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 September 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 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 October 31, 2022, there were 41,049,803 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	
	September 30, 2022 (unaudited)	December 31, 2021
Assets		
Current assets		
Cash and cash equivalents	$ 51,802	$ 100,796
Short-term investments and marketable securities	40,885	55,179
Accounts receivable, net of allowance of $1,901 and $1,400, respectively	143,385	130,049
Deferred commissions, current	27,874	24,668
Prepaid expenses and other current assets	31,976	26,781
Restricted cash, current	2,053	791
Total current assets	297,975	338,264
Property and equipment, net of accumulated depreciation of $18,189 and $14,106, respectively	38,692	36,913
Long-term investments	—	12,044
Goodwill	24,045	27,795
Intangible assets, net of accumulated amortization of $2,131 and $1,260, respectively	5,139	7,144
Right-of-use assets for operating leases	31,841	27,897
Deferred commissions, net of current portion	51,526	49,017
Deferred tax assets	2,518	1,025
Restricted cash, net of current portion	—	2,373
Other assets	2,824	2,047
Total assets	$ 454,560	$ 504,519
Liabilities and Stockholders' Equity		
Current liabilities		
Accounts payable	$ 5,082	$ 5,766
Accrued expenses	12,710	15,483
Accrued compensation and related benefits	35,408	35,126
Deferred revenue, current	161,154	150,169
Operating lease liabilities, current	7,434	8,110
Other current liabilities	2,603	1,067
Total current liabilities	224,391	215,721
Operating lease liabilities, net of current portion	52,710	48,784
Deferred revenue, net of current portion	3,408	2,430
Deferred tax liabilities	153	209
Other non-current liabilities	956	3,458
Total liabilities	281,618	270,602
Stockholders' equity		
Class A common stock—par value $0.0001; 500,000,000 shares authorized and 41,043,099 shares issued and outstanding as of September 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 September 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	549,760	497,128
Accumulated other comprehensive loss	(2,790)	(5,687)
Accumulated deficit	(374,035)	(257,531)
Total stockholders' equity	172,942	233,917
Total liabilities and stockholders' equity	$ 454,560	$ 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 September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
Revenue				
Subscriptions	$ 86,520	$ 67,240	$ 246,908	$ 187,952
Professional services	31,356	25,177	95,297	76,319
Total revenue	117,876	92,417	342,205	264,271
Cost of revenue				
Subscriptions	9,313	7,092	26,065	19,806
Professional services	24,447	19,415	72,011	56,065
Total cost of revenue	33,760	26,507	98,076	75,871
Gross profit	84,116	65,910	244,129	188,400
Operating expenses				
Sales and marketing	54,912	42,071	157,104	118,575
Research and development	37,623	26,510	101,401	71,062
General and administrative	29,357	20,226	90,014	56,726
Total operating expenses	121,892	88,807	348,519	246,363
Operating loss	(37,776)	(22,897)	(104,390)	(57,963)
Other non-operating expense				
Other expense, net	5,876	2,329	12,815	4,141
Interest expense	89	72	222	233
Total other non-operating expense	5,965	2,401	13,037	4,374
Loss before income taxes	(43,741)	(25,298)	(117,427)	(62,337)
Income tax expense (benefit)	255	86	(924)	459
Net loss	$ (43,996)	$ (25,384)	$ (116,503)	$ (62,796)
Net loss per share:				
Basic and diluted	$ (0.61)	$ (0.36)	$ (1.61)	$ (0.89)
Weighted average common shares outstanding:				
Basic and diluted	72,503	71,119	72,372	70,936

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 September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Net loss	$ (43,996)	$ (25,384)	$ (116,503)	$ (62,796)
Comprehensive income (loss), net of income taxes				
Foreign currency translation adjustments	308	28	3,032	2,569
Unrealized gains (losses) on available-for-sale securities	59	—	(135)	31
Total other comprehensive loss, net of income taxes	$ (43,629)	$ (25,356)	$ (113,606)	$ (60,196)

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
Net loss	—	—	—	—	(43,996)	(43,996)
Issuance of common stock to directors	4,613	—	—	—	—	—
Vesting of restricted stock units	67,164	—	—	—	—	—
Exercise of stock options	24,604	—	175	—	—	175
Stock-based compensation expense	—	—	11,336	—	—	11,336
Other comprehensive income	—	—	—	367	—	367
Balance, September 30, 2022	72,540,895	$ 7	$ 549,760	$ (2,790)	$ (374,035)	$ 172,942

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, 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
Net loss	—	—	—	—	(25,384)	(25,384)
Issuance of common stock to directors	1,130	—	—	—	—	—
Vesting of restricted stock units	38,148	—	—	—	—	—
Exercise of stock options	46,960	—	286	—	—	286
Stock-based compensation expense	—	—	5,200	—	—	5,200
Other comprehensive loss	—	—	—	28	—	28
Balance, September 30, 2021	71,166,833	$ 7	$ 490,565	$ (2,410)	$ (231,686)	$ 256,476

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

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

	Nine Months Ended September 30,	
	2022	**2021**
Cash flows from operating activities		
Net loss	$ (116,503)	$ (62,796)
Adjustments to reconcile net loss to net cash used by operating activities		
Stock-based compensation	27,427	17,692
Depreciation and amortization	5,332	4,071
Bad debt expense	561	61
Loss on disposal of property and equipment	—	78
Change in fair value of available-for-sale securities	—	(31)
Deferred income taxes	(1,549)	(522)
Changes in assets and liabilities		
Accounts receivable	(9,114)	(10,005)
Prepaid expenses and other assets	(6,723)	2,734
Deferred commissions	(5,715)	(11,570)
Accounts payable and accrued expenses	(3,654)	10,797
Accrued compensation and related benefits	1,634	5,782
Other current and non-current liabilities	(383)	2,858
Deferred revenue	15,414	6,829
Operating lease liabilities	(685)	(476)
Net cash used by operating activities	(93,958)	(34,498)
Cash flows from investing activities		
Purchases of investments	(31,214)	—
Proceeds from investments	57,417	84,592
Payments for acquisitions, net of cash acquired	—	(30,729)
Purchases of property and equipment	(5,861)	(2,473)
Net cash provided by investing activities	20,342	51,390
Cash flows from financing activities		
Proceeds from exercise of common stock options	25,205	2,375
Net cash provided by financing activities	25,205	2,375
Effect of foreign exchange rate changes on cash, cash equivalents, and restricted cash	(1,694)	(1,367)
Net (decrease) increase in cash, cash equivalents, and restricted cash	(50,105)	17,900
Cash, cash equivalents, and restricted cash at beginning of period	103,960	112,462
Cash, cash equivalents, and restricted cash at end of period	$ 53,855	$ 130,362
Supplemental disclosure of cash flow information		
Cash paid for interest	$ 243	$ 240
Cash paid for income taxes	$ 749	$ 1,196
Supplemental disclosure of non-cash investing and financing activities		
Accrued capital expenditures	$ 317	$ —

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, India, Italy, Japan, Mexico, 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, amortization of developed technology, 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 providing services related to significant professional services agreements sold on a standalone basis may cause significant fluctuations in our quarterly financial results.

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. Revenue generated from government agencies represented 21.2% and 19.2% of our revenue for the three and nine months ended September 30, 2022, respectively, of which the top three U.S. federal government agencies generated 5.5% and 4.8% of our revenue for the three and nine months ended September 30, 2022, respectively. Additionally, 31.3% and 33.2% of our revenue during the three and nine months ended September 30, 2022, respectively, was generated from foreign customers. Revenue generated from government agencies represented 19.2% and 20.0% of our revenue for the three and nine months ended September 30, 2021, respectively, of which the top three U.S. federal government agencies generated 7.5% and 6.3% of our revenue for the three and nine months ended September 30, 2021, respectively. Additionally, 32.0% and 33.1% of our revenue during the three and nine months ended September 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"). We paid 25% of the balance on September 28, 2022, and the remaining 75% of the balance is 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			
	September 30, 2022	December 31, 2021	September 30, 2021	December 31, 2020
Cash and cash equivalents	$ 51,802	$ 100,796	$ 127,122	$ 112,462
Restricted cash, current	2,053	791	—	—
Restricted cash, net of current portion	—	2,373	3,240	—
Total cash, cash equivalents, and restricted cash	$ 53,855	$ 103,960	$ 130,362	$ 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 $1.9 million and $1.4 million as of September 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 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 $9.5 million and $26.5 million for the three and nine months ended September 30, 2022, respectively. Commission expense was $8.2 million and $22.5 million for the three and nine months ended September 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

Refer to Note 11 for a detailed discussion on our policies related to stock-based compensation.

