

Exhibit No.	Description	Reference
10.1	Consultant Agreement, dated as of May 23, 2022, by and between Appian Corporation and William McCarthy.+	Attached.
10.2	Employment Agreement, dated as of April 2, 2022, by and between Appian Corporation and Mark Matheos.+	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 5, 2022, and incorporated herein by reference.
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.	Attached.
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.	Attached.
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.	Attached.
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	XBRL Taxonomy Extension Schema Document	Attached.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	Attached.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	Attached.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	Attached.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	Attached.
104	Cover page formatted as Inline XBRL and contained in Exhibit 101	Attached.

+ Indicates management contract or compensatory plan.
* The certifications furnished in Exhibit 32.1 hereto are deemed to accompany this Quarterly Report on Form 10-Q and will not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, except to the extent the company specifically incorporates it by reference.

SIGNATURES

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

August 4, 2022	By:	/s/ Matthew Calkins	/s/ Mark Matheos
		Name: Matthew Calkins	Name: Mark Matheos
		Title: Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	Title: Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)

CONSULTANT AGREEMENT

This Consultant Agreement ("Agreement") is between Appian Corporation, located at 7950 Jones Branch Drive, McLean, Virginia 22102 ("Appian"), and Bill McCarthy ("Consultant"). This Agreement shall be effective as of the last date this Agreement is signed in the signature block below ("Effective Date"). Appian and Consultant may be individually referred to as a Party or collectively referred to as the Parties.

1. **Services and Effect on Prior Contract**

Consultant shall serve as Acting Chief Operating Officer, working with Appian's Go to Market Sales and Marketing teams to improve processes and programs and assist in development of sales pipeline.

Appian will compensate Consultant at the annual rate of $2,000 per hour.

By entering into this agreement, the parties agree that the Consultant Agreement between the parties dated May 11, 2021 is terminated and Consultant shall not longer submit invoices under that agreement.

2. **Independent Contractor**

Consultant shall be an independent contractor and not an employee or agent of Appian. Consultant shall not at any time be eligible to participate in benefits of any sort which Appian offers to its employees. Except as otherwise provided herein, Consultant is responsible for paying all ordinary and necessary expenses, including, but not limited to, all applicable taxes, workers' compensation insurance, and state disability insurance. As an independent contractor, Consultant:

(a) has the right to control and direct the means and methods of performing the Services, subject to Appian's general direction;

(b) shall use his/her own tools, equipment, and supplies in performing the Services;
(c) maintains a place of business at a location other than at Appian's premises; and
(d) is free to accept other work for other clients, provided such work does not interfere with Consultant's obligations to perform the Services pursuant to the Statement of Work.

3. **Invoicing and Payment**

3.1 Invoice Schedule. Consultant shall invoice Appian on a monthly basis in arrears, based on Consultant's good faith estimate of the number of hours spent providing services under this agreement.

3.2 Payment. Invoices shall be payable within thirty (30) days of Appian's receipt of a correct and properly documented invoice, provided that Appian may withhold from any payment any amount incorrectly invoiced or in dispute. Invoices must be submitted to the following address (or such other address to which Appian notifies Consultant):

Accounts Payable
Appian Corporation
7950 Jones Branch Drive
McLean, Virginia 22182

3.3 Expenses. Appian will only reimburse Consultant for those expenses and which are approved advance and in writing by Matthew Calkins. Invoices for reimbursable expenses must include copies of all the corresponding receipts.

3.4 Taxes. Consultant shall comply with all federal and state benefits laws applicable to Consultant, including making deductions and contributions for social security and unemployment taxes. Each Party shall be responsible for the payment of other taxes, if any, imposed upon it in connection with, or as a result of, this Agreement.

4. **Audit and Records**

Consultant shall maintain books and records supporting all fees and reimbursable expenses invoiced to Appian under this Agreement. During the term of this Agreement and for one (1) year thereafter, Appian shall have access to such books and to all other records of Consultant as required to verify Consultant's invoices.