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 nine months ended September 30, 2022 and 2021 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
Cloud subscriptions	$ 60,621	$ 46,699	$ 171,083	$ 128,238
Term license subscriptions	19,773	15,114	58,543	44,290
Maintenance and support	6,126	5,427	17,282	15,424
Total subscriptions	86,520	67,240	246,908	187,952
Professional services	31,356	25,177	95,297	76,319
Total revenue	$ 117,876	$ 92,417	$ 342,205	$ 264,271

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. The majority of our contracts are 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 term 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 contracts 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 nine months ended September 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 September 30, 2022 and December 31, 2021, contract assets of $15.3 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 nine months ended September 30, 2022, we recognized $134.4 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 September 30, 2022, we had an aggregate transaction price of $319.9 million allocated to unsatisfied performance obligations. We expect to recognize $209.6 million of this balance as revenue over the next 12 months with the remaining amount recognized thereafter.

4. Leases

As of September 30, 2022, our lease portfolio consists entirely of operating leases, most of which are for corporate offices. Our operating leases have remaining lease terms with various expiration dates through 2031, and some leases include options to extend the term 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 nine months ended September 30, 2022 and 2021 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Operating lease cost	$ 1,708	$ 1,659	$ 4,968	$ 4,984
Short-term lease cost	170	23	334	77
Variable lease cost	952	947	2,878	1,744
Total	$ 2,830	$ 2,629	$ 8,180	$ 6,805

Supplemental Lease Information

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

	As of	
	September 30, 2022	December 31, 2021
Right-of-use assets for operating leases	$ 31,841	$ 27,897
Operating lease liabilities, current	$ 7,434	$ 8,110
Operating lease liabilities, net of current portion	52,710	48,784
Total operating lease liabilities	$ 60,144	$ 56,894
Weighted average remaining lease term (in years)	9.0	9.5
Weighted average discount rate	9.5 %	9.5 %

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Operating cash outflows for operating leases	$ 2,099	$ 1,792	$ 6,258	$ 5,295
Amortization of operating lease ROU assets	364	685	995	1,380
Interest expense on operating lease liabilities	1,332	521	3,957	1,448

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

	Operating Leases
2022 (excluding the nine months ended September 30, 2022)	$ 2,040
2023	8,367
2024	9,464
2025	10,202
2026	10,603
2027	10,892
Thereafter	44,762
Total lease payments	96,330
Less: imputed interest	(36,186)
Total	$ 60,144

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 was based upon the fair value of the assets acquired and liabilities assumed. 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.

During the third quarter of 2022, we finalized the fair value of the assets acquired and liabilities assumed in the acquisition, and the amounts presented above are now final. Measurement period adjustments, recorded during the first quarter of 2022, 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 nine months ended September 30, 2022.

6. Goodwill and Intangible Assets

Goodwill was comprised of the following as of September 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	(3,750)
Balance as of September 30, 2022	$ 24,045

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

	As of	
	September 30, 2022	December 31, 2021
Developed technology	$ 6,290	$ 7,271
Customer relationships - Non-Robotic Process Automation ("RPA")	754	872
Customer relationships - RPA	226	261
Intangible assets, gross	7,270	8,404
Less: accumulated amortization	(2,131)	(1,260)
Intangible assets, net	$ 5,139	$ 7,144

Intangible amortization expense was $0.4 million and $1.1 million for the three and nine months ended September 30, 2022, respectively. Intangible amortization expense was $0.3 million and $0.5 million for the three and nine months ended September 30, 2021, respectively. As of September 30, 2022, the weighted average remaining amortization periods for developed technology, non-RPA customer relationships, and RPA customer relationships were approximately 3.7 years, 8.7 years, and 7.3 years, respectively.

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

	Projected Amortization
2022 (excluding the nine months ended September 30, 2022)	$ 347
2023	1,342
2024	1,342
2025	1,068
2026	687
2027	84
Thereafter	269
Total projected amortization expense	$ 5,139

7. Property and Equipment, net

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

	September 30, 2022	December 31, 2021
Leasehold improvements	$ 43,308	$ 41,005
Office furniture and fixtures	3,224	2,536
Computer hardware	8,761	6,001
Computer software	1,353	1,353
Equipment	235	124
Property and equipment, gross	56,881	51,019
Less: accumulated depreciation	(18,189)	(14,106)
Property and equipment, net	$ 38,692	$ 36,913

Depreciation expense totaled $1.4 million and $4.2 million for the three and nine months ended September 30, 2022, respectively. Depreciation expense totaled $1.2 million and $3.6 million for the three and nine months ended September 30, 2021, respectively. We had no disposals or retirements and recorded no gains or losses on disposal during each of the three and nine months ended September 30, 2022. We recorded $0.1 million in losses on disposal for the three and nine months ended September 30, 2021.

8. Accrued Expenses

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

	September 30, 2022	December 31, 2021
Hosting costs	$ 2,917	$ 1,995
Legal costs	966	5,511
Marketing and tradeshow expenses	744	1,167
Third party license fees	1,821	1,066
Contract labor costs	1,453	891
Reimbursable employee expenses	1,246	870
Taxes payable	542	550
Audit and tax expenses	539	439
Capital expenditures	—	379
Other accrued expenses	2,482	2,615
Total	$ 12,710	$ 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 September 30, 2022. As of September 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.

Senior Secured Credit Facilities Credit Agreement

On November 3, 2022, we entered into a new Senior Secured Credit Facilities Credit Agreement (the “Credit Agreement”) which provides for a five-year term loan facility in an aggregate principal amount of $100.0 million and, in addition, up to $50.0 million for a revolving credit facility, including a letter of credit sub-facility in the aggregate availability amount of $15.0 million and a swingline sub-facility in the aggregate availability amount of $10.0 million (as a sublimit of the revolving loan facility). The new Credit Agreement matures on November 3, 2027. We will use the proceeds from the $100.0 million term loan to fund the continued growth of our business and support our working capital requirements.

Under the agreement, we may elect whether amounts drawn bear interest on the outstanding principal amount at a rate per annum equal to either a) the higher of the Prime rate or the Federal Funds Effective (“Base Rate”) rate plus 0.5%, or b) the forward-looking term rate based on the secured overnight financing rate (“Term SOFR”). An additional interest rate margin is added to the elected interest rates. During the first three years of the Credit Agreement, the additional interest rate margin ranges from 1.5% to 2.5% in the case of Base Rate advances and from 2.5% to 3.5% in the case of Term SOFR advances, depending on our debt to recurring revenue leverage ratio. During the final two years of the Credit Agreement, the interest rate margin ranges from 0.5% to 2.5% in the case of Base Rate advances and from 1.5% to 3.5% in the case of Term SOFR advances, depending on our debt to consolidated adjusted EBITDA (as defined in the Credit Agreement) leverage ratio.

Additionally, the Credit Agreement contains customary representations, warranties and covenants, including covenants by us limiting additional indebtedness, guaranties, liens, fundamental changes, mergers and consolidations, dispositions of assets, investments, paying dividends on capital stock or redeeming, repurchasing or retiring capital stock, or prepaying certain junior indebtedness and preferred stock, certain corporate changes, and transactions with affiliates. The Credit Agreement also provides for events of default customary for term loans of this type, including but not limited to non-payment, breaches or defaults in the performance of covenants, insolvency, bankruptcy, and the occurrence of a material adverse effect on us.

The new Credit Agreement replaces our existing Line of Credit that was in place as of September 30, 2022.

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 nine months ended September 30, 2022, the actual effective tax rates were (0.6)% and 0.8%, respectively. For the three and nine months ended September 30, 2021, the actual effective tax rates were (0.3)% and (0.7)%, respectively. The-year-to date tax benefit for the nine months ended September 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 September 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 September 30, 2022, there were 7,195,049 shares of Class A common stock reserved for issuance under the 2017 Plan, of which 2,851,988 were available to be issued.

Stock-Based Compensation Expense

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.

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 derive an estimate, 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 the historical volatility of our publicly traded stock over the estimated expected term of the stock options. We assume zero dividend yield because we have historically not paid dividends and do not anticipate paying dividends in the near future.

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.

No stock options were issued during the three months ended September 30, 2022 and 2021. The only stock option awarded during the nine months ended September 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 September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Risk-free interest rate	*	*	3.01%	*
Expected term (in years)	*	*	**	*
Expected volatility	*	*	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 nine months ended September 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	(902,392)	27.93		31,790
Expired	(6,800)	3.65		
Forfeited	(10,280)	12.28		
Outstanding at September 30, 2022	2,733,884	$ 20.07	5.3	$ 63,622
Exercisable at September 30, 2022	2,033,684	$ 9.55	3.8	$ 63,618

The total fair value of stock options that vested during the nine months ended September 30, 2022 and 2021 was $0.9 million and $10.7 million, respectively. As of September 30, 2022, the total compensation cost related to unvested stock options not yet recognized, which relates exclusively to the 2022 CEO Grant, was $17.2 million and will be recognized over a weighted average period of 3.4 years.

Restricted Stock Units

The following table summarizes RSU activity for the nine months ended September 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	534,213	52.93
Vested	(166,836)	74.30
Forfeited	(157,732)	73.54
Non-vested and outstanding at September 30, 2022	1,419,174	$ 63.52

As of September 30, 2022, total unrecognized compensation cost related to unvested RSUs was approximately $68.2 million, which will be recognized over a weighted average period of 1.7 years.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
RSUs	$ 9,845	$ 4,997	$ 25,378	$ 13,405
Stock options	1,272	47	1,517	3,820
Common stock awards to the Board of Directors	219	156	532	467
Total stock-based compensation expense	$ 11,336	$ 5,200	$ 27,427	$ 17,692

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 nine months ended September 30, 2022 and 2021 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Cost of revenue				
Subscriptions	$ 284	$ 381	$ 712	$ 973
Professional services	1,401	777	3,788	2,283
Operating expenses				
Sales and marketing	2,667	1,448	6,721	3,753
Research and development	3,454	1,263	8,831	3,347
General and administrative	3,530	1,331	7,375	7,336
Total stock-based compensation expense	$ 11,336	$ 5,200	$ 27,427	$ 17,692

12. Basic and Diluted Loss per Share

Basic net loss per share is computed by dividing net loss by the weighted average number of common shares outstanding during the reporting period. Diluted loss per share 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 is calculated using the treasury stock method. As we reported net losses for all periods presented, all outstanding shares would be considered antidilutive 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 Nine Months Ended September 30,	
	2022	2021
Stock options	2,733,884	3,039,860
Non-vested restricted stock units	1,419,174	1,235,880

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 nine months ended September 30, 2022 totaled $9.0 million and $24.8 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 $2.036 billion in damages for misappropriation of our trade secrets and $1 in damages for violating the Virginia Computer Crimes Act. Pegasystems filed several post-trial motions seeking 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. All of these motions were denied, and final judgment was entered by the Court on September 15, 2022. The final judgment reaffirmed the $2.036 billion in damages and also ordered Pegasystems to pay Appian $23.6 million in attorney's fees associated with the case as well as statutory post-judgment interest on the judgment at an annual rate of 6%, or approximately $122.0 million per year.

Defendant Youyong Zou has satisfied the judgment of $5,000 (plus interest) against him in lieu of appealing that judgment. On September 15, 2022, Pegasystems filed a notice of appeal. Pegasystems is not required to pay us the judgment, attorney's fees, or post-judgment interest until all appeals are exhausted. We cannot predict the outcome of any appeals or the time it will take to resolve them. Consistent with other judgments, there is no guarantee we will be able to collect all or any portion of the judgment. Consequently, we will not record the award in our condensed consolidated financial statements until all contingencies are resolved and 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. 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.

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 nine months ended September 30, 2022 and 2021 (in thousands):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Domestic	$ 81,004	$ 62,815	$ 228,610	$ 176,801
International	36,872	29,602	113,595	87,470
Total	$ 117,876	$ 92,417	$ 342,205	$ 264,271

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 nine months ended September 30, 2022 or 2021. Substantially all of our long-lived assets were held in the United States as of September 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 and which require us to develop our own estimates and assumptions reflecting 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 September 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; and
- 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 September 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 September 30, 2022 are as follows (in thousands):

	As of September 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
Money market fund	Level 1	$ 149	$ —	$ 149	$ 149	$ —
U.S. Treasuries	Level 1	17,985	(70)	17,915	—	17,915
Commercial paper	Level 2	13,134	—	13,134	—	13,134
Corporate bonds	Level 2	9,923	(87)	9,836	—	9,836
Total investments		$ 41,191	$ (157)	$ 41,034	$ 149	$ 40,885

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 nine months ended September 30, 2022 and 2021. Additionally, there were no transfers between Levels 1 and 2 during the three and nine months ended September 30, 2022 and 2021.

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

	As of September 30, 2022	
	Cost Basis	Fair Value
Due in one year or less	$ 41,191	$ 41,034
Due after one year through five years	—	—
Total investments	$ 41,191	$ 41,034

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. Forward-looking statements should not be relied on 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 21.2% and 19.2% of our total revenue for the three and nine months ended September 30, 2022, respectively. This compares to revenue from government agencies of 19.2% and 20.0% of our total revenue in the three and nine months ended September 30, 2021, respectively. No single end-customer accounted for more than 10% of our total revenue in the three and nine months ended September 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 nine months ended September 30, 2022, 31.3% and 33.2%, respectively, of our total revenue was generated from customers outside of the United States as compared to 32.0% and 33.1% in the three and nine months ended September 30, 2021, respectively. As of September 30, 2022, we operated in 15 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, 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. 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 nine months ended September 30, 2022 and 2021, 72.2% and 71.1% of our revenue, respectively, was derived from sales of subscriptions while the remaining 27.8% and 28.9%, 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 September 30,			Nine Months Ended September 30,		
	2022	2021	% Change	2022	2021	% Change
Cloud subscription revenue	$ 60,621	$ 46,699	30 %	$ 171,083	$ 128,238	33 %

Cloud subscription revenue includes cloud subscriptions bundled with maintenance and support and hosting services. 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 September 30,	
	2022	2021
Cloud subscription revenue retention rate	115 %	117 %

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

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.

Revenue

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 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, amortization of developed technology, 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 providing services related to 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.

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. In 2021, we had a lower usage of subcontractors and performed fewer in-person professional services engagements and deployments, both of which reduced certain classes of expenses and improved professional services margins. In 2022, these margins have declined but remain subject to fluctuation based on the factors discussed above.

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, software 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, we 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, and bad debt expenses.

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 September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Revenue				
Subscriptions	$ 86,520	$ 67,240	$ 246,908	$ 187,952
Professional services	31,356	25,177	95,297	76,319
Total revenue	117,876	92,417	342,205	264,271
Cost of revenue				
Subscriptions[1]	9,313	7,092	26,065	19,806
Professional services[1]	24,447	19,415	72,011	56,065
Total cost of revenue	33,760	26,507	98,076	75,871
Gross profit	84,116	65,910	244,129	188,400
Operating expenses				
Sales and marketing[1]	54,912	42,071	157,104	118,575
Research and development[1]	37,623	26,510	101,401	71,062
General and administrative[1]	29,357	20,226	90,014	56,726
Total operating expenses	121,892	88,807	348,519	246,363
Operating loss	(37,776)	(22,897)	(104,390)	(57,963)
Other non-operating expense				
Other expense, net	5,876	2,329	12,815	4,141
Interest expense	89	72	222	233
Total other non-operating expense	5,965	2,401	13,037	4,374
Loss before income taxes	(43,741)	(25,298)	(117,427)	(62,337)
Income tax expense (benefit)	255	86	(924)	459
Net loss	$ (43,996)	$ (25,384)	$ (116,503)	$ (62,796)

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

	Three Months Ended September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021
Cost of revenue				
Subscriptions	$ 284	$ 381	$ 712	$ 973
Professional services	1,401	777	3,788	2,283
Operating expenses				
Sales and marketing	2,667	1,448	6,721	3,753
Research and development	3,454	1,263	8,831	3,347
General and administrative	3,530	1,331	7,375	7,336
Total stock-based compensation expense	$ 11,336	$ 5,200	$ 27,427	$ 17,692

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
Revenue				
Subscriptions	73.4 %	72.8 %	72.2 %	71.1 %
Professional services	26.6	27.2	27.8	28.9
Total revenue	100.0	100.0	100.0	100.0
Cost of revenue				
Subscriptions	7.9	7.7	7.6	7.5
Professional services	20.7	21.0	21.0	21.2
Total cost of revenue	28.6	28.7	28.7	28.7
Gross profit	71.4	71.3	71.3	71.3
Operating expenses				
Sales and marketing	46.6	45.5	45.9	44.9
Research and development	31.9	28.7	29.6	26.9
General and administrative	24.9	21.9	26.3	21.5
Total operating expenses	103.4	96.1	101.8	93.2
Operating loss	(32.0)	(24.8)	(30.5)	(21.9)
Other non-operating expense				
Other expense, net	5.0	2.5	3.7	1.6
Interest expense	0.1	0.1	0.1	0.1
Total other non-operating expense	5.1	2.6	3.8	1.7
Loss before income taxes	(37.1)	(27.4)	(34.3)	(23.6)
Income tax expense (benefit)	0.2	0.1	(0.3)	0.2
Net loss	(37.3)%	(27.5)%	(34.0)%	(23.8)%