5. **Warranty**

Consultant represents and warrants as follows:

5.1 All materials and/or work product created, in the process of being created, or delivered to Appian (or Appian's customer) in accordance with this Agreement or which may otherwise result from the Services and which was not provided by Appian (collectively, the "Materials") is original material or material which has been properly licensed from third parties and has been used by Consultant consistent with such licenses.

5.2 The Materials or any part thereof have not been assigned, transferred, or otherwise encumbered, do not infringe any patents, copyrights, trade secrets or other proprietary rights of any third party, and Consultant has no reason to believe that any such infringement or claims thereof could be made by third parties.

5.3 The Services will be performed in a professional and workmanlike manner consistent with prevailing industry standards.

5.4 Consultant has all necessary licenses, work permits or other government approvals required of Consultant to perform the Services, to specifically include compliance with applicable immigration and non-immigration codes, rules and regulations. Consultant warrants that he has the approval of his employer to provide the services.

5.5 Consultant will neither undertake, nor cause or permit to be undertaken, any activity which either (a) is illegal under any laws, decrees, rules, or regulations in effect in the United States, or (b) would have the effect of causing Appian to be in violation of any laws, decrees, rules or regulations in effect in the United States or elsewhere. In particular, and without limiting the generality of the foregoing, Consultant agrees not to, directly or indirectly, give, offer, promise, authorize, or tolerate to be given, offered or promised, anything of value to an official or employee of any customer or potential customer of Appian with the intent to (i) influence any official act or decision of such official or employee, or (ii) induce such official or employee to use its influence to affect or influence any act or decision of the potential or actual customer.

5.6 Consultant has performed reasonable background checks on all Consultant personnel who perform the Services, and such personnel have passed such background checks. Upon Appian's written request, Consultant will confirm that any Consultant personnel identified by Appian have passed these background checks.

6. **Confidentiality**

6.1 Confidential Information. The term "Confidential Information" means any information, materials or data, in any medium, disclosed by Appian to the Consultant which (a) is disclosed in writing and marked confidential, (b) is disclosed orally and identified as Confidential Information at the time of disclosure, or (c) should reasonably have been understood by Consultant to be confidential because of the circumstances of disclosure or the nature of the information disclosed. Confidential Information shall not include information that (i) has become publicly known through no wrongful act of Consultant, (ii) has been rightfully received from a third party authorized to make such communication without restriction, (iii) has been independently developed by Consultant without reliance upon the Confidential Information, (iv) has been approved for release by written authorization by Appian, or (v) is required to be disclosed as a matter of law; provided that Consultant promptly notifies Appian of the request for disclosure and provides Appian reasonable assistance and cooperation to enable Appian to obtain a protective order.

6.2 Confidentiality Obligations. Confidential Information shall remain Appian's property. Consultant may only use the Confidential Information as reasonably necessary to perform the Services. Consultant may not disclose the Confidential Information to any third party without Appian's express prior written consent. Consultant will protect the Confidential Information from unauthorized use and disclosure using the same means it uses to protect its own information and data of like importance, but in no event using less than a reasonable degree of care. Consultant will immediately notify Appian of any actual or threatened unauthorized use or disclosure of the Confidential Information. Consultant agrees to reasonably assist Appian in remedying any such unauthorized use or disclosure, and Consultant shall be responsible for any breach of this

Agreement by those receiving Confidential Information by or through Consultant. Consultant's ability to use the Confidential Information shall automatically expire upon the earlier of Consultant no longer requiring the Confidential Information to perform the applicable Services or upon the termination or expiration of the Agreement. Within ten (10) business days after the expiration or termination of the Agreement, Consultant shall return all copies of the Confidential Information to Appian or certify to Appian that all Confidential Information has been destroyed.