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

Revenue

	Three Months Ended September 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Revenue				
Subscriptions	$ 86,520	$ 67,240	$ 19,280	28.7 %
Professional services	31,356	25,177	6,179	24.5
Total revenue	$ 117,876	$ 92,417	$ 25,459	27.5 %

Total revenue increased $25.5 million, or 27.5%, in the three months ended September 30, 2022 compared to the same period in 2021 due to an increase in our subscriptions revenue of $19.3 million and an increase in our professional services revenue of $6.2 million. The increase in subscriptions revenue was driven by a $13.9 million increase in cloud subscription revenue, a $4.7 million increase in on-premises subscription revenue, and a $0.7 million increase in maintenance and support revenue. With respect to new versus existing customers, there was a $14.1 million increase in subscriptions revenue stemming from expanded deployments and corresponding sales of additional subscriptions to existing customers while $5.1 million of the increase was the result of sales of subscriptions to new customers. The increase in professional services revenue was due primarily to a $5.2 million increase in sales to new customers, coupled with a $0.9 million increase in revenue from existing customers.

Cost of Revenue

	Three Months Ended September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Cost of revenue				
Subscriptions	$ 9,313	$ 7,092	$ 2,221	31.3 %
Professional services	24,447	19,415	5,032	25.9
Total cost of revenue	$ 33,760	$ 26,507	$ 7,253	27.4 %
Subscriptions gross margin	89.2 %	89.5 %		
Professional services gross margin	22.0 %	22.9 %		
Total gross margin	71.4 %	71.3 %		

Cost of revenue increased $7.3 million, or 27.4%, in the three months ended September 30, 2022 compared to the same period in 2021, primarily due to a $3.7 million increase in professional services and product support personnel costs, a $1.5 million increase in hosting costs, a $1.3 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 15.9% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits, coupled with a $0.5 million increase in stock-based compensation expense. Hosting costs increased as sales of our cloud offering increased in the three months ended September 30, 2022. Contractor costs increased in the three months ended September 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 slightly decreased to 89.2% for the three months ended September 30, 2022 compared to 89.5% in the same period in 2021 due to increased hosting costs as sales of our cloud offering increased. However, this increase in hosting costs was partially offset by an increase in subscriptions revenue during the three months ended September 30, 2022 as compared to the three months ended September 30, 2021. Professional services gross margin decreased to 22.0% for the three months ended September 30, 2022 compared to 22.9% 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 September 30, 2021 as compared to the three months ended September 30, 2022 led to temporarily improved margins in the prior year. Gross margin increased slightly to 71.4% for the three months ended September 30, 2022 compared to 71.3% for the three months ended September 30, 2021.

Sales and Marketing Expense

	Three Months Ended September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Sales and marketing	$ 54,912	$ 42,071	$ 12,841	30.5 %
% of revenue	46.6 %	45.5 %		

Sales and marketing expense increased $12.8 million, or 30.5%, in the three months ended September 30, 2022 compared to the same period in 2021, primarily due to a $8.4 million increase in sales and marketing personnel costs, a $5.0 million increase in overhead costs, and a $0.4 million increase in marketing costs, which were partially offset by a $0.9 million decrease in professional fees. Personnel costs increased due to an increase in sales and marketing personnel headcount of 24.5% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits, a $1.3 million increase in commissions expense due to increased sales, and a $1.2 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 expense increased due to a higher number of in-person engagements and events as compared to the prior year. Marketing costs increased due to an increase in advertising expense stemming from an increase in the number of advertising campaigns launched in the three months ended September 30, 2022 relative to the three months ended September 30, 2021. 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 September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Research and development	$ 37,623	$ 26,510	$ 11,113	41.9 %
% of revenue	31.9 %	28.7 %		

Research and development expense increased $11.1 million, or 41.9%, in the three months ended September 30, 2022 compared to the same period in 2021, primarily due to a $9.3 million increase in research and development personnel costs, a $1.4 million increase in overhead costs, and a $0.4 million increase in professional fees. Personnel costs increased due to an increase in research and development personnel headcount of 25.6% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits, coupled with a $2.2 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 September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
General and administrative expense	$ 29,357	$ 20,226	$ 9,131	45.1 %
% of revenue	24.9 %	21.9 %		

General and administrative expense increased $9.1 million, or 45.1%, in the three months ended September 30, 2022 compared to the same period in 2021, primarily due to a $6.6 million increase in general and administrative personnel costs and a $2.8 million increase in overhead costs, both of which were partially offset by a $0.3 million decrease in professional fees. Personnel costs increased due to an increase in general and administrative personnel headcount of 38.2% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits, as well as a $2.2 million increase in stock-based compensation expense. 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. Professional fees decreased due to a $2.1 million decline in legal fees incurred relative to the three months ended September 30, 2021, which was substantially offset by a $1.7 million increase in consulting fees.

Other Non-Operating Expense, Net

	Three Months Ended September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Other expense, net	$ 5,876	$ 2,329	$ 3,547	***
% of revenue	5.0 %	2.5 %		

*** Indicates a percentage that is not meaningful.

Other expense, net was $5.9 million in the three months ended September 30, 2022 compared to other expense, net of $2.3 million in the three months ended September 30, 2021. This change was primarily due to $6.1 million in foreign exchange losses in the three months ended September 30, 2022 as compared to $2.3 million in foreign exchange losses in the three months ended September 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 September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Interest expense	$ 89	$ 72	$ 17	23.6 %
% of revenue	0.1 %	0.1 %		

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

Comparison of the Nine Months Ended September 30, 2022 and 2021

Revenue

	Nine Months Ended September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Revenue				
Subscriptions	$ 246,908	$ 187,952	$ 58,956	31.4 %
Professional services	95,297	76,319	$ 18,978	24.9 %
Total revenue	$ 342,205	$ 264,271	$ 77,934	29.5 %

Total revenue increased $77.9 million, or 29.5%, in the nine months ended September 30, 2022 compared to the same period in 2021 due to an increase in our subscriptions revenue of $59.0 million and an increase in our professional services revenue of $19.0 million. The increase in subscriptions revenue was driven largely by a $42.8 million increase in cloud subscription revenue, a $14.3 million increase in on-premises subscription revenue, and a $1.9 million increase in maintenance and support revenue. With respect to new versus existing customers, there was a $46.4 million increase in subscriptions revenue stemming from expanded deployments and corresponding sales of additional subscriptions to existing customers while $12.3 million of the increase was the result of sales of subscriptions to new customers. The increase in professional services revenue was due primarily to a $14.8 million increase in sales to new customers, in addition to a $4.2 million increase in revenue from existing customers.

Cost of Revenue

	Nine Months Ended September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Cost of revenue				
Subscriptions	$ 26,065	$ 19,806	$ 6,259	31.6 %
Professional services	72,011	56,065	$ 15,946	28.4 %
Total cost of revenue	$ 98,076	$ 75,871	$ 22,205	29.3 %
Subscriptions gross margin	89.4 %	89.5 %		
Professional services gross margin	24.4 %	26.5 %		
Total gross margin	71.3 %	71.3 %		

Cost of revenue increased $22.2 million, or 29.3%, in the nine months ended September 30, 2022 compared to the same period in 2021, primarily due to a $13.6 million increase in professional services and product support personnel costs, a $4.0 million increase in hosting costs, a $2.2 million increase in contractor costs, a $1.2 million increase in travel and entertainment expenses, and a $1.2 million increase in overhead costs. Personnel costs increased due to an increase in professional services and product support personnel headcount of 15.9% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits, coupled with a $1.2 million increase in stock-based compensation. Hosting costs increased as sales of our cloud offering increased in the nine months ended September 30, 2022. Contractor costs increased in the nine months ended September 30, 2022 compared to the same period in 2021 due to an increase in the usage of subcontractors and consultants for professional services engagements. Travel and entertainment expenses increased due to a larger number of in-person engagements, events, and other business-related traveling. 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 was 89.4% for nine months ended September 30, 2022 as compared to 89.5% for the nine months ended September 30, 2021. Revenue from our cloud offering increased and became a larger proportion of our overall subscriptions revenue. However, the increase in revenue was offset by increased hosting costs. Professional services gross margin decreased to 24.4% for the nine months ended September 30, 2022 compared to 26.5% 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 nine months ended September 30, 2021 as compared to the nine months ended September 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 the nine months ended September 30, 2022 and 2021.

Sales and Marketing Expense

	Nine Months Ended September 30,			
	2022	2021	$ Change	% Change
	(dollars in thousands)			
Sales and marketing	$ 157,104	$ 118,575	$ 38,529	32.5 %
% of revenue	45.9 %	44.9 %		

Sales and marketing expense increased $38.5 million, or 32.5%, in the nine months ended September 30, 2022 compared to the same period in 2021, primarily due to a $23.4 million increase in sales and marketing personnel costs, an $11.3 million increase in overhead costs, and a $5.5 million increase in marketing costs, which were partially offset by a $1.6 million decrease in professional fees. Personnel costs increased due to an increase in sales and marketing personnel headcount of 24.5% from September 30, 2021 to September 30, 2022, in addition to increased wages and fringe benefits, increased sales commissions driven by our revenue growth, and a $3.0 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. 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 nine months ended September 30, 2022 as compared to the nine months ended September 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

	Nine Months Ended September 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Research and development	$ 101,401	$ 71,062	$ 30,339	42.7 %
% of revenue	29.6 %	26.9 %		

Research and development expense increased $30.3 million, or 42.7%, in the nine months ended September 30, 2022 compared to the same period in 2021, primarily due to a $25.1 million increase in research and development personnel costs, a $3.9 million increase in overhead costs, and a $1.3 million increase in professional fees. Personnel costs increased due to an increase in research and development personnel headcount of 25.6% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits, coupled with a $5.5 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

	Nine Months Ended September 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
General and administrative expense	$ 90,014	$ 56,726	$ 33,288	58.7 %
% of revenue	26.3 %	21.5 %		

General and administrative expense increased $33.3 million, or 58.7%, in the nine months ended September 30, 2022 compared to the same period in 2021, primarily due to a $16.6 million increase in professional fees, an $8.8 million increase in overhead costs, and a $7.8 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 rights 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 38.2% from September 30, 2021 to September 30, 2022 in addition to increased wages and fringe benefits.

Other Non-Operating Expense, Net

	Nine Months Ended September 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Other expense, net	$ 12,815	$ 4,141	$ 8,674	***
% of revenue	3.7 %	1.6 %		

*** Indicates a percentage that is not meaningful.

Other expense, net was $12.8 million in the nine months ended September 30, 2022 compared to other expense, net of $4.1 million in the nine months ended September 30, 2021. This change was primarily due to $14.5 million in foreign exchange losses in the nine months ended September 30, 2022 as compared to $4.3 million in foreign exchange losses in the nine months ended September 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

	Nine Months Ended September 30,		$ Change	% Change
	2022	2021		
	(dollars in thousands)			
Interest expense	$ 222	$ 233	$ (11)	(4.7)%
% of revenue	0.1 %	0.1 %		

Interest expense decreased by a nominal amount in the nine months ended September 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 September 30, 2022 and December 31, 2021:

	As of	
	September 30, 2022	December 31, 2021
Cash and cash equivalents	$ 51,802	$ 100,796
Short-term investments and marketable securities	40,885	55,179
Property and equipment, net	38,692	36,913
Long-term investments	—	12,044
Working capital*	71,531	121,752

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

As of September 30, 2022, we had $51.8 million of cash and cash equivalents and $40.9 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 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.

As of September 30, 2022, we had a $20.0 million revolving line of credit with a lender, and as of that date, we had no outstanding borrowings and were in compliance with all covenants.

To further help strengthen our financial position and support our growth initiatives, on November 3, 2022, we entered into a new Senior Secured Credit Facilities Credit Agreement (the “Credit Agreement”) which provides for a five-year term loan facility in an aggregate principal amount of $100.0 million and, in addition, up to $50.0 million for a revolving credit facility, including a letter of credit sub-facility in the aggregate availability amount of $15.0 million and a swingline sub-facility in the aggregate availability amount of $10.0 million (as a sublimit of the revolving loan facility). The new Credit Agreement matures on November 3, 2027. We will use the proceeds from the $100.0 million term loan to fund the continued growth of our business and support our working capital requirements. The new Credit Agreement replaces our existing Line of Credit that was in place as of September 30, 2022.

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 new revolving credit facility, 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.

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 and purchases of short-term investments. Non-operating cash uses in the prior year through September 30, 2021 consisted primarily of the acquisition of Lana Labs and 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 nine months ended September 30, 2022 totaled $24.8 million.

Historical Cash Flows

	Nine Months Ended September 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	(116,503)	(62,796)	(53,707)	85.5
Stock-based compensation and other non-cash adjustments	31,771	21,349	10,422	48.8
Changes in working capital	(9,226)	6,949	(16,175)	***
Net cash used by operating activities	(93,958)	(34,498)	(59,460)	***
Investing activities:				
Net cash provided by investing activities	20,342	51,390	(31,048)	(60.4)
Financing activities:				
Net cash provided by financing activities	25,205	2,375	22,830	***
Effect of exchange rates	(1,694)	(1,367)	(327)	23.9
Net change in cash	(50,105)	17,900	(68,005)	***
Ending cash, cash equivalents, and restricted cash	$ 53,855	$ 130,362	$ (76,507)	(58.7)%

*** Indicates a percentage that is not meaningful.

Operating Activities

Net cash used by operating activities was $94.0 million for the nine months ended September 30, 2022 as compared to $34.5 million used by operating activities for the nine months ended September 30, 2021. The increase in net cash used by operating activities was primarily due to a $53.7 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 nine months ended September 30, 2022 was attributed to a decline in cash flows from working capital of $16.2 million. This change in working capital is comprised primarily of a $14.5 million decrease in accounts payable and accrued expenses due to timing, a $9.5 million increase in prepaid expenses and other assets driven by higher prepayments under the AWS cloud hosting arrangement, and a $3.2 million decrease in other current and non-current liabilities due in part to the decrease in the escrow liability related to the Lana Labs acquisition.

Investing Activities

Net cash provided by investing activities was $20.3 million for the nine months ended September 30, 2022 as compared to $51.4 million provided by investing activities for the nine months ended September 30, 2021. Net cash provided by investing activities was primarily impacted by $31.2 million increase in purchases of investments during the nine months ended September 30, 2022, a $3.4 million increase in capital expenditures, and a $27.2 million decrease in proceeds from the sale of investments. Partially offsetting these increases was a $30.7 million decrease in payments for business acquisitions due to the August 2021 acquisition of Lana Labs.

Financing Activities

Net cash provided by financing activities was $25.2 million for the nine months ended September 30, 2022 as compared to $2.4 million provided by financing activities for the nine months ended September 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 nine months ended September 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.

Interest Rate Risk

We had total cash, cash equivalents, and restricted cash of $53.9 million as of September 30, 2022, which consisted of a money market fund, cash in readily available checking accounts, and overnight repurchase investments. These instruments, 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 September 30, 2022, we held $40.9 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 September 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 September 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 nine months ended September 30, 2022 would have impacted our total revenue by approximately 3% and operating loss by approximately 2%. 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 September 30, 2022. Based on the evaluation of our disclosure controls and procedures as of September 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 June 30, 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.)*. On May 10, 2022, we announced the jury 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 several post-trial motions seeking 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. All of these motions were denied, and final judgment was entered by the Court on September 15, 2022. The final judgment reaffirmed the $2.036 billion in damages and also ordered Pegasystems to pay Appian $23.6 million in attorney's fees associated with the case as well as statutory post-judgment interest on the judgment at an annual rate of 6%, or approximately $122.0 million per year. Defendant Youyong Zou has satisfied the judgment of $5,000 (plus interest) against him in lieu of appealing that judgment. On September 15, 2022, Pegasystems filed a notice of appeal. Pegasystems is not required to pay us the judgment, attorney's fees, or post-judgment interest until all appeals are exhausted. 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.

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 were false and/or misleading. We also made a claim for defamation against Pegasystems based on public statements by Pegasystems' executives. The Court issued a summary judgment ruling on September 30, 2022, granting in part and denying in part each party's motions, and narrowing the damages and claims in the case. The Court also set a trial on each party's claims for January 2023. 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)]
July 1 to July 31, 2022	3,885	$	51.00	3,885	956,130
August 1 to August 31, 2022	4,036	$	54.00	4,036	952,094
September 1 to September 30, 2022	4,939	$	42.98	4,939	947,155
Total	12,860	$	48.86	12,860	947,155

(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 purposes of providing disclosure under various items of Form 8-K.