7. **Ownership of Intellectual Property**

7.1 General. Except as noted in Section 7.2 below, the Materials shall be a "Work Made For Hire" and Appian shall own all right, title and interest in and to the Materials, including, without limitation, all intellectual property rights therein. To the extent the Materials are determined not to constitute a "Work Made For Hire" as a matter of law, Consultant irrevocably assigns and transfers all right, title and interest in such Materials to Appian upon the Material being made. To the maximum extent permitted by applicable law, Consultant waives all moral rights in the Materials. At the request and expense of Appian, Consultant shall take such steps as may be necessary or desirable, in Appian's reasonable discretion, in order for Appian to secure, or for Consultant to assign, transfer and convey any of the foregoing to Appian (or its nominee).

7.2 Pre-existing Material. Consultant shall retain ownership in any preexisting proprietary materials that are contained in the Materials, provided Consultant specifically identifies such materials to Appian in advance. Appian shall own all pre-existing material (including all intellectual property rights therein) that is not identified by Consultant. To the extent such pre-existing materials are incorporated into the Materials and identified by Consultant, Consultant grants to Appian an irrevocable, nonexclusive, worldwide, royalty free, transferable license to use, execute, reproduce, display, perform, distribute copies of, and prepare derivative works based upon, such preexisting materials, and to authorize, or sub-license others to do any, some or all of the foregoing.

8. **Term and Termination**

8.1 Term. This Agreement shall be effective upon the Effective Date and, unless terminated earlier as set forth below, shall remain in effect for a term of one year, unless extended further by the parties in writing.

8.2 Termination. This Agreement shall terminate upon the occurrence of any of the following:

(a) Appian may terminate this Agreement for its convenience upon providing Consultant with no less than ten (10) calendar days prior written notice.
(b) Either Party may terminate this Agreement if the other Party commits a material breach of the terms of this Agreement and fails to cure such breach within thirty (30) calendar days after receiving written notice of the breach from the other, non breaching Party.

8.3 Rights Upon Termination. Upon the effective date of termination, Consultant shall stop performing the Services specified in such termination notice and Appian shall compensate Consultant as follows: Appian shall pay for all work accepted by Appian prior to the effective date of termination. All Materials in Consultant's possession at the time of such cancellation or termination shall be immediately forwarded to Appian. All licenses granted under or pursuant to this Agreement by Consultant to Appian are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the United States Bankruptcy Code, or replacement provision therefore (the "Code"), licenses to rights to "intellectual property" as defined in the Code. The Parties agree that Appian, as licensee of such rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the Code. The Parties further agree that, in the event of the commencement of bankruptcy proceedings by or against Consultant under the Code, Appian shall be entitled to retain all of its rights under the Agreement.

9. **Restrictive Covenants**

Consultant acknowledges that Appian invests significant resources in the training and development of its employees and invests significant resources in the marketing to and development of its business opportunities. In light of these understandings, Consultant agrees that the following restrictions on Consultant's conduct are reasonably designed to protect Appian's legitimate business interests without unreasonably restricting Consultant's ability to seek or obtain work.

During the term of this Agreement, and for a period of twelve (12) months from the date this Agreement expires or is terminated, Consultant agrees (a) not to induce or solicit any Appian employee to terminate his or her employment or to seek or accept any employment with any other business entity that performs competing services; and (b) not to perform any services for a client for whom services were performed on behalf of Appian under this Agreement, provided that Consultant may be engaged by or provide services to a division of such a client that is not involved in any way as a user or beneficiary of deliverables from the Services.

10. Governing Law and Dispute Resolution.

10.1 Governing Law. The validity, construction, and interpretation of this Agreement shall be governed by the laws of the Commonwealth of Virginia, excluding its principles of conflict of laws, and the controlling laws of the United States of America, as applicable. This Agreement will not be governed by the United Nations Convention of Contracts for the International Sale of Goods, the application of which is hereby expressly excluded.