Item 1.01 Entry into a Material Definitive Agreement

Senior Secured Credit Facilities Credit Agreement

On November 3, 2022, we entered into a Senior Secured Credit Facilities Credit Agreement (the "Credit Agreement") with the several banks and other financial institutions or entities from time to time parties to the Credit Agreement, as lenders (collectively, referred to as the "Lender"), and Silicon Valley Bank, as administrative agent and collateral agent for the Lender (in such capacity, the "Agent") that replaces our existing Third Amended and Restated Loan and Security Agreement dated as of November 1, 2017, as amended by that certain First Loan Modification Agreement dated as of December 30, 2021, and as further amended by that certain Second Loan Modification Agreement dated as of January 28, 2022 (and as further amended, restated, supplemented, or otherwise modified from time to time prior to the day hereof, the "Original Loan Agreement").

The Credit Agreement provides for a five-year term loan facility in an aggregate principal amount of $100.0 million and up to $50.0 million for a revolving credit facility, including a letter of credit sub-facility in the aggregate availability amount of $15.0 million and a swingline sub-facility in the aggregate availability amount of $10.0 million (as a sublimit of the revolving loan facility). We will use the facility for funding general corporate purposes and working capital.

Under the Credit Agreement, we may elect whether amounts drawn bear interest on the outstanding principal amount at a rate per annum equal to either (a) the higher of the Prime rate or the Federal Funds Effective ("Base Rate") rate plus 0.5%, or (b) the forward-looking term rate based on the secured overnight financing rate ("Term SOFR"), plus a margin. During the first three years of the Credit Agreement, the additional interest rate margin ranges from 1.5% to 2.5% in the case of Base Rate advances and from 2.5% to 3.5% in the case of Term SOFR advances, depending on our debt to recurring revenue leverage ratio. During the final two years of the Credit Agreement, the interest rate margin ranges from 0.5% to 2.5% in the case of Base Rate advances and from 1.5% to 3.5% in the case of Term SOFR advances, depending on our debt to Consolidated Adjusted EBITDA (as defined in the Credit Agreement) leverage ratio. Our obligations are secured on a senior lien basis by a security interest, in all of our right, title, and interest in, to and under substantially all of our assets, including our intellectual property, subject to limited exceptions, including permitted liens.

The Credit Agreement contains customary representations, warranties and covenants, including covenants by us limiting additional indebtedness, guaranties, liens, fundamental changes, mergers and consolidations, dispositions of assets, investments, paying dividends on capital stock or redeeming, repurchasing or retiring capital stock, or prepaying certain junior indebtedness and preferred stock, certain corporate changes, and transactions with affiliates. The Credit Agreement also provides for events of default customary for term loans of this type, including but not limited to non-payment, breaches or defaults in the performance of covenants, insolvency, bankruptcy, and the occurrence of a material adverse effect on us.

The foregoing description of the Credit Agreement does not purport to be complete and is qualified in its entirety by reference to the Credit Agreement to be filed as an exhibit to our report on Form 10-K for the year ending December 31, 2022, at which time it will be incorporated herein by reference.

Item 1.02 Termination of a Material Definitive Agreement

As described in Item 1.01 of this report, the Original Loan Agreement was replaced by the Credit Agreement and terminated as of November 3, 2022.

Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers

On November 1, 2022, Michael Devine notified us he would be resigning from the Board of Directors (the “Board”) and as Chair of the Audit Committee, effective as of December 31, 2022. Mr. Devine informed us that his decision to resign as a director was not due to any disagreements with the Board or our executives.

On November 1, 2022, the Board appointed Shirley Edwards to the Board, effective as of January 1, 2023, to serve until our annual meeting of stockholders to be held in 2023. Ms. Edwards was also appointed to serve on and as the Chair of the Audit Committee, effective as of January 1, 2023.

From 2002 to 2022, Ms. Edwards was a partner at EY (formerly Ernst & Young LLP), most recently serving as Global Client Service Partner from 2017 to 2022. Ms. Edwards has also served as a board member for Girls Scouts of the Nation’s Capital and Leadership Greater Washington and on the Pamplin College of Business Advisory Council for Virginia Tech and National Capital Region Advisory Board for the American Red Cross. Ms. Edwards holds a B.S. in Accounting from Virginia Tech and is a licensed CPA.

The Board has determined Ms. Edwards is independent in accordance with our corporate governance guidelines and applicable requirements of The Nasdaq Stock Market and the Securities and Exchange Commission. Ms. Edwards is not a party to any transaction involving us required to be disclosed under Item 404(a) of Regulation S-K. There are no arrangements or understandings between Ms. Edwards and any other person pursuant to which she was selected as a director.

In accordance with our non-employee director compensation policy, Ms. Edwards will receive an annual board service retainer of $250,000. The annual retainers are paid one-half in the form of cash and one-half in the form of fully-vested shares of Class A common stock of Appian.

On November 1, 2022, the compensation committee of the Board approved to award a one-time bonus of $1,000,000 to Chris Winters, our General Counsel. This bonus was awarded to Mr. Winters with respect to his outstanding leadership of the Legal Department.

Item 6. EXHIBITS

Exhibit No.	Description	Reference
10.1	Employment Agreement, dated as of October 14, 2022, by and between Appian Corporation and Christopher Jones.+	Attached.
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

November 3, 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)

APPIAN CORPORATION EMPLOYMENT AGREEMENT

This EMPLOYMENT AGREEMENT ("Agreement") is made by and between APPIAN CORPORATION, a Delaware corporation, and its affiliates, successors, assigns and agents ("Appian" or "Company"), and **Christopher Jones** ("you" and all similar references or "employee") (collectively, the "parties") in consideration of employee's at-will employment relationship with Appian.

1. Employment. By accepting employment with Appian, you agree: (a) to devote your professional time, best efforts, attention and energies to Appian's business and to refrain from outside employment or professional practice other than on account of or for the benefit of Appian (unless Appian consents in writing to such outside work); (b) to perform any and all work assigned to you by Appian faithfully and at such times and places as Appian designates; (c) to abide by all policies of Appian, both current and future; and (d) that you are not currently bound by any agreement that could prohibit or restrict you from being employed by Appian or from performing any duties under this Agreement.

2. Compensation and Benefits. Upon the commencement of your employment, Appian will pay you as provided in your offer letter (or as otherwise agreed in writing), payable in accordance with its normal payroll practices. From time to time, Appian may adjust your salary and other compensation at its discretion. During your employment, if you meet the minimum requirements of Appian's plans, you will be eligible to participate in any employee compensation or benefit plans (including group health and 401(k)), incentive award programs, and to receive other fringe benefits that Appian may decide to make available to you. Appian may add, amend or discontinue any of its plans, programs, policies and procedures at any time for any or no reason with or without notice.

3. Restrictive Covenants. You further understand that Appian invests significant resources in the training and development of its employees. Therefore, in light of this, you agree to the following restrictions which are reasonably designed to protect Appian's legitimate business interests without unreasonably restricting your ability to seek or obtain work upon voluntary or involuntary termination of your employment with Appian:

3.1 Prohibition on Competition. During your employment with Appian and for a period of twelve (12) months from the date your employment with Appian terminates, you shall not, within the United States of America, directly or indirectly, provide, aid or assist any other person or entity in providing Similar Products or Services for or on behalf of any Named Company in the same or similar functional capacity as you did for Appian. This provision shall not be construed to prevent you from obtaining employment with any person or entity that provides Similar Products or Services, so long as your new endeavor does not violate the above-stated prohibition.

3.2 Covenant Not to Solicit or Perform Services for Customers or Prospective Customers. During your employment with Appian and for a period of eighteen (18) months from the date your employment with Appian terminates, you agree not to contact, directly or indirectly, any Customer or Prospective Customer with whom you have had any written, electronic, verbal, or other contact on behalf of Appian, to sell, market, render or provide Similar Products or Services.

3.3 Covenant Not to Perform Services for Appian's Business Partners. During your employment with Appian and for a period of twelve (12) months from the date your employment with Appian terminates, you agree not to provide, directly or indirectly, Similar Products or Services for or on behalf of any of Appian's Business Partners.

3.4 Restriction on the Solicitation of Appian's Employees. During your employment with Appian, and for a period of twelve (12) months from the date your employment with Appian terminates, you agree not to, directly or indirectly, induce or solicit any Appian employee to terminate his or her employment or to seek or accept any employment with any other business entity.

3.5 Prohibition from Employing or Retaining Appian's Employees. During your employment with Appian and for a period of twelve (12) months from the date your employment with Appian terminates, you agree not to retain, hire or employ, directly or indirectly, any Appian employee who was employed by Appian on your termination date, or during the twelve (12) months preceding your termination date.

3.6 Definitions. For the purpose of this Section of the Agreement, the following definitions shall apply:

3.6.1 "Similar Products or Services" shall include (i) any Low-Code software development Platform, Business Process Management software, Case Management software, Application

Platform as a Service, or workflow software product, whether sold as an on-premise, hosted, or Software-as-a-Service offering; (ii) e-procurement systems; and (iii) any services pertaining to the implementation of such software technologies described in items 3.6.1(i)-3.6.1(ii) above.

3.6.2 “Customer” means any entity for which Appian has performed Services during your employment with the Company.

3.6.3 “Named Company” shall include any one of the companies listed in Exhibit A. At any time during the Specified Periods, in any year that this agreement is in effect, Appian may modify or replace companies listed in Exhibit A, at Appian’s sole discretion; however, Appian must, in good faith, believe that all companies listed in Exhibit A are competitors of Appian. At any time, you may request a copy of Exhibit A from Appian’s legal department.

3.6.4 “Specified Period” means one of the following quarterly two week periods: January 1 through January 15; April 1 through April 15; July 1 through July 15; and October 1 through October 15.

3.6.5 “Prospective Customer” means any entity that is not a Customer but with respect to whom, within twelve (12) months from your termination date, you conducted, prepared, submitted (or assisted or supervised such conduct) any proposal, client development work product or marketing efforts on behalf of Appian.

3.6.6 The term “Business Partner” means any entity that had a contractual agreement with Appian during your employment with the Company to engage in joint marketing and/or sales efforts, professional services (as a prime contractor or subcontractor), or as a re-seller of the Company’s software.

3.6.7 The term “induce” means the act or process of enticing or persuading another person to take a certain course of action.

3.6.8 The term “solicit” means the act or process of obtaining by entreaty, persuasion, or application, formal or otherwise, a certain course of conduct.

3.7 Reasonableness of Restrictions. You agree that the restrictions set forth in this Section are reasonable, proper and no greater than necessary to protect the legitimate business interest of Appian and do not constitute an unlawful or unreasonable restraint upon your ability to earn a livelihood. In the event that any term set forth above including, but not limited to, the duration of the restraint or the geographic scope, is held unenforceable by court of competent jurisdiction, the parties agree that the unenforceable term may be reduced or modified by the court of competent jurisdiction.

3.8 Waiver. Any of the provisions listed in Sections 3.1 – 3.5 above may be waived in advance only with the express written consent of the CEO of Appian Corporation.

4. Employee Representations. You represent and warrant that you have the legal ability to perform your duties for Appian and that your employment does not violate the terms of any agreement, whether written or otherwise, including but not limited to any non-compete agreement, that would limit or impair your ability to perform your duties. You further represent and warrant that you will not use any confidential or proprietary information from a prior employer, or any other third party.

5. Nondisclosure of Confidential Information. You acknowledge that all information related to the business of Appian that is not in the public domain, nor available from sources other than Appian is considered Confidential. For the purpose of this Agreement, Confidential Information also includes Appian’s Trade Secrets and/or Proprietary Information and Confidential Information of third parties provided to Appian under terms of a confidentiality or nondisclosure agreement.

For the purpose of this Agreement, the definition of a “Trade Secret” shall be congruent with the Virginia Uniform Trade Secret Act, Virginia Code Section 59.1-336(4). “Proprietary Information” includes, but is not limited to, the following types of information (whether or not reduced to writing): Appian’s fees, rates, sales data, customer lists, discoveries, inventions, concepts, software in various states of development and related documentation, design sheets, design data, drawings, design specifications, techniques, consulting or development methodologies, models, source code, object code, documentation, diagrams, flow charts, research, development, processes, training materials, templates, procedures, “know-how,” tools, client identities, client accounts, web design needs, client advertising needs and history, client reports, client proposals, product information and reports, accounts, billing methods, pricing, data, sources of supply, business methods, production or merchandising systems or plans, marketing, sales and business strategies and plans, finances, operations, and information regarding employees. Notwithstanding the foregoing, information publicly known that is generally employed by the trade at or after the time you first learn of such information (other than as a result of your breach of this Agreement) shall not constitute Proprietary Information.

You agree to hold Confidential Information in the strictest of confidence and further agree not to release, divulge, misappropriate, publish or communicate Confidential Information to any person or entity outside of Appian without the express written consent of Appian's CEO or his express designee. You understand that the obligations contained in this Section are effective upon your first day of employment, or earlier (if you receive Confidential Information sooner), and shall survive the expiration of this Agreement, regardless of the reason your employment with Appian is terminated. Furthermore, nothing contained in this Section of the Agreement is designed to waive its statutory rights to seek relief pursuant to the Virginia Trade Secrets Act, Virginia Code Section 59.1-336 et seq.

6. Inventions. For the purposes of this Agreement, "Inventions" mean any concepts, ideas, processes, designs, specifications, improvements, discoveries or other developments, whether or not reduced to practice or patentable, that you conceive or create, in whole or in part, alone or jointly with others, during your employment by the Company, whether during normal work hours or otherwise, if such Inventions meet one of the following conditions (i) the Inventions directly relate to the Company's business (including without limitation the Company's present or contemplated products and research) or to tasks assigned to you by or on behalf of the Company or (ii) the Inventions are written or developed using any of the Company's equipment, facilities, materials, trade secrets, labor, money, time or other resources. "Inventions" also shall be deemed to include any concepts, ideas, processes, designs, specifications, improvements, discoveries or other developments, whether or not reduced to practice or patentable, that you conceive or create within ninety (90) days after your employment with the Company ends that directly relate to the Company's business as conducted prior to the date your employment ended or to any tasks assigned to you by or on behalf of the Company at any time during the last two (2) years of your employment by the Company. "Inventions" do not include any concepts, ideas, processes, designs, discoveries or other developments reduced to practice prior to joining Appian.

6.1 Assignment of Inventions. You agree that all Inventions are the sole and exclusive property of the Company and hereby assign to the Company all right, title and interest in all Inventions.

7. Termination and Resignation. Your employment is terminable at-will. That means that you or Appian may terminate your employment relationship at any time, for any reason or no reason at all. Except as set forth below, in the event that you terminate your employment, you will be entitled to earned and unpaid salary, less required and authorized withholdings and deductions, through your last day of employment. Regardless of the basis of your termination of employment, you agree to provide all assistance requested by Appian in transitioning your duties, responsibilities, clients and other Appian relationships to other Appian personnel, both during your employment and after your termination or resignation. Furthermore, you agree to cooperate with Appian from time to time as necessary concerning matters that may have arisen during the course of your employment with Appian. Such cooperation is an express condition of this Agreement.

7.1 Change in Control Severance. If Appian experiences a Change in Control (as defined in Exhibit B), and Appian terminates your employment without cause or you terminate your employment for Good Reason (as defined in Exhibit B) within one year of such Change in Control, you will receive the following severance from Appian:

(i) Base Salary Severance. You will receive continuing payments of severance at a rate equal to your base salary rate, less applicable tax withholdings, as in effect immediately prior to your termination of employment or, if greater, as in effect immediately prior to the Change in Control, for six (6) months ("Severance Period") from the date of such termination of employment, to be paid periodically in accordance with Appian's normal payroll policies.

(ii) Equity. With respect to any stock options, restricted stock units, or other form of equity allowed by Appian's equity plans ("Unvested Equity") held by you that are unvested at the time of termination, such Unvested Equity shall immediately vest and settle not later than 60 days after the date of your termination.

(iii) Continued Employee Benefits. If you elect continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA") for you and your eligible dependents (as applicable), within the time period prescribed pursuant to COBRA, Appian will reimburse you for, or pay directly on your behalf, the COBRA premiums for such coverage (at the coverage levels in effect immediately prior to your termination of employment) until the earlier of (A) the end of the Severance Period, or (B) the date upon which you and/or your eligible dependents becomes covered under similar plans.

7.2 The severance provided in subsection 7.1 shall have the following contingencies:

(i) Release of Claims Agreement. The receipt of any severance payments or benefits pursuant to this Agreement is subject to you signing and not revoking a separation agreement and release of claims in a form acceptable to Appian (the “Release”), which must become effective and irrevocable no later than the twenty-first (21st) day following your termination of employment (the “Release Deadline”). If the Release does not become effective and irrevocable by the Release Deadline, you will forfeit any right to severance payments or benefits under this Agreement. No severance payments and benefits under this Agreement will be paid or provided until the Release becomes effective and irrevocable, and any such severance payments and benefits otherwise payable between the date of your termination of employment and the date the Release becomes effective and irrevocable will be paid on the date the Release becomes effective and irrevocable.