10.2 Arbitration. Any controversy or claim arising out of or relating to this Agreement, or the breach thereof, shall be settled by arbitration in the County of Fairfax, Virginia in accordance with the Rules of the American Arbitration Association ("AAA") by a single arbitrator to be designated by AAA, and judgment upon the decision rendered by the arbitrator may be entered in any court having jurisdiction thereof. Any decision by the arbitrator shall be final and binding, and except in cases of fraud or gross misconduct by the arbitrator, the decision rendered shall not be appealable. The prevailing Party in the arbitration proceeding shall be entitled to recover attorney's fees, all reasonable out-of-pocket costs and disbursements, as well as any and all charges which may be made for the arbitration's cost and the fees of the arbitrator. Notwithstanding the foregoing, either Party may seek preliminary equitable or injunctive relief from a court of competent jurisdiction to avoid irreparable harm resulting from or which may result from the other Party's breach or threatened breach of this Agreement.

11. **Notices**

Any notices or other communications required or permitted to be given or delivered under this shall be in writing and shall be sufficiently given if sent by first class certified mail, or overnight delivery service using a reputable courier service, postage prepaid to the following address or such other address as may be specified in a written notice delivered in accordance with this Section.

If to Appian:	If to Consultant:
Appian Corporation 7950 Jones Branch Drive McLean, VA 22182 Attention: Legal Department	Bill McCarthy 7413 Hasentree Club Drive Wake Forest, NC 27587

12. **General**

12.1 Waiver. The waiver by either Party of a breach or right under this Agreement will not constitute a waiver of any other or subsequent breach or right.

12.2 Severability. If any provision of this Agreement is found unenforceable, it and any related provisions will be interpreted to best accomplish the unenforceable provision's essential purpose.

12.3 Non-Assignability. Consultant may not assign its rights or delegate its duties under this Agreement, by operation of law or otherwise, without Appian's express prior written consent. Consultant may not subcontract any part of the Services to any third party without Appian's express prior written consent.

12.4 Entire Agreement. This Agreement and any Confidentiality Agreement, if applicable, are the entire agreement between Consultant and Appian regarding the subject matter hereof and supersede any prior or contemporaneous agreement, written or oral. This Agreement and any Confidentiality Agreement, if applicable, may be modified only by written agreement signed by the duly authorized representatives of Consultant and Appian. All section headings in this Agreement, and any Confidentiality Agreement, if applicable, are for convenience only and do not modify or restrict any of this Agreement's or Confidentiality Agreement's terms.

12.5 Public Announcements. Consultant agrees not to issue news releases, public announcements, or a statement or communication in an annual report or any other public forum concerning this Agreement without Appian's express prior written consent, except as may be required in reports filed pursuant to federal securities regulations.

12.6 Signature. Original signatures transmitted and received via facsimile or other electronic transmission of a scanned document, (e.g., .pdf or similar format) are true and valid signatures for all purposes hereunder and shall bind the Parties to the same extent as original signatures.

12.7 Survival. All provisions that by their terms or nature survive termination of this Agreement shall survive such termination.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the date last written below.

CONSULTANT

Signed: /s/ Bill McCarthy
Name: Bill McCarthy
Title:
Date: May 23, 2022

APPIAN CORPORATION

Signed: /s/ Matthew Calkins
Name: Matthew Calkins
Title: CEO
Date: May 27, 2022

Exhibit 31.1

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 Quarterly Report on Form 10-Q for the period ended June 30, 2022 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: August 4, 2022

/s/ Matthew Calkins
Matthew Calkins
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

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

I, Mark Matheos, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q for the period ended June 30, 2022 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: August 4, 2022

/s/ Mark Matheos
Mark Matheos
Chief Financial Officer
(Principal Financial Officer)

Exhibit 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

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 Matheos, Chief Financial Officer of the Company, each hereby certifies that, to the best of his knowledge:

1. The Company’s Quarterly Report on Form 10-Q for the period ended June 30, 2022, 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 4th day of August, 2022.

/s/ Matthew Calkins	/s/ Mark Matheos
Matthew Calkins	Mark Matheos
Chief Executive Officer (Principal Executive Officer)	Chief Financial Officer (Principal Financial Officer)

- This certification accompanies the Form 10-Q 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-Q), irrespective of any general incorporation language contained in such filing.