(ii) Non-Compete, Non-Solicitation, Confidential Information and Invention Assignment Agreements. Your receipt of any payments or benefits under Section 7.1 and 7.2 will be subject to you continuing to comply with Sections 3, 5 and 6 of this Agreement. Any breach of those terms shall result in your immediate forfeiture of all severance benefits.

8. Return of Company Materials. Upon the termination of your employment with Appian, regardless of the basis of the termination, you shall promptly deliver to Appian any of the following items or materials: any laptop or personal computer issued to you, or paid for, by Appian; any material, in any form whatsoever, that constitutes Appian’s Confidential Information, Trade Secret and/or Proprietary Information; the Employee Handbook; the Consulting Best Practices Book (“CBP”); and any other material that is the property of Appian Corporation or Appian Corporation’s customers, including, but not limited to, books, key cards, passes, and other material. You agree that, to the extent permissible by law, Appian may withhold payment of any compensation or reimbursements until you return all such Appian materials.

9. Authority Limited. It is expressly agreed that you shall have no right or authority at any time to make any contract or binding promise of any nature on behalf of Appian, without Appian’s express written consent except within established duties of your employment.

10. Assignment and Survival. The rights and obligations of Appian under this Agreement shall inure to the benefit of, and shall be binding upon, the successors and assigns of Appian. Your rights and obligations are personal and may not be assigned or delegated without the Company’s proper written consent. However, if you become deceased prior to the expiration of this Agreement, any sums that may be due to you as of the date of your death shall be paid to your executor, administrator, heirs, personal representative, successors or assigns. Furthermore, it is expressly understood that the obligations under Sections 3, 4, or 5 of this Agreement shall survive any termination of this Agreement.

11. Remedies. You acknowledge that the damages Appian will suffer as a result of your breach of any provision of Sections 3, 4, or 5 of this Agreement may be impossible to reasonably calculate and that violation of this Agreement will irreparably harm Appian. Accordingly, you agree that Appian will be entitled, in addition to all other rights and remedies that may be available, to obtain injunctive relief enjoining and restraining you from committing a breach of this Agreement. You also agree that in the event Appian is successful in whole or in part in any legal action against you under this Agreement, Appian will be entitled to recover all costs, including reasonable attorney fees from you.

12. Severability. If any provision of this Agreement is held invalid or unenforceable for any reason, the invalidity shall not nullify the validity of the remaining provisions of this Agreement. If any provision of this Agreement is determined by a court to be overly broad in duration, geographical coverage or scope, or unenforceable for any other reason, such provision will be narrowed so that it will be enforced as much as permitted by law.

13. Choice of Law. The laws of the Commonwealth of Virginia shall govern this Agreement. You and Appian consent to the jurisdiction and venue of any state or federal court in the Commonwealth of Virginia.

14. Waiver. Any party’s waiver of any other party’s breach of any provision of this Agreement shall not waive any other right or any future breaches of the same or any other provision. Appian’s CEO may, in his or her sole discretion, waive in writing any provision of this Agreement.

15. Notices. Any notices, requests, demands or other communications provided for in this Agreement shall be in writing and shall be given either manually or by certified mail. Notice to Appian shall be addressed to Human

Resources. Notice to you shall be addressed to the last address you have filed with Human Resources. You may change your address by providing written notice in accordance with this Section. If you fail to keep Appian informed of your most recent address, you agree to waive any claim against Appian related to any damage you may suffer as a result of Appian failing to provide you with a notice under this or any other Agreement you may have with Appian.

16. Entire Agreement. This Agreement is the entire agreement between you and Appian regarding these matters and supersedes any verbal and written agreements on such matters. This Agreement may be modified only by a written agreement signed by you and Appian's CEO. All Section headings are for convenience only and do not modify or restrict any of this Agreement's terms.

17. Counterparts. For convenience of the parties, this Agreement may be executed in one or more counterparts, each of which shall be deemed an original for all purposes.

The parties state that they have read, understood and agree to be bound by this Agreement and that they have had the opportunity to seek the advice of legal counsel before signing it and have either sought such counsel or have voluntarily decided not to do so:

APPIAN CORPORATION	EMPLOYEE
By: /s/ Susan Charnaux	By: /s/ Chris Jones
Date: October 14, 2022	Date: October 14, 2022

Employment Agreement
Exhibit A

Named Companies:

1. BizAgi
2. Nintex
3. Pegasystems, Inc.
4. Salesforce.com
5. Service Now
6. Outsystems
7. Mendix
8. Unqork, Inc.
9. Microsoft
10. Celonis
11. UI Path

Exhibit B Additional Definitions

"Change in Control" means the occurrence of any of the following:

(i) A change in the ownership of Appian that occurs on the date that any one person or entity, or more than one person or entity acting as a group ("Person"), acquires ownership of the stock of Appian or that, together with the stock held by such Person, constitutes more than 50% of the total voting power of the stock of the Appian, provided that such Person is not Matthew Calkins; or

(ii) A change in the effective control of Appian that occurs on the date that a majority of members of the Board (each, a "Director") of Appian is replaced during any twelve (12) month period by Directors whose appointment or election is not endorsed by a majority of the members of the Board prior to the date of the appointment or election, except where such replacement of the Directors is as a result of Matthew Calkins voting a majority of Appian's shares in favor of such replacement. For purposes of this subsection (ii), if any Person is considered to be in effective control of Appian, the acquisition of additional control of the Parent by the same Person will not be considered a Change in Control; or

(iii) A change in the ownership of a substantial portion of Appian's assets which occurs on the date that any Person acquires (or has acquired during the twelve (12) month period ending on the date of the most recent acquisition by such person or persons) assets from Appian that have a total gross fair market value equal to or more than 50% of the total gross fair market value of all of the assets of the Company immediately prior to such acquisition or acquisitions; provided, however, that for purposes of this subsection (iii), the following will not constitute a change in the ownership of a substantial portion of Appian's assets: (A) a transfer to an entity that is controlled by Appian's stockholders immediately after the transfer, or (B) a transfer of assets by Appian to: (1) a stockholder of Appian (immediately before the asset transfer) in exchange for or with respect to Appian's stock, (2) an entity, 50% or more of the total value or voting power of which is owned, directly or indirectly, by Appian, (3) a Person, that owns, directly or indirectly, 50% or more of the total value or voting power of all the outstanding stock of Appian, or (4) an entity, at least 50% of the total value or voting power of which is owned, directly or indirectly, by a Person described in this subsection (iii)(B)(3). For purposes of this subsection (iii), gross fair market value means the value of the assets of Appian, or the value of the assets being disposed of, determined without regard to any liabilities associated with such assets.

For purposes of this definition of Change in Control, persons will be considered to be acting as a group if they are owners of a corporation that enters into a merger, consolidation, purchase or acquisition of stock, or similar business transaction with the Company or Parent.

Notwithstanding the foregoing, a transaction will not be deemed a Change in Control unless the transaction qualifies as a change in control event within the meaning of Internal Revenue Code Section 409A, as it has been and may be amended from time to time, and any proposed or final Treasury Regulations and Internal Revenue Service guidance that has been promulgated or may be promulgated thereunder from time to time.

Further and for the avoidance of doubt, a transaction will not constitute a Change in Control if: (i) its sole purpose is to change the state of Appian's incorporation, or (ii) its sole purpose is to create a holding company that will be owned in substantially the same proportions by the persons who held Appian's securities immediately before such transaction.

"Good Reason" shall mean:

(i) a diminution in your base compensation or target bonus below the amount as of the date of this Agreement or as increased during the course of his employment with Appian, if the material diminution in your base compensation occurs within (A) 60 days prior to the consummation of a Change in Control where such Change in Control was under consideration at the time of your termination or (B) twelve (12) months after the date upon which such a Change in Control occurs;

(ii) a material diminution in your title;

(iii) a requirement that you move your primary residence as a condition of your employment; or

(iv) any action or inaction that constitutes a material breach by Appian of this Agreement; provided, however, that for you to be able to terminate your employment with Appian on account of Good Reason, you must provide notice of the occurrence of the event constituting Good Reason and your desire to terminate your employment with Appian on account of such within ninety (90) days following the initial existence of the condition constituting Good Reason, and Appian must have a period of thirty (30) days following receipt of such notice to cure the condition. If Appian does not cure the event constituting Good Reason within such thirty (30) day period, your termination shall be effective the day immediately following the end of such thirty (30) day period, unless Appian provides for an earlier termination.

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 September 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: November 3, 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 September 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: November 3, 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 September 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 3rd day of November, 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